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## **Public documents of the state of Wisconsin ... for the fiscal term ending September 30, 1900. Volume II 1898/1900**

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# PUBLIC DOCUMENTS.

FOR 1899-1900.

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## CONTENTS OF VOL. I.

---

1. Message of the Governor.
  2. Report of the Secretary of State.
  3. Report of the State Treasurer.
  4. Report of the State Superintendent.
  5. Report of the Adjutant General.
  6. Report of the Quartermaster General.
  7. Report of the Regents of the University.
  8. Report of the State Board of Agriculture.
  9. Report of the Supervisor of Inspectors of Illuminating Oils.
- 

## CONTENTS OF VOLUME II.

---

1. Report of the Railroad Commissioner.
2. Report of the State Board of Health.
3. Report of the Dairy and Food Commissioner.
4. Report of the Commissioners of the Public Lands.
5. Report of the Free Library Commission.
6. Report of the Regents of Normal Schools.
7. Report of the State Veterinarian.
8. Report of the Natural History Survey.



## CONTENTS OF VOLUME III.

---

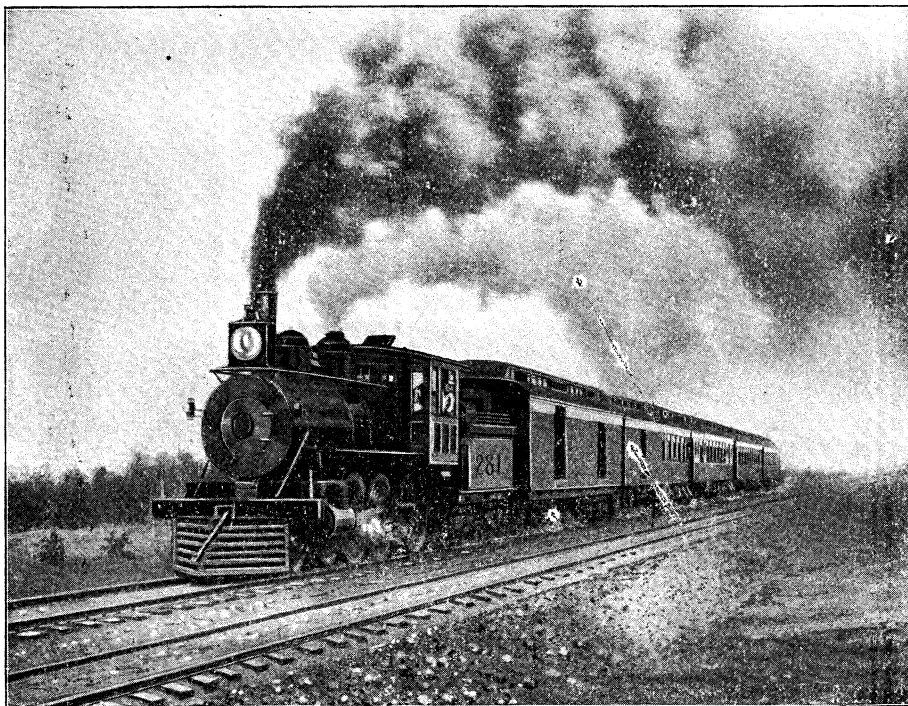
1. Report of the State Board of Control.
  2. Report of the State Bank Examiner, 1899.
  3. Report of the State Bank Examiner, 1900.
  4. Report of the State Board of Arbitration.
  5. Report of the Milwaukee Hospital for the Insane.
- 

## CONTENTS OF VOLUME IV.

---

1. Report of the Commissioner of Labor Statistics.
2. Report of the Commissioners of Fisheries.
3. Report of the Commissioner relating to Manual Training and Agriculture.
4. Report of the State Board of Immigration.





BURLINGTON TRAIN—CHICAGO TO ST. PAUL,

BIENNIAL REPORT

OF THE

Railroad Commissioner

OF THE

STATE OF WISCONSIN

For the Fiscal Years ending June 30, 1899 and 1900.



MADISON, WISCONSIN:  
DEMOCRAT PRINTING COMPANY, STATE PRINTER.  
1900.

**PERSONNEL OF OFFICE.**

---

GRAHAM L. RICE,	-	-	-	-	-	COMMISSIONER.
JAMES S. STACK,	-	-	-	-	-	DEPUTY COMMISSIONER.
WM. H. HENBY,	-	-	-	-	-	CONSULTING ENGINEER.
WILLIAM A. OWEN,	-	-	-	-	-	MESSENGER.
MARY C. McRAE,	-	-	-	-	-	STENOGRAPHER.

# NINTH BIENNIAL REPORT

OF THE

## RAILROAD COMMISSIONER.

STATE OF WISCONSIN,

*Office of Railroad Commissioner,*

Madison, Wisconsin, December, 1900.

To His Excellency, EDWARD SCOFIELD,

*Governor of Wisconsin.*

In making this ninth biennial report of the workings of this Department an endeavor has been made to make the same as comprehensive and compact as possible. Statistics, tables, tabulations and recommendations may be found in the report covering subjects of importance of the railroads and street cars in Wisconsin.

It gives me much pleasure to state that in my opinion as much progress is being made by railroads in Wisconsin as in any state, they being as fully equipped to render efficient service, and as desirous to accommodate and meet the demands of the public in every way, as in any country where railroads are operated.

### SYNOPSIS OF TABULATED REPORTS OF RAILROADS.

The following summary of reports under different heads has been compiled from the reports of railroads in this state as of June 30, 1900.

### CAPITAL STOCK AND DIVIDENDS.

Thirty-five railway companies doing business in this state, including all the interstate roads, report capital stock outstanding of \$109,086,016.03, upon which dividends amounting to \$3,785,107.54 were paid for the year ending June 30, 1900. The logging railways are not included in the above. Eleven railways out of forty-nine paid dividends on capital stock during the past year.

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*General Report.*


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## FUNDED DEBT.

*Mortgage Bonds, Miscellaneous Obligations, and Income Bonds.*

Twenty-six railroads, including the interstate roads, estimated upon the mileage basis, there is outstanding

Funded bonds or obligations to the amount of.....	\$147,443,034 57
Equipment Trust obligation.....	9,393,118 82
Deferred interest on latter.....	2,938 19
Total .....	\$156,839,141 58

## EQUIPMENT TRUST OBLIGATIONS.

Six railroads in this state have issued equipment trust obligations, the original amount of which was \$10,239,208.83, of which obligations \$9,393,118.82 is still outstanding. Interest on these obligations during the year amounted to \$291,480.93, and there was interest paid thereon to the amount of \$292,408.58. The amount of cash paid on delivery of the equipment was \$60,931.50.

## ASSETS.

Current assets and liabilities, cash and current assets available for payment liabilities, June 30, 1900.

Cash.....	\$4,484,463 13
Bills receivable.....	48,426 49
Due from agents, conductors and paymasters.....	1,274,067 29
Net traffic balances due from other companies.....	330,678 39
Due from solvent companies and individuals.....	626,654 77
Other cash assets, except material and supplies.....	183,295 59
Due from United States government.....	212,373 69
Balance current liabilities.....	3,025,913 99
Total.....	\$10,185,878 34
Less cash, red figures.....	3,049 60
Total.....	\$10,182,828 74
Add red figures.....	111,205 31
Total.....	\$10,294 034 05

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*General Report.*


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## LIABILITIES.

Current assets and liabilities, current liabilities accrued to and including June 30, 1900.

Loans and bills payable.....	\$518,911 13
Audited vouchers and accounts.....	3,743,960 64
Wages and salaries.....	1,446,793 28
Net traffic balances due to other companies.....	212,846 78
Dividends not called for.....	205,584 49
Matured interest coupons unpaid including coupons due July 1, 1900.....	1,886,856 95
Rentals due July 1, 1900.....	88,539 50
Miscellaneous.....	1,132,540 42
Balance cash assets.....	1,055,558 06
	<hr/>
	\$10,291,591 25
Less red figures.....	2,442 80
	<hr/>
	\$10,294,034 05

## RECAPITULATION FUNDED DEBT.

Apportioned to railroads.....	\$247,318,739 57
To other properties.....	2,011,950 96
	<hr/>
Total, 31 roads.....	\$249,350,690 53

Miles upon which based, 6,118.38, being exclusive of logging railways, and a few others as indicated on table not reported.

For amount per mile of road, see table under this head.

## PERMANENT IMPROVEMENTS.

For the year ending June 30, 1900, twenty-seven roads reporting improvements made and additional equipment purchased as follows:

For construction.....	\$5,194,415 20
For equipment.....	1,563,379 82
	<hr/>
Total.....	\$6,757,795 02

## COST OF ROAD AND EQUIPMENT.

Thirty-five railways have reported cost of road and equipment, year ending June 30, 1900. The total cost of these roads



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*General Report.*


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and equipment, as reported, amounted to \$242,069,719.84. This does not include the cost of the so-called logging railways. See statistical report under this head.

The total cost of roads reported as of December 31, 1899, complete, amounted to \$247,502,364.44.

## INCOME ACCOUNT.

Operating reports of thirty-nine railways in this state show:

Gross earnings of.....	\$41,257,551 47
Operating expenses.....	25,643,590 62
	<hr/>
	\$15,613,960 85
Deficit, eight roads.....	862,799 43
	<hr/>
Income from operation.....	\$15,551,161 42
Income from other sources.....	1,032,248 38
	<hr/>
Total income.....	\$16,583,409 80

*Whole Line.*

Same roads, gross earnings.....	\$188,014,292 39
Same roads, operating expenses.....	112,265,568 71
	<hr/>
	\$75,748,723 68
Deficit, seven roads.....	28,625 87
	<hr/>
	\$75,720,097 81
Income from other sources.....	5,705,927 13
	<hr/>
Total income, whole line.....	\$81,426,024 94

*Deductions from Income.*

Interest on funded debt.....	\$6,608,694 96
Interest on interest bearing current liabilities.....	35,900 24
Rentals.....	38,614 29
Taxes.....	1,401,853 55
Other deductions.....	1,703,972 22
	<hr/>
Total deductions.....	\$9,789,035 26

## SURPLUS FROM OPERATION.

After paying operating expenses and dividends, the railways of this state had on hand June 30, 1900, \$7,766,368.12.

## EARNINGS.

*Passenger:* Complete returns of all railways within this state and the proportionate amount of the interstate railways

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*General Report.*


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show earnings in Wisconsin for the year ending June 30, 1900, to be as follows:

For sale of tickets .....	\$8,231,965 33
Mail .....	1,153,156 64
Express .....	630,095 91
News .....	8,597 45
Extra baggage and storage .....	157,771 63
Sleeping and parlor cars .....	109,991 59
Miscellaneous train earnings .....	58,221 21

Total passenger train earnings .....	\$10,349,779 76
--------------------------------------	-----------------

*Freight:*

Freight earnings .....	\$30,495,025 14
Stock yards .....	38,609 55
Elevators .....	8,068 76
Other items .....	27,297 69

Total freight earnings .....	\$30,569,001 14
------------------------------	-----------------

*Other earnings from operation other than passenger and freight:*

Car mileage balance .....	\$32,547 23
Switching charges balance .....	124,486 91
Telegraph companies .....	19,895 12
Rentals from tracks, yards and terminal .....	26,630 11
Other rentals .....	99,437 96
Other sources .....	36,178 06

Total other earnings .....	\$338,750 37
Total gross earnings .....	\$41,257,551 27

## BONDS OWNED.

The interstate railways of this state own bonds of other companies of the par value of \$82,279,025.62, valued at \$34,858,398.52, upon which the dividends or income amounted during the fiscal year ending June 30, 1900, to \$2,395,650.87.

The Wisconsin proportion of these bonds have a par value of \$20,145,632.92, actual value of \$3,132,790.74, upon which dividends or income to the amount of \$472,957.69 was paid during the past fiscal year.

## STOCKS OWNED.

The interstate railways of Wisconsin own stocks to the amount of \$41,474,170.29. These stocks are valued at \$39,168,-

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*General Report.*


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382.04, upon which the owners received during the year ending June 30, 1900, dividends or income amounting to \$1,450,-811.75.

The Wisconsin proportion of these stocks are estimated to have a par value of \$8,969,636.83, with actual value of \$5,034,-346.97, upon which an income was derived of \$187,789.64.

## RENTS RECEIVED.

Rents received from tracks, yards and terminals in Wisconsin during the year ending June 30, 1900, amounted to \$108,657.65.

## MISCELLANEOUS INCOME.

The net miscellaneous income of the railways in Wisconsin for the year ending June 30, 1900, was \$526,124.64.

## OPERATING EXPENSES.

*Maintenances of Way and Structures.*

June 30, 1900.

Repairs of roadway.....	\$3,102,625 65
Renewals of rails.....	544,514 08
Renewal of ties.....	771,723 81
Repairs of bridges and culverts.....	961,983 54
Repairs, fences, crossings, signs, etc.....	150,559 84
Repairs of buildings.....	587,400 82
Repairs, docks and warehouses.....	115,680 10
Repairs of telegraph.....	42,820 44
Other expenses.....	494,422 27
Excess actual over proportional.....	317,634 20
Total apportioned to passenger and freight.....	\$6,994,196 75

*Maintenance of Equipment.*

Wisconsin, June 30, 1900.

Repairs and renewals of locomotives.....	\$1,393,962 56
Repairs and renewals of passenger cars.....	507,065 80
Repairs and renewals of freight cars.....	1,260,275 81
Repairs and renewals of ferry boats, tugs, floats and barges.....	23,331 22
Shops, watchmen, tools, etc.....	116,398 93
Other expenses.....	750,623 63
	\$4,051,657 93

*General Report.*

## OPERATING EXPENSES.

June 30, 1900.

*Conducting Transportation.*

Wages of enginemen, firemen and roundhousemen .....	\$2,583,731 03
Fuel for locomotives .....	2,830,287 58
Water supply for locomotives .....	117,480 77
All other supplies for locomotives .....	114,368 92
Wages of other trainmen .....	1,873,466 12
All other train supplies .....	331,466 75
Wages of switchmen, flagmen and watchmen .....	884,939 64
Expenses of telegraph, including train dispatchers, etc ..	472,622 50
Wages of station agents, clerks and laborers .....	1,763,922 38
Station supplies .....	164,899 21
Switching charges balance .....	231,135 84
Car mileage balance .....	163,816 92
Loss and damages .....	174,232 57
Injuries to persons .....	265,542 36
Barges, floats, tugs, ferry boats, expenses, including wages and supplies .....	55,725 36
Other expenses .....	724,951 26
Total operating expenses .....	\$12,752,589 21

## OPERATING EXPENSES.

*General Expenses.*

Salaries of officers .....	\$271,310 14
Salaries of clerks .....	312,176 45
General office expenses and supplies .....	72,439 20
Agencies, including salaries and rent .....	376,538 93
Advertising .....	94,983 85
Commissions .....	139,600 42
Insurance .....	62,328 30
Expense of fast freight lines .....	
Expense of traffic association .....	26,248 54
Expense of stock yards and elevators .....	39,230 39
Rentals of tracks, yards and terminals .....	246,685 80
Rentals not otherwise provided for .....	37,448 60
Legal expenses .....	88,569 32
Stationery and printing .....	71,766 74
Other general expenses .....	120,321 88
Total operating expenses .....	\$1,959,091 79
Mileage upon which based .....	6,229 99
Average for thirty-five roads .....	177 71

## DISTRIBUTION OF EMPLOYES.

General Administration .....	577
Maintenance of Ways and Structures .....	9,544
Maintenance of Equipment .....	3,025
Conducting transportation .....	11,563
Total .....	23,719

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*General Report.*

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## PERCENTAGE OF OPERATING EXPENSES TO EARNINGS.

An estimate of percentage of operating expenses to earnings taken from the reports of thirty-one railways, including the interstate roads, with a mileage of 6,229 miles, shows the average operating expenses of these roads to be 82.5 per cent. The lowest being that of the Duluth, Superior & Western Terminal Company, 40.75, and the highest that of the Chicago, Madison & Northern, 132.22.

## RENTALS PAID.

The railroads of Wisconsin paid \$26,303.30 rentals for lease of road.

There was nothing paid by roads as interest on bonds guaranteed or dividends on stock guaranteed. It does not appear from the reports that there is any liability on account of guaranty of interest on stock or bonds of other companies.

## FOR LEASE OF OTHER PROPERTY.

Twelve roads report having paid for rents of tracks, yards and terminals, \$329,637.11.

## COMPARATIVE GENERAL BALANCE SHEET.

Itemized statement of comparative general balance sheet will be found elsewhere in the report for the year, 1899 and 1900.

## IMPORTANT CHANGES.

Important changes during the year will be found under the head of History of Road, which also contains contracts, agreements, etc., affecting business within the state of Wisconsin for the past two years.

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*General Report.*


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## EMPLOYES AND SALARIES.

	No.	Yearly com- pensation.
General officers.....	108	\$356,808 58
Other officers and clerks.....	575	350,280 31
Station agents.....	869	517,441 80
Other station men.....	2,110	946,042 66
Enginemen.....	1,276	1,435,422 08
Firemen.....	1,327	920,526 76
Conductors.....	839	893,225 05
Other trainmen.....	1,721	1,069,466 06
Machinists.....	523	343,339 43
Carpenters.....	1,034	622,143 77
Other shopmen.....	1,913	987,783 47
Section foreman.....	1,017	552,547 55
Other trackmen.....	5,569	1,943,814 86
Switchmen, flagmen and watchmen.....	1,072	722,787 73
Telegraph operators and dispatchers.....	727	465,544 12
Employs account, floating equipment.....	29	11,612 17
All other employes and laborers.....	4,017	2,337,201 11
Total less general officers.....	24,618	
Total compensation including general officers.....		\$14,516,381 51

## PASSENGER TRAIN MILEAGE.

The reports of railways under this head are so incomplete that it is impossible to make anything like an accurate statement of the number of passengers carried earning revenue, the number carried one mile, the average distance carried, amount received from each passenger, average receipt per passenger per mile, passenger earnings per mile of road, and passenger earnings per train mile.

Twenty-four roads, exclusive of the Chicago, Milwaukee and St. Paul, report number of passengers carried earning revenue as 7,843,873; those carried one mile, same roads, 258,389,026; average distance carried, 21.87; total passenger revenue, including the Chicago, Milwaukee & St. Paul, \$8,206,389.66; average amount received from each passenger, 54.2 cents. The average estimate cost of carrying each passenger one mile of these roads appears to be 3.88 cents. This estimate ranges from 2.216 cents, reported by the Chicago & Northwestern, to 8.151 cents reported by the Marinette, Tomahawk & Western.

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*General Report.*

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## FREIGHT TRAFFIC.

The total freight revenue of the railways in this state for the year ending June 30, 1900, appears to be \$30,201,484.54, exclusive of logging railways and a few other unimportant roads.

Detailed report will be found elsewhere in this report, giving the number of tons carried earning revenue, number of tons carried one mile, average distance haul of one ton, average amount received for each ton of freight, estimated cost of carrying one ton one mile, total freight earnings, freight earnings per mile of road, and freight earnings per train mile.

## TRAIN MILEAGE.

Twelve roads report miles run by passenger trains, 8,235,984. Sixteen roads report miles run by freight trains, 9,431,865. Seventeen roads report miles run by mixed trains, 1,265,840. Twenty-three roads report miles run by trains earning revenue as 23,737,409. Nine roads report 4,108,316 miles run by switch engines, and the same roads report grand train mileage of 30,196,312.

## CAR MILEAGE.

Statistical table, or car mileage, will be found in this report, which gives the mileage of loaded freight cars, North or East, South or West mileage of empty cars, same directions, average number of cars in train, loaded and empty, average number of tons of freight in train with mileage upon which based.

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*General Report.*


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## FREIGHT TRAFFIC MOVEMENT.

(Company's Material Excluded.)

*Products of Agriculture, June 30, 1899, to June 30, 1900.*

Grain.....	2,268,436
Flour.....	853,549
Other mill products.....	171,585
Hay.....	152,658
Tobacco.....	41,877
Cotton.....	
Fruit and Vegetables.....	410,127
Other Agricultural products.....	157,718
	<hr/>
Total freight tonnage.....	4,055,950
	<hr/>
Freight originating on roads in Wisconsin.....	2,304,577
Freight received from other roads and connecting roads and other carriers.....	1,751,373
	<hr/>
Total freight tonnage.....	4,055,950

*Product of Animals.*

Live stock.....	353,097
Dressed meats.....	40,108
Other packing house products.....	95,228
Poultry game and fish.....	68,406
Wool.....	15,093
Hides and leather.....	61,568
All other.....	1,670
	<hr/>
Total Freight Tonnage.....	635,270
Freight originating in Wisconsin.....	321,284
Freight originating outside Wisconsin.....	313,986
	<hr/>
Total Freight tonnage.....	635,270

*Product of Mines.*

Coal Anthracite.....	904,392
Coal Bituminous.....	2,550,878
Coke.....	1,690,994
Ores.....	2,677,388
Stones and other like articles.....	1,341,201
Other products of mines.....	194,084
	<hr/>
Total Freight Tonnage.....	9,358,937
Freight originating on road in Wisconsin.....	3,170,575
Freight originating outside Wisconsin.....	6,188,462
	<hr/>
Total Freight Tonnage.....	9,358,937



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*General Report.*


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*Product of the Forests.*

Lumber.....	6,054,773
Other forest products.....	1,085,030
<b>Total Freight Tonnage.....</b>	<b>7,139,803</b>
Freight originating in Wisconsin.....	6,433,496
Freight originating outside Wisconsin.....	705,307
<b>Total Freight Tonnage.....</b>	<b>7,139,803</b>

*Manufacturers.*

Petroleum and other oils.....	71,704
Sugar.....	85,524
Naval stores.....	225,968
Iron, pig and bloom.....	510,010
Iron and steel rails.....	1,120,705
Other castings and machinery.....	187,791
Bar and sheet metal.....	384,487
Cement, brick and lime.....	491,222
Agricultural implements.....	252,443
Wagons, carriages and tools.....	77,730
Wines, liquors and beer.....	508,641
Household goods and furniture.....	135,434
Other wares, not classified.....	16,865
<b>Total freight tonnage.....</b>	<b>4,068,524</b>
Freight originating in Wisconsin.....	2,569,819
Freight originating outside Wisconsin.....	1,481,840
Freight unclassified.....	16,865
<b>Total freight tonnage.....</b>	<b>4,068,524</b>

*Merchandise and Miscellaneous.*

Merchandise.....	1,438,723
Miscellaneous.....	2,054,319
<b>Total freight tonnage.....</b>	<b>3,493,042</b>
Freight originating in Wisconsin.....	2,022,297
Freight originating outside Wisconsin.....	827,352
Freight not classified.....	743,393
<b>Total freight tonnage.....</b>	<b>3,493,042</b>

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*General Report.*


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## RECAPITULATION.

(28 roads reporting.)

Products of agriculture.....	4,055,950
Products of animals.....	635,270
Products of mines.....	9,358,937
Products of lumber.....	7,139,803
Products of manufacturers.....	4,068,524
Products of merchandise.....	1,438,723
Miscellaneous.....	2,054,319
	<hr/>
	30,751,523

## DESCRIPTION OF EQUIPMENT.

Tables are given showing the number and kind of cars in the passenger services, of all roads in this state, together with a description of the kind of brakes and automatic couplers. These reports are incomplete, as only about one-half of the roads have reported fully.

## MILEAGE OF ROADS OPERATED.

Miles of single track.....	6,250.63
Miles of second track.....	226.91
Miles of third track.....	1.62
Miles of fourth track.....	9.97
Miles of yards, tracks and sidings.....	1,275.09
Total miles operated, all tracks.....	7,756.92

## LINE REPRESENTED BY CAPITAL STOCK.

Main line.....	6,456.88
Branches and spurs.....	1,076.44
Line of proprietary companies.....	16.06
Line operated under lease.....	17.33
Line operated under contract.....	66.02
Line operated under trackage rights.....	111.30
New line constructed during year.....	135.97

## RAILS.

Iron.....	633.29
Steel.....	6,969.09
	<hr/>
Total mileage operated.....	7,602.38

Report of thirty-two railways.

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*General Report.*


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## RENEWAL OF RAILS AND TIES.

During the year from June 30, 1899, to June 30, 1900, the railways laid new rails, 115 tons of iron rails and 55,746 tons of steel rails, mostly eighty to ninety pounds weight per yard. The price ranged from \$19.80 to \$35.00 per ton.

There were 2,284,304 new cross ties laid during the year of various kinds of wood, including oak, pine, tamarac, hemlock, elm, butternut, cedar, etc. The oak ties cost about 35c, cedar 22c, elm 20c, butternut 20c, tamarac 17c, hemlock 25c, pine 24c, etc.

## FUEL.

Consumption by locomotives. The total tonnage of fuel consumed appears to be 2,362,443.30, and the miles run by locomotives 55,425,723.38.

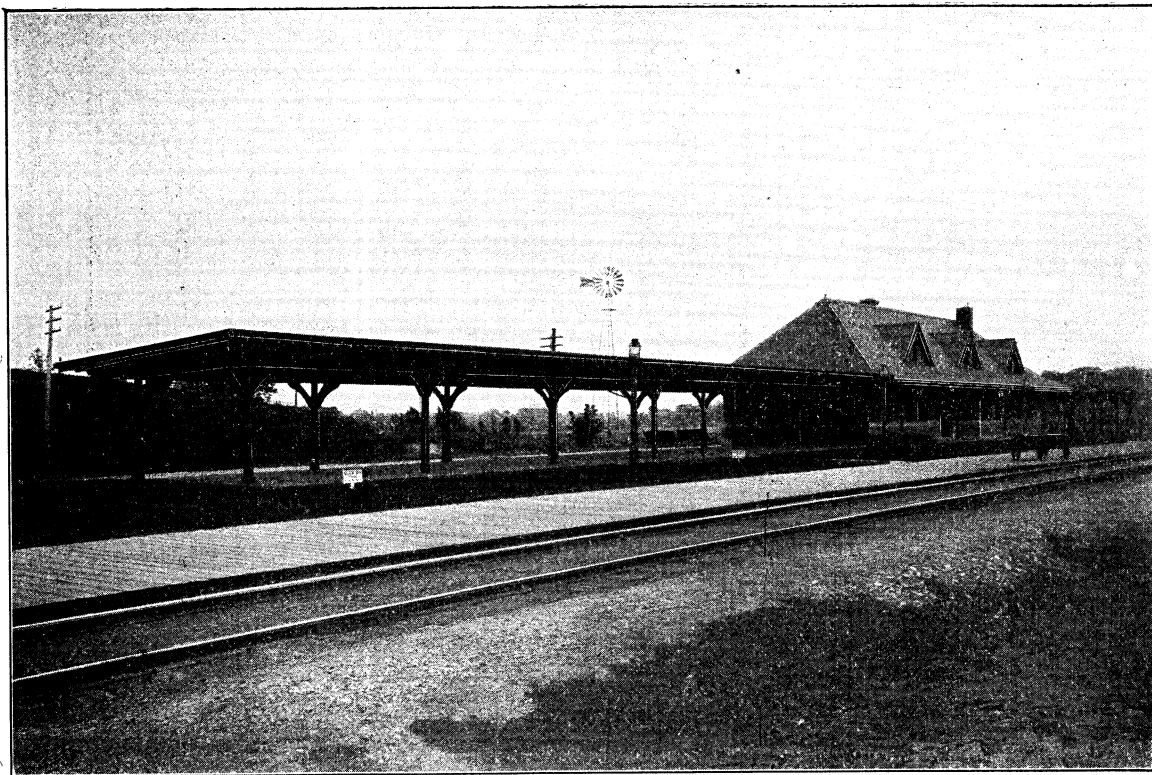
## ACCIDENTS TO PERSONS.

*Trainmen.*

	Killed.	Injured.
Coupling and uncoupling cars.....	14	33
Falling from trains and engines.....	7	22
Overhead obstructions.....	1	1
Collisions.....	1	10
Derailments.....	2	8
Other train accidents.....		5
At stations.....	3	17
Other causes.....	3	23
Total.....	31	119

*Employees, Switchmen, Flagmen and Watchmen.*

	Killed.	Injured.
Coupling and uncoupling.....		3
Falling from trains and engines.....	1	5
At stations.....		3
Other causes.....	1	3
Total.....	2	14



CHICAGO, MILWAUKEE & ST. PAUL RAILWAY—PEWAUKEE.



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*General Report.*


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*Employees, Other Than Trainmen, Switchmen, Flagmen and  
Watchmen.*

	Killed	Injured.
Coupling and uncoupling.....	1	2
Falling from trains and engines.....	3	5
Collisions.....	3	2
Deraillments.....		6
At stations.....	8	22
Other causes.....	15	60
Total.....	30	97
Grand total employes killed, 63; injured, 230.		

## ACCIDENTS TO PERSONS.

*Passengers.*

Collisions.....	6	22
Deraillments.....		28
Other train accidents.....		4
At stations.....	3	9
Other causes.....	1	10
Total.....	10	73

*Trespassers.*

Collisions.....	1	1
Other train accidents.....	2	1
At highways.....	7	4
At stations.....	57	23
Other causes.....	54	29
Total.....	121	58

*Not Trespassers.*

At highway crossings.....	30	17
At stations.....		1
Other causes.....	4	
Total.....	34	18

## CHARACTERISTICS OF ROAD.

Statistical tables show the totals, number of curves, aggregate length of curved line, length of straight line, ascending grades, descending grades, giving number, sum and aggregate length of each.

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*General Report.*


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Tables on bridges, trestles, tunnels, etc., giving number, aggregate length, minimum length, maximum length, kind of material used, overhead highway crossings, conduits, etc., are also fully described.

## TELEGRAPH.

*Owned by Railroad Companies.*

Miles of line.....	3,438.42
Miles of wire.....	12,871.75

*Operated by Railway Companies.*

Miles of line.....	1,319.61
Miles of wire.....	4,078.04

See statistical table for full details.

## CONDITION AND MANAGEMENT OF RAILROADS.

The law makes it the duty of the railroad commissioner to inquire into and report the condition and management of the several railways doing business in this state. He shall examine and ascertain the pecuniary condition and manner of management of every such railroad corporation.

There are now in this state some fifty odd railroad corporations operating about seven thousand miles of railroad, with a capital stock of 109 million dollars and a bonded indebtedness of 149 million dollars. Each of these companies have general offices and some twenty-five thousand employes.

In addition to the steam railways the last legislature made it the duty of all street railways, electric, or other power, to report to the railroad commissioner. Twelve hundred or more assessors make a report to this department every year. The law makes it the duty of the railroad commissioner to prepare and publish and distribute twenty-five thousand state railroad maps. There are a couple of hundred complaints made annually by the citizens of the state, alleging overcharges, discriminations and other unlawful acts on the part of the railway com-

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*General Report.*

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panies. The daily letters are numerous. Investigations of all kinds of complaints are demanded by the public. All the railroads have to be inspected, blanks have to be prepared for reports, reports have to be checked up, a report has to be prepared annually and filed with the state treasurer, showing the amount of tax due from each road, the cost of each road, the amount of capital stock, bonded indebtedness, and total expenses of each road; the gross earnings, the net earnings, amount of dividends paid, the amount of deficit, if any, the gross earnings per mile of road, and the number of miles operated by each road. Also make a biennial report to the governor, and make such recommendations as he thinks proper for the consideration of the legislature. All these things, and a good many more, is expected, all of which the law provides shall be done by the commissioner and his deputy.

The statutes provide that "such deputy shall perform all the clerical labor in said office and the commissioner shall not be entitled to any other clerical assistance."

It is needless to say that the work cannot be done in a thorough manner, and that the department should have several more employes to do the work in proper shape.

The railway companies have been all prosperous for the past three years. Traffic has been heavy and rates satisfactory to the companies.

The St. Cloud, Grantsburg & Ashland Ry., and the Duluth Short Line were purchased by the St. Paul & Duluth, and thereafter the Northern Pacific purchased the latter road.

The Wisconsin Central Ry. Co. has been re-organized. The new company has included in its property the Packwaukee & Montello, the Milwaukee & Lake Winnebago, and the Chicago, Wisconsin & Minnesota.

The Kickapoo, Valley & Northern has become the Wisconsin Western, on the sale of the former property by the receiver.

The only railway in the state in the hands of a receiver is the Washburn, Bayfield and Iron River Ry.

Elsewhere will be found the history of each road in this



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*General Report.*

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state, also the report of Consulting Engineer Wm. H. Henby, which gives valuable details as to the condition of bridges, trestles, tunnels, etc., of the several railways of the state.

## RATES.

The question of rates is the most difficult and perplexing that confronts the Commissioner. The fundamental principles of our nation and state laws are that all charges on interstate and state commerce shall be reasonable and just; that there shall be no unjust discrimination in favor of individuals, firms, corporations, cities or sections of the country; that all charges shall be open to the public and shall have reasonable stability; that classification of articles, rules and regulations for their carriage shall be reasonable; that carriers shall not unjustly discriminate in interchange with connection, on traffic destined to points beyond termini; that dissimilar circumstances and conditions may justify a lesser charge for a longer than for a shorter haul, and that the national and state commissioners shall pass upon alleged violations of these principles and pronounce judgment subject to appeal to the courts.

In our state, should the commissioner's ruling not be obeyed by the corporation complained of, he is directed to certify the proceeding to the attorney general, who may in his discretion bring an action in the proper court to compel the corporation to comply with the order of the commissioner.

The law of this state on the subject of reasonable rates is found in sections 1798, 1798a, and 1803, Wisconsin Statutes of 1898.

Section 1798 declares that all rates shall be reasonable; that there shall be no discrimination or preference shown to anyone by railroads. Section 1798a fixes a maximum of three cents per mile as passenger rates on all railroads earning three thousand five hundred dollars per mile per annum.

This section should be repealed for the reason that should the commissioner in the future determine that a lower rate than

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*General Report.*

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three cents per mile on this class of roads was just and reasonable, this section might stand as the reasonable maximum rate fixed by the legislature.

Section 1803 fixes the rates on passengers and freight in force on the Chicago, Milwaukee & St. Paul Railway, Western Union Ry. Co. and Chicago & Northwestern Ry. Co., June 15, 1872, as the maximum; this section should also be repealed.

It only affects two railway companies out of the fifty-one now doing business in the state, and in case the commissioner should promulgate a reasonable tariff of rates and a proper classification of commodities, this law might be construed by the courts to fix, as far as the companies named are concerned, a reasonable maximum rate. For the further reason, assuming that this section fixes the maximum rate for the Chicago, Milwaukee & St. Paul Railway, and the Chicago & Northwestern Railway, the other railway companies in this state have no restriction; they have no maximum that is applicable to them whatever. This law is now nearly twenty-nine years old, and the railroad companies are charging a great deal less than the rates in effect in June, 1872, and it is doubtful if the rates will ever be as high again as they were at that time.

The trend of public thought for a generation has been toward statutory regulation of railroads, and supervision of them by commissioners, acting under authority of law.

The underlying principle is that charges must be reasonable and just for the service performed by the carrier for the public. This opens a vast field of inquiry to those who are charged with determining the scales of just and reasonable charges under different circumstances and conditions throughout the country. There are railways in this state that have cost nearly \$100,000 per mile and others that have cost \$10,000. There are systems with their terminals that can not be duplicated for twice what they cost. There are nearly level lines, with tonnage and travel ten times as dense as others of like gradients. There are railroads paralleling water routes, and railways nearly 100 miles

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*General Report.*

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from navigable waters. Some are subjected to floods and inundations and other to snow drifts and land slides, and still others to all these combined. Some furnish luxurious transportation for passengers at speeds of 60 to 75 miles per hour, while others can provide only doubtful accommodations at one-half the speed. Some have two excellent main tracks to insure safety and despatch, while others have but an inferior single track, which is maintained in a passable condition with difficulty by small traffic and from narrow revenues.

The securities of many railways represent actual money expended, while those of others stand for fictitious values. Some corporations are candid in their statements; while others are secretive. Some have large floating liabilities which they show, others appear to have them, which in all instances are not disclosed; still others have none at all. Some use coal at a cost of five dollars per ton; others at a dollar or less, because of location. Some pay 15 cents others 50 cents for cross ties; some owing to locality pay 20 per cent. more for steel rails than others. Mention is made of these few of the many things that enter into a consideration of what is a reasonable and just compensation for the railways to receive, so that the difficulties that confront a commissioner or a court in determining fairly and intelligently an issue presented may be illustrated.

While the law of this state at present is plain that unreasonable rates shall not be charged, demanded or received by railways—there may be some doubt whether or not the railroad commissioner is authorized to fix a reasonable maximum schedule of rates and enforce the same. I have assumed such authority in the case of the Milwaukee Chamber of Commerce vs. the Chicago & Northwestern, and the Chicago, Milwaukee & St. Paul Rys. and made an order taking effect November 15, 1899, reducing the rates on grain from some two hundred stations in this state to Milwaukee, reducing thereby the gross income of these railways some two hundred thousand dollars per annum, and leaving that amount in the hands of the producers. Such

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*General Report.*

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laws should be enacted as would give the commissioner authority to promulgate a reasonable tariff of freight and passenger rates and a proper classification of freight within the state, together with sufficient power to enforce such rates.

## MAPS.

The law provides that the Railroad Commissioner shall publish biennially, 25,000 railroad maps, 22,000 of which are mounted; 8,000 of the latter are turned over to the State Superintendent of Public Instruction to be distributed among the school districts of the state.

The life of a map is longer than two years, and the changes in railway lines is not sufficient in two years to warrant the issuance of a new map so often. The cost of each edition is approximately \$10,000.00.

The issue could be reduced 8,000 to superintendent, except every fourth year, and a much cheaper map could be provided for, saving an average of \$5,000.00 per annum.

## STATISTICAL TABLES.

The statistical tables for the year 1900 have been prepared with great care. The amounts chargeable to the several expense accounts and the credits to income account, have been apportioned by this department, as well as all other tables in the case of inter-state railways.

There was a great deal of hard work done and considerable time spent in preparing these tables, with the hope that hereafter this department would be so constituted as to be able to continue these deductions, thus making the statistical tables of some value to the public for comparative purposes.

## INTERLOCKING PLANTS.

During the incumbency of the present commissioner, eight permits have been issued for interlocking plants, and one safety

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*General Report.*

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crossing device. Plans and specifications of these several devices are now on file in this office, as provided by law. There are now in Wisconsin nearly one hundred interlocking and derauling devices in operation, all of which when inspected were found in perfect working order, and apparently in charge of competent operators.

**PENSIONS.**

The Chicago & Northwestern Railway company has inaugurated a pension system for all its employes, number about 27,000, of which 7,407 are employed in this state. The matter of creating a pension system for the Northwestern was first brought before the stockholders of the company last June, and on December 12, 1900, the directory decided that the plan should be adopted.

It will take time to demonstrate the practical workings of the plan, but it is an honest endeavor on the part of the moneyed interest of the corporation to convince the employe that if he regards the company's interest as he would his own, he has a moral certainty of employment, fair wages and a pension in his old age.

**WAREHOUSES.**

There is no law in this state requiring warehouses or grain elevators to report to this department. The necessity of such a law has become apparent. Nearly every state has found it necessary to exercise more or less control over elevators and warehouses, and unless there is some supervision over the buyers of agricultural products, such as grain, tobacco and live stock, the seller is to a considerable extent at the mercy of the buyer. I have found in my experience of two years that the local market price of the products of the farm are not always governed by the rate charged by the railroad companies to the ultimate market, but that frequently the lower price is paid at

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*General Report.*

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the point where the rate is the lowest; and a higher price is often paid where the rate is the highest. The buyer having a monopoly, fixes the prices according to circumstances and not upon the rate of transportation to market.

## HIGHWAY CROSSINGS.

The frequency of accidents at highway grade crossings is well known to all. I believe that the number of grade crossings could be greatly decreased by legislation looking toward the gradual increase of overhead and underway crossings.

The town, county and state, as well as the railway companies should contribute to the building of overhead and underway crossings.

The railroad commissioner should be empowered to condemn or order changed crossings that are manifestly dangerous to the traveling public and trainmen alike.

There are a great many grade crossings in the state that are exceptionally dangerous and they should be abolished. The railroad commissioner should have power to cause their separation, and also the power to prohibit the future establishment of grade crossings of steam roads with street and highway crossings, and also of electric, with steam roads, where it is at all practicable to construct an overhead or underway crossing.

This is one of the important matters for the safety of travelers on highways, railway employes, and to a certain extent the patrons of the railroads, that should have careful consideration by the law makers.

## LOGGING RAILROADS.

This department has endeavored to locate all railroads in the state of all kinds. There has been found a number of logging railways in the state, some of which have paid taxes to the state and others have been assessed locally; others have paid no tax at all. The various duties of the limited force in this office

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*General Report.*

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have prevented from going into the matter of classifying these roads as they should be. Some of them, have during the past two years, paid taxes to the state on the basis of five dollars per mile. The great majority, however, insist that they are not railroads in the sense of being common carriers. C. F. Latimer, secretary of the Ashland, Siskiwit & Iron River Logging R. R. says: "Ours is a strictly private corporation, doing our own work in our own way, asking no favors from the state, accepting no public land, carrying no passengers, nor doing anything that would be called railroad business any more than an ordinary lumber company would be doing." John S. Owen, president of the John S. Owen Lumber Co. of Owen, Wis., writes: "We have in operation at Owen, Wis., a logging railroad five miles long, and are building a five mile addition. We are not organized under the law, so have no right of condemnation, nor do we do any business except for ourselves." The John R. Davis Lumber Co. of Phillips, Wis., are operating what is known as the Phillips Spur, which runs in an easterly direction from the city of Phillips about twelve miles, also is known as the Coolidge Spur, which branches off from the main line about one mile north of Coolidge station, and runs in an easterly direction for about six miles.

The Empire Lumber Company of Winona, Minn., is operating a standard gauge railway in Douglas county, Wis., running from Dedham Station on the Eastern Ry. of Minnesota to the St. Croix river, about 30 miles long. They report that it is purely a private enterprise and will not be engaged in public business at all.

The Shell Lake Lumber Company of Shell Lake, Wis., are operating twelve to fourteen miles of narrow gauge railroad equipped with two locomotives and sixty logging cars. Mr. W. R. Bourne, manager, writes, among other things: "It would be hard to give the information you ask for about terminals for the reason that the track is laid as required through logging works, in some instances staying only two or three

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*General Report.*

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weeks in a place. We have at present perhaps twelve or fourteen miles of track laid, of this line. Eight miles will be completely cleaned up and the track removed within the next five weeks. We shall then build in a new location, perhaps, four miles of road for next winter's work. Our road is graded and fitted up for this purpose, and as the track is removed the grade is turned over to the town for highway purposes.

Wm. Holmes & Son, railroad loggers and jobbers of Menomonic, Mich., owns about 30 miles of logging railroad, most of which is in Wisconsin. This company is now paying a tax to the state.

The Quinnesse Logging Company of Marinette, Wis., is operating about 14 miles of private logging railways, and do not pay a state tax.

The Bird & Wells Lumber Company of Wausaukee, Wis., are operating six miles of standard gauge railroad. Mr. H. P. Bird, secretary and treasurer, writes: "Our railroad extends from our mills, in the village of Wausaukee (Sec. 36: 34:20) in a northwesterly direction, on the north side of the Wausaukee river, and terminate in Section 9 and 10-34-20, being built and used exclusively to land logs to our mill; is six miles long, standard gauge 4' 8½". It is altogether our own property and used for same purpose as we formerly used sleds and horses. No freight or passengers are ever hauled except such as pertains to our logging works.

Geo. E. Wood Lumber Company, of Woodboro, Wis., are operating five miles of logging railroad.

The Dessert Lumber Company of Mosinee, Wis., through their attorneys, Mylrea & Bird, write: "The Dessert Lumber Company have referred to us a lot of blanks received from your office. We have been their attorneys for years and have each year informed your department that this company is in no wise engaged in the railway business any more than hauling their own logs to the mill. They do not carry freight or passengers or run any regular trains or haul timber or logs for any



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*General Report.*

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one but themselves. Under these circumstances we do not consider that they are a railway company and required to report to your department, or pay taxes as a railway company."

The following letter received from Ryan, Hurley & Jones of Wausau, Wis., explain fully the position of the Joseph Dessert Lumber Company of Mosinee, Wis.:

Wausau, Wis., Jan. 17, 1900.

Hon. GRAHAM L. RICE, Railroad Commissioner:

Dear Sir:—Our client, the Joseph Dessert Lumber Co., of Mosinee, Wisconsin, has sent us some blanks for reports of railroad companies received by it from you, and has asked our advice as to how the same should be filled out, or what should be done, in as much as the nature of the information called for seems to be such as to suggest that this class of reports is not required from the owners of private logging railroads who are doing business only for themselves.

The Joseph Dessert Lbr. Co. may perhaps properly be called the owner of a small railroad; it owns an engine and some log cars, and has right of way, the greater portion of which will expire in 1901, having been granted in 1891 to expire in ten years. The road is about fourteen miles long, and is connected with the C. M. & St P. R. R., which owns the rails. It was built under an agreement with that company, such as is commonly made between the railroad companies and lumbermen concerning private logging roads.

Sec. 1795 R. S., as amended, seems to relate to the ordinary railroad company that operates as a common carrier, doing business for others, and this seems to be the interpretation put upon it by your office in preparing the blanks for reports, if the forms of blanks received by the Dessert Lbr. Co. are all you have prescribed for this purpose.

If you have other forms applicable to private logging railroads, please send them. If on the other hand you intend these forms to cover both classes of railroads,—common carriers and private logging roads, let us know, and we will fill out the few blanks that can be filled out in these, and return them to you.

It seems to us, and so it seems to our client, that the purpose of the information required by this class of reports must be chiefly to inform the State Treasurer as to the amount of tax which should be paid under the general provisions of law making the tax upon railroad companies a tax upon gross earnings. The Jos. Dessert Lbr. Co. could make no statement of gross receipts, as its railroad does not carry freight for anyone else, nor passengers.

Looking over these forms which the company has been requested to fill out, we will make the following suggestions:

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*General Report.*

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## A. As to the forms called "Statistical Report."

1. The first item, viz.: statement of the actual cost of the road, could probably be approximately ascertained, but as the road was built some years ago, it would necessitate a long and painstaking search through a vast number of items of expenses, and even then would probably be imperfect, especially as to payments for labor expended in construction and repair of roadbed. It would involve a great amount of labor to look it up thoroughly at this time, and unless you think, after considering the fact that this railroad is a mere private affair, and not a common carrier, that the report is necessary, or required by statute, we would like to be saved the trouble of looking the matter up.

2. As to all those items, 2 to 8 inclusive, all that could be said would be that there has been no gross receipts, no net earnings, no interest, nor rentals.

3. As to "Amount paid during the year" for construction, equipment and operation, these could probably be hunted up and stated approximately. As to taxes paid, the company has paid taxes upon all its property, but whether there has been any separation in the tax roll of its engine and cars from its other personal property, we don't know. As to the items of interest, rents and dividends, there would be nothing. The Joseph Dessert Lbr. Co. is a large logging and lumbering concern located at Mosinee. It has an extensive sawmill plant there, planing mill, etc. and a large mill-yard, with a stock of lumber. Whatever dividends the company declares are upon its whole business, of which the railroad is a part. The work done by the railroad goes into the pool just the same as the sawmill and planing mill work. There is not and cannot be any separate account kept of the earnings of either road, sawmill or planing mill.

4. As to "Itemized statement of earnings for calendar year 1899," it will readily be seen for the reasons before stated, there have been no earnings in the sense of doing work for others for which payment has been made, and while it is to be assumed that the company has been able to haul its logs cheaper on this road than it could by teams, and there may have been earnings of the road in that sense, it would be absolutely impossible to make any *statement* of such earnings. Nothing better than an *estimate* could be given, and of course that is not what you require from *railroad companies*. We might as well suggest here that the Joseph Dessert Lbr. Co. is not a railroad company.

B. As to the form "Statement of Monthly Earnings" — and as to each branch thereof — "Passengers," "Freight," "Mail," "Express," etc., you will readily see from what has been said already that there would be nothing in this applicable to the Joseph Dessert Lbr. Co.

C. As to the form "Statement of Monthly Expenses," most of what we have said regarding the same items in the blank requiring statement of "Amount paid during the year" would be applicable here. There would be no interest, rentals, or dividends. General taxes not being levied

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*General Report.*

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monthly there would be nothing under that head, as there might be in a city where water, light or other special taxes were collected monthly. "Operating expenses" could be ascertained in part if the same men are *constantly* employed to operate the engine and cars. But a private logging road is not operated every day. It is operated when there are logs to be hauled. Most of the men who operate it are employed at other things when the logging train is not running.

Please inform us whether in the light of the facts and explanations herein given you still require a report from this company.

Yours truly,

Dir. R.

RYAN, HURLEY & JONES.

The Upham Mfg. Co. of Marshfield, Wis., writes: "The only railroad this company operates is a short line of logging road which starts at Marshfield and ends in the woods. There is perhaps six or seven miles of track laid, but it is only used a month or two in the year to haul in a few logs landed along the same.

The H. W. Wright Lumber Company of Merrill, Wis., writes: "We have graded a roadbed from Glenbrook to Trout Lake, about  $5\frac{1}{2}$  miles long, which the C., M. & St. P. Ry. Co. are operating. The St. Paul Company furnished the iron and laid the ties, while we graded the roadbed and furnished the ties. The St. Paul Company use this only to haul logs to our mill. We have considerable timber in the vicinity of Trout Lake which we are hauling over this line, but are not operating it ourselves, as it is operated in every particular by the C., M. & St. P. R. R. Co.

The Genessee Quarry Company of Genessee, Wis., was accused by this department of owning and operating a railroad upon which it paid no tax to the state. They write: "We own a side track or switch but do not operate any steam or electric railway or cars, simply receiving principally freight flat cars which are owned by the C., M. & St. P. Ry. Co., which they place on our side track for us to load them with shipments of stone."

The Brown-Robbins Lumber Company of Rhinelander, Wis., writes: "We have just found time to look over the blank books

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*General Report.*

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you sent us a short time ago for filling out and find that our logging railroad would cover but very few items in same, as we do not carry any passengers or freight, but simply haul logs for our mill.

In reply to the above letter this office sent the following letter to Messrs. Ryan, Hurley & Jones:

Office of R. R. Commissioner,  
Madison, Wis.

Ryan, Hurley & Jones, Wausau, Wis.,

Gentlemen:—Your favor of the 17<sup>th</sup> inst. at hand relative to the Joseph Dessert Lumber Company making report to this department.

It is hard to tell where to draw the line in the matter of persons or corporations owning and operating a railroad in this state, as to just what kind of a railroad should report. I have concluded for the present at least not to insist upon reports from lumber companies engaged only in hauling its own logs and supplies and not doing business as a common carrier. But where a lumber company does a general railway business, over all or part of its railway, it will be called upon to make the report and pay five dollars per mile tax to the state. The legislature last winter passed a law making it the duty of each town and city assessor in the state to report to this office the names of all railroads, steam and electric in their respective towns and cities. This legislation was brought about I understand, with a view to making logging railways pay state tax. It was argued before the legislature that these logging railways, or many of them, pay no tax what ever; that when the assessors came around they said, "we are a railroad and you can't assess us;" and when the State Treasurer asked for a report and tax, they held up their hands and said: "We are a lumber company."

Yours respectfully,

GRAHAM L. RICE,  
Railroad Commissioner.

I would earnestly recommend that the coming legislature enact laws as will clearly define the taxable position of these logging railroads.

#### TAXATION.

I shall give only a brief statement of how the matter of taxation of railroads looks to me, from my limited experience in the department.

The law at present taxes railways on the gross earnings plan

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*General Report.*


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and is found in section 1213, statutes of 1898, and is as follows:

“Amount of license. Section 1213. The annual license fees for the operation of such railroad within the state shall be as follows:

1. Four per centum of the gross earnings of all railroads, except those operated on pile and pontoon or pontoon bridges, whose gross earnings equal or exceed three thousand dollars per mile per annum of operated railroad.

2. Three and one-half per centum of the gross earnings of all railroads, except those operated on pile and pontoon or pontoon bridges, whose gross earnings equal or exceed two thousand five hundred dollars and less than three thousand dollars per mile per annum of operated railroad.

3. Three per centum of the gross earnings of all railroads except those operated on pile and pontoon or pontoon bridges, whose gross earnings equal or exceed two thousand dollars and are less than two thousand five hundred dollars per mile per annum of operated railroad.

4. Five dollars per mile of all operated railroads, except those operated on pile or pontoon bridges, whose gross earnings equal one thousand five hundred dollars per mile per annum, and are less than two thousand dollars per mile per annum of operated road, and in addition, two and one-half per centum of their gross earnings in excess of one thousand five hundred dollars per mile per annum and under two thousand dollars per mile per annum.

5. Five dollars per mile of operated road by all companies whose gross earnings are less than fifteen hundred dollars per mile per annum.

6. Two per centum of the gross earnings of all railroads which are operated on pile and pontoon or pontoon bridges, which gross earnings shall be returned as to such parts thereof as are within the state.

One half of all the license fee shall be paid at the time the license so issues and one half on or before the 10th day of August in each year.”

The question for the commissioner to determine is, What are gross earnings? And it is upon this question that this department and the railway companies cannot always agree.

Among the items of gross receipts over which we have disagreed are gross amount received or charged for switching, gross amount received or charged for car mileage, gross amount received for rentals of tracks, yards and terminals, gross amount of interest or dividends received for stocks and bonds owned, gross amount of interest on deposits, gross amount of interest and exchange received from loans and discounts, gross receipts of elevators owned, gross receipts of store houses.

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*General Report.*

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We have insisted that the above items of gross receipts should be reported as taxable property. The railway companies generally object and insist that they pay out more than they receive for car mileage and switching. Hence there are no receipts from these sources. They claim that rentals received for tracks, yards and terminals is double taxation as the company renting pay on the gross earnings, that the earnings of the money in the other items is not derived from operation of the railway.

I mention these matters in order that in case the present system of gross earnings tax is continued the legislature might define what gross earnings of railways are taxable and remove this uncertainty.

In the early days of railroad building, taxation was little thought of, and in many western states charter exemptions from taxation was granted, from which much litigation resulted. The state of Illinois was wise in granting a charter to the Illinois Central Railway Company by including a provision in the charter that in lieu of the many benefits granted the company pay to the state each year seven per cent. of its gross earnings within the state.

This rare and noticeable instance of forethought in statesmanship secured a permanent income to the state, increasing with the growing prosperity of the road.

In Missouri, and many other states, railway property, as other corporate and individual property, is assumed to be assessed at its "cash value;" that is, at what the assessors say is the cash value, the attempt being made to adapt the general property tax to railway property.

In other states, like Michigan, Minnesota and our state, the tax is levied upon gross earnings, although recently the constitution of Michigan has been amended so as to authorize a tax upon value as other property is taxed.

The tax upon gross earnings, while easily ascertained, and thus free from the difficulty encountered in ascertaining the value, is open to economic objection that it discriminates against

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*General Report.*

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the companies which have heavy operating expenses with small profits, and in favor of those who have smaller earnings with a larger per cent. of profit, and is also open to the practical objection that it is difficult to adjust the rate of tax upon the earnings so as to produce a seemingly equality of taxation as compared with the property tax upon other property.

On the other hand, where the tax is upon value, that is, upon the state's share of the entire value, as above explained, there are obvious difficulties in determining that value. The supreme court of the United States has sustained the rule of valuation of adding the value of the funded debt to the cash value of the shares, saying that this fixes the value by the action of those who can best estimate it.

In some states this is applied by taking the market value of the funded debt if at par or below and adding thereto the market value of the shares. There is difficulty, however, arising from the fluctuating market value of the shares.

In most of the states enforcing the tax upon value, there is no fixed standard, but the assessment is left to the judgment of the assessors, and their finding, as a rule, is not reviewable by the courts.

Assessment of the roadbed by county assessors has been found impracticable, and the system has been very generally established in the different states of assessing the entire roadbed in a state by a state board, who apportion the same to the different counties and cities along the line; the local property, however, not directly connected with the roadbed being assessed by the local assessor.

This apportionment of the value of the entire roadbed in a state to the different counties and cities according to mileage, is open to the objection that it discriminates against the cities where valuable terminals are located, as that value is distributed through all the counties along the line.

This assessment by state boards secures uniformity of valuation, as between the counties along the line of the road, as to

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*General Report.*


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the roadbed and rolling stock, but it is found practically impossible to secure uniformity with other classes of property.

It is notorious that property is not assessed at its cash value anywhere, except when the assessor succeeds in reaching money or securities in the hands of the trustee or administrators. This practice of under-valuation is so common that in some states it is recognized by statute, and in the state of Illinois the practice of assessing one-fifth the cash value is adopted.

In the state of Missouri a careful investigation recently disclosed that railways are assessed at about 37 per cent. of the full market value of their securities on the basis of their mileage in the state, while the average assessment of farm property was considerably less, about 33 per cent., in some counties being as low as 20 per cent.

This inequality in taxation, resulting from unequal assessments, is often invoked as a ground for judicial interference.

It is clear that inequality in taxation is produced as certainly by inequality in assessment as by inequality in the rate of the tax.

In view of the difficulties, both in the taxation upon value and upon gross earnings, it would seem the most just and fair method of taxation is upon the net earnings upon the mileage basis. Under such form of taxation the railway company would pay according to its ability from its income after paying operating expenses; that is, the income available for dividends, interest, or surplus. There should in addition to the net earnings tax be imposed a mileage tax to cover logging railways and other small roads not connected with the interstate railways.

The steam railroad tax paid to the state the past five years has been:

1895 .....	\$1,175,752 52
1896 .....	1,172,793 62
1897 .....	1,265,094 54
1898 .....	1,360,493 92
1899 .....	1,549,434 87



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*General Report.*

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## BRIDGE RECORDS.

The department has prepared a new blank for bridge records of all railways in this state, and require of all to fill out and return same to this office.

It embraces the following information: Number of bridge, mile post, name of crossing, description of bridge, number of spans, length of spans, total length, size of stringers, number of stringers, size of ties, size of caps, when built, superstructure, substructure, kind of masonry, kind of piles, height of highest bent ground to top of cap, average length of piles in ground, number of piles in bent, method of bracing frame: bridges, etc., etc. This information gives the full history of all bridges.

## DEPOTS.

The railroad depots in Wisconsin, it is fair to say, on the whole, are of a better character and better equipped for the accommodation of the traveling public than in some of the western states, they being in the main in good repair, sufficiently lighted and heated, provided with necessary conveniences, telegraph offices, etc.; and it may be said that the several agents in charge keep their waiting rooms, as a rule, cleanly and comfortable.

Among some of the modern and up-to-date depots on the lines of the C. & N. W. Ry., special mention might be made of the new depot recently opened at Beloit. This is a fine structure provided with all modern conveniences, spacious waiting rooms, electric light, steam heat, etc., and under the efficient management of Agent Edgar A. Howell. Beloit is to be congratulated upon so creditable an acquisition. At nearly all other points on this line, excellent facilities for the traveling public are maintained, among which particular attention might be called to Milwaukee, Green Bay, La Crosse, Janesville, etc.

However, the rule is not infallible, and the inspection disclosed some depots along the lines referred to which are not pro-

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*General Report.*

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vided with conveniences which might reasonably be expected by its patrons. In some instances storage room for the handling of freight is wholly inadequate, and agents at those depots are unable to care for goods and commodities properly. At some depots agents are compelled to store perishable freight, such as some of the dairy products, in the waiting rooms to protect it from the inclemency of the weather for several hours, and sometimes much longer. In such cases, where the waiting rooms are small, and the number of cheese boxes somewhat numerous, the traveling community who are waiting for trains sometimes seriously complain, particularly if the day is cold, and the stove in the waiting room small. A case for illustration, which would appear to be fairly in point, is at St. Cloud, on the Sheboygan & Western line,—and similar instances on file in this office.

At Baraboo, on the main line of the Chicago & Northwestern Railway, a better depot is urgently demanded by citizens and patrons, and the inspection disclosed the fact that their demand was not without merit.

In some instances depots are not in keeping with the patronage which they receive. One case may be cited at Racine. At this prosperous city the C. & N. W. Ry. do an enormous business; in fact the business done with the railroads at Racine is among the best done at any station in Wisconsin, while its depot facilities are not of the best. However, the commissioner was informed by those in authority that better things in the way of passenger depots are in store for the citizens of Racine in the very near future.

At Spooner, on the Chicago, St. Paul, Minneapolis & Omaha Ry., patrons are clamoring for better depot facilities. On the line of the Chicago, Milwaukee & St. Paul, at Mineral Point, the accommodations will stand improvement; while at Marinette, on the line of the above road, the depot appears to be inadequate, and patrons are much in earnest in asking that the old depot be replaced by a more modern and commodious one. The

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*General Report.*

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Chicago, Milwaukee & St. Paul Ry. have some most excellent depots in Wisconsin, and many more are contemplated, the commissioner is informed.

Among the up-to-date depots along the lines of this Company, special mention might be made of the one at Oconto, also of the magnificent depot at Beloit, and at various other points.

Along the lines of the Wisconsin Central Railway the depots are of more recent construction, as compared with some of the older roads in our state, and many first class depots may be found, and many of the older ones are to be rebuilt.

On other railroads in Wisconsin the depots, on the whole, are in keeping with the surroundings, and in several instances where this does not obtain, the several railway companies are making the necessary improvements, as fast as the circumstances will permit.

#### COMPLAINTS.

With reference to complaints a new system has been inaugurated during the past two years in this office by designating the several complaints as formal and informal.

Informal complaints, as we term them, are those which on their face do not seem to constitute a wilful violation of law on the part of the railway company.

Formal complaints are those which upon their face seem to charge wilful violation of the law.

In the former case the commissioner assumes the role of an arbitrator, an adjusting officer, or a peace medium, between the complaining parties and the railroad companies, with a view to bringing about an amicable adjustment of differences.

In the second or formal complaints, the parties making complaint are required to make and file a verified complaint upon the receipt of which a summons or notice is issued to the offending corporation, and a time and place set for the hearing of evidence in the case. The complaint in these formal investiga-

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*General Report.*

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tions must set forth the particular section of the statute under which the relief is sought, and a definite and specific account of the things or matters complained of as unlawful, on the part of the corporation.

During the year 1900 there have been less complaints filed than during 1899. In this connection it has been thought best to briefly recite a few of the complaints, formal and informal, lodged during the years 1899 and 1900, together with the final disposition of the same by the commissioner.

In addition to the complaints herewith recited, there are many others which have been disposed of, and several now being investigated.

## SYNOPSIS OF COMPLAINTS.

January 23, 1899, M. W. Gillet, of Fond du Lac, Wisconsin, made complaint informally to this department of failures of connection at Burnett Junction on the morning passenger trains of the Chicago & Northwestern and Chicago, Milwaukee & St. Paul Ry. Cos. This case was taken up with Gen. Mgr. W. G. Collins on the C. M. & St. P. and Mr. Sanborn, general superintendent of the C. & N. W., and under date of Feb. 10, 1899, this department was advised by Mr. Collins that a new time table had been arranged and that the difficulty complained of had been entirely overcome.

February 16, 1899, Kinney Mercantile Company of Colfax, Wis., made informal complaint to this department, charging the Wisconsin Central Ry. Co. with demanding prepayment of all freight charges on all hay and straw shipped from Colfax, Wis., by the Kinney Mercantile Company.\* This case was taken up at some length by correspondence with the Wisconsin Central Ry. Co., and the following results obtained: Under date of February 15 this department was advised by H. F. Whitcomb, general manager of the Wisconsin Central Ry. Co., that the mat-

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\*Complete record of the case on file in this office.

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*General Report.*

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ter in difference between the Wisconsin Central Ry. Co. and the Kinney Mercantile Company of Colfax, Wisconsin, has been satisfactorily adjusted to all parties concerned and that a regular course of business was again being pursued.

Complete record of the case now on file in this office.

March 5, 1899, J. W. Short, chairman town board of Levis, Clark county, Wisconsin, made informal complaint to this department relative to opening of high way crossing in the town of Levis on the C., St. M. & O. Ry., asking as to how to proceed in making necessary arrangements. Opinion was furnished him according to statutes of Wisconsin which appears to have cleared up the trouble, as nothing further has ever been heard of the case.

Complete record of this case now on file in this office.

March 13, 1899, Hickerson Roller Mill Company, by its manager, C. A. Greene, of Grantsburg, Wis., complained informally to this department, charging the St. Paul & Duluth Ry. Co. with not maintaining side tracks to their flouring mills. After careful investigations in the premises this department advised Mr. Greene that under the circumstances the aforesaid railway could not be compelled to maintain sidetracks at the Hickerson Roller Mills, citing the law in such cases made and provided.

Complete record of this case now on file in this office.

March 14, 1899, Charles Larson of Poskin, Wisconsin, made informal complaint to this department, charging the Minneapolis, St. Paul & Sault Ste Marie Ry. Co. with having killed stock on his premises on the 13th day of February. This case was taken up by correspondence with the officials of the "Soo" line and progress made looking toward an adjustment. However, Mr. Larson subsequently moved away from Poskin, and the case was never definitely settled.

Complete record of this case is on file in this office.

March 25, 1899, Henry C. Folz of Madison, Wisconsin, made informal complaint to this department of a loss sustained by him

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*General Report.*

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on the Chicago, Milwaukee & St. Paul Ry. Co. of a box of dressed game, which he alleged was allowed to spoil while in transit from Avoca, Wisconsin, to Madison. This case was taken up with the Chicago, Milwaukee & St. Paul Ry. Co. by correspondence and under date of August 3, 1899, Mr. Folz advised this office that the claim was settled and he received his money for the entire amount.

Complete record of this case is on file in this office.

April 1, 1899, Messrs. G. H. & J. P. Shaffman, of Kilbourn City, Wisconsin, made in formal complaint to this department charging excess in freight rates on car load of stock from Rochelle, Ill., to Kilbourn City, Wisconsin, claiming \$60.61 overcharge. This being an interstate case, this department had no jurisdiction in the premises. However, took the matter up in an advisory way with the Chicago & Northwestern Ry. Co. and the Chicago, Milwaukee & St. Paul Ry. Co. with the following results:

“Chicago, April 14, 1899.

Hon. G. L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir:—Referring to your favor of April 6 to Mr. Hughitt, Jr., which has been referred to me, relative to claim of Norman E. Van Dyke (Messrs. Shaffman's attorney) have to say: We have ordered voucher and same will be paid in a short time.

Yours Truly,

G. H. KNAPP, A. G. F. Agt.”

May 16, 1899, the people of Pineville, Wis., made informal complaint to this department asking for more spur tracks for the loading of commodities. Complaint did not charge any violation of the statute, there being no law in this state covering the question in controversy.

Complete record of this case now on file in this office.

June 20, 1899, Blanch Craven, Madison, Wisconsin, made complaint to this department, charging the Illinois Central Ry. Co. with violation of the laws of the state of Wisconsin, Section 1816a, Wisconsin statutes of 1898, by unlawfully and negligently allowing a fire set by a section foreman of the said rail-

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*General Report.*

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road on the right of way of its railway near the E.  $\frac{1}{2}$  of the N. E.  $\frac{1}{4}$ , section 32, town of Madison, Wisconsin, escape from said right of way, and that said fire burned about 12 rods of fence, six cords of wood and damaged live timber on complainant's land, E.  $\frac{1}{2}$  of the N. E.  $\frac{1}{4}$ , section 32, town of Madison, all to the amount of \$100 damage to the complainant. Copy of the complaint was duly served on the Illinois Central Ry. Co., and notice of investigation, time and place given; at which time the case was investigated, witnesses sworn, the hearing being adjourned from time to time. July 23, 1899, upon the conclusion of the investigation, the commissioner decided that the charges set forth in the complaint were well founded, whereupon notice was duly served on the Illinois Central Ry. Co. of the findings of the commissioner. The Railroad Company failed to reimburse the complainant within the time specified by law. The findings in the investigation were certified to the attorney general, according to law.

Complete record of this case on file in this office.

July 8, 1899, C. H. Meissner, chairman of the Street committee of Birnamwood, Wisconsin, made formal complaint to this department, charging the Chicago & Northwestern Railway Company with unlawfully obstructing the water course in the village of Birnamwood in the county of Shawano, Wisconsin, thereby causing water to overflow the streets and public highways of the village aforesaid, to-wit: Railroad Ave., Wausau St., Elm St., Mill St., and the public highway next north of the original plat of the village of Birnamwood, all lying and being situate within the corporate limits of said village of Birnamwood, and thereby causing great damage. Duly certified copy of the complaint was served on the Chicago & Northwestern Railway Company and time and place fixed for a hearing, at which time adjournment was asked for by the Hon. J. T. Fish, attorney for Chicago & Northwestern Ry. Co. at Milwaukee, and adjournment granted. The case was adjourned to August 3, 1899,

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*General Report.*

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and under date of July 28 this department received the following communication from Hon. B. A. Cady, president of the village board of Birnamwood, which explains itself.

“Birnamwood, Wis., July 28, 1899.

G. L. Rice, Railroad Commissioner, Madison, Wisconsin.

Dear Sir:—In the case of C. H. Meissner vs. C. & N. W. Ry. Co. hearing adjourned to August 3 at this place, I have the pleasure to inform you that an agreement has been made between the parties thereto by which the C. & N. W. Ry. Co. have agreed to immediately open the water courses through their track thus removing all cause for complaint. I therefore request that you will discontinue said hearing and notify Hon. John T. Fish of Milwaukee, of your action.

The people of this place are much pleased over this peaceful solution of the matter, which they attribute solely to your prompt and efficient action.

Very truly yours,

B. A. CADY, Village President.”

Complete record of this case now on file in this office.

July 21, 1899, A. Huegin, business manager of the Milwaukee Sentinel, made informal complaint to this department of misconnections between the Chicago, Milwaukee & St. Paul and Chicago, St. Paul, Minneapolis & Ohio Ry. Companies at Camp Douglas, Wisconsin. Reference is made to train No. 57 of the Chicago, Milwaukee & St. Paul and No. 9 of the Chicago, St. Paul, Minneapolis & Ohio Ry. Company. This case was taken up and a voluminous correspondence ensued. Upon investigation it was found that most of the failures of connections at the point above referred to was a matter which was very difficult to overcome from the fact that both trains were fast mail trains and were making the best time possible, and the slightest delay caused misconnection at the meeting point, Camp Douglas, which in many instances was by a very few minutes. However, this department was advised by both railway companies that special effort would be made in the future to make these connections promptly, which advice was transmitted to Mr. Huegin, which elicited the following reply:



*General Report.*

"Milwaukee, Wis., Aug. 1, 1899.

HON. GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir—I have your favor of July 31, 1899, and note with pleasure that you have taken the matter of the misconnections at Camp Douglas up with the managements of both roads. Have ascertained that these connections failed eight times out of ten in the first ten days of July. I also note that you have their promise to try and do better in the future. We will endeavor to keep you posted as to the future results.

A. HUEGIN."

Complete records of this case on file in this office.

August 23, 1899, the freight bureau of the Chamber of Commerce of the city of Milwaukee, thought its manager, Mr. Geo. A. Schroeder, entered a formal complaint against the Chicago, Milwaukee & St. Paul and Chicago & Northwestern Ry. Companies, charging discrimination and an unreasonable rate for the transportation of grain from several cities in Wisconsin to the city of Milwaukee, and prayed that an investigation might be held by the railroad commissioner for the purpose of determining the condition in the premises. Notice was duly served on the above named railroad companies, setting the time and place of hearing, namely, the city of Milwaukee, the 6th day of September, 1899. At the time of the hearing, both railroad companies were represented by counsel, as was also the Chamber of Commerce of Milwaukee. Much testimony was taken, witness worn, and the case adjourned from time to time and finally determined on the 12th day of October, 1899, which resulted in the following orders being issued by the railroad commissioner, under date of October 25, 1899:

STATE OF WISCONSIN,  
*Office of Railroad Commissioner,*  
Madison, October 25, 1899.

To the Chicago, Milwaukee & St. Paul Railway Company Corporation and the Chicago & Northwestern Railway Company Corporation:

August 23, 1899, the freight bureau of the Chamber of Commerce of the city of Milwaukee, Wisconsin, filed, with the railroad commissioner of Wisconsin, a duly certified complaint in writing, charging the Chicago, Milwaukee & St. Paul Railway Company and the Chicago & Northwestern Railway Company with demanding and receiving an unreasonable price

*General Report.*

for the transportation of grain to Milwaukee from several and various stations in the state of Wisconsin, as compared with the rates in Iowa and Illinois. Copy of said complaint was duly served on said railway companies citing time and place of investigation, viz.: the city of Milwaukee on the 6th day of September, 1899, at which time and place evidence was heard from complainant and respondent. Said investigation was continued time to time and finally closed on the 12th day of October 1899. After hearing the evidence and the able arguments of counsel, the commissioner did then and there determine that the complaint was not without merit, and did then and there so decide.

Now, therefore, the railroad commissioner of the state of Wisconsin does hereby order and direct that you, the said Chicago, Milwaukee & St. Paul Railway Company, corporation, and Chicago & Northwestern Railway Company, corporation, do promulgate a tariff for the transportation of grain from the following stations on the lines of the Chicago, Milwaukee & St. Paul Railway, and the Chicago & Northwestern Railway, in the state of Wisconsin, to the city of Milwaukee, at the following rates in cents per hundred pounds:

## REDUCE PRESENT TARIFF RATES AS FOLLOWS, VIZ.:

*Chicago, Milwaukee & St. Paul Railway Co.*

Stoughton.....	To Milwaukee	from 10	to 9.5
McFarland.....	To Milwaukee	from 11	to 10
Cross Plains.....	To Milwaukee	from 11.5	to 11
Black Earth.....	To Milwaukee	from 12	to 11
Mazomania.....	To Milwaukee	from 12.5	to 11
Sauk City.....	To Milwaukee	from 12.5	to 11
Prairie du Sac.....	To Milwaukee	from 12.5	to 11
Arena.....	To Milwaukee	from 12.5	to 11
Spring Green.....	To Milwaukee	from 12.5	to 11
Lone Rock.....	To Milwaukee	from 12.5	to 11
Gotham.....	To Milwaukee	from 12.5	to 11
Twin Bluffs.....	To Milwaukee	from 12.5	to 11
Richland Center.....	To Milwaukee	from 12.5	to 11
Avoca.....	To Milwaukee	from 12.5	to 11
Muscoda.....	To Milwaukee	from 12.5	to 11
Blue River.....	To Milwaukee	from 12.5	to 11
Boscobel.....	To Milwaukee	from 12.5	to 11
Woodman.....	To Milwaukee	from 12.5	to 11.5
Wauzeka.....	To Milwaukee	from 12.5	to 12
Calamine.....	To Milwaukee	from 11.5	to 10.5
Mineral Point.....	To Milwaukee	from 12.5	to 11
Celmont.....	To Milwaukee	from 12.5	to 11
Platteville.....	To Milwaukee	from 12.5	to 11
Oconomowoc.....	To Milwaukee	from 6	to 5
Ixonia.....	To Milwaukee	from 7	to 6.5
Richwood.....	To Milwaukee	from 8	to 7
Fall River.....	To Milwaukee	from 11	to 9.5
Doylestown.....	To Milwaukee	from 11.3	to 10
Rio.....	To Milwaukee	from 11.5	to 10

*General Report.*

Wycena .....	To Milwaukee	from 11.7	to 10
Portage City .....	To Milwaukee	from 12.3	to 11
Lewiston .....	To Milwaukee	from 12.5	to 11
Kilbourn City .....	To Milwaukee	from 12.5	to 11
Lyndon .....	To Milwaukee	from 12.5	to 11
Mauston .....	To Milwaukee	from 12.5	to 11
New Lisbon .....	To Milwaukee	from 12.5	to 11
Orange .....	To Milwaukee	from 12.5	to 11
Camp Douglas .....	To Milwaukee	from 12.3	to 11
Oakdale .....	To Milwaukee	from 12.5	to 11
Tomah .....	To Milwaukee	from 12.5	to 11
Tunnel City .....	To Milwaukee	from 12.5	to 11
LaFayette .....	To Milwaukee	from 12.5	to 11
Sparta .....	To Milwaukee	from 12.5	to 11
Leon .....	To Milwaukee	from 12.5	to 11
Melvine .....	To Milwaukee	from 12.5	to 11
Cashton .....	To Milwaukee	from 12.5	to 11.5
Rockland .....	To Milwaukee	from 12.5	to 11.5
Bangor .....	To Milwaukee	from 12.5	to 12
Waterloo .....	To Milwaukee	from 9	to 8.5
Marshall .....	To Milwaukee	from 10	to 9
Deanville .....	To Milwaukee	from 10	to 9
Sun Prairie .....	To Milwaukee	from 10.5	to 9.5
Burke .....	To Milwaukee	from 10.5	to 10
DeForest .....	To Milwaukee	from 12	to 11
Morrisonville .....	To Milwaukee	from 12	to 11
Arlington .....	To Milwaukee	from 12	to 11
Poynette .....	To Milwaukee	from 12	to 11
Hartman .....	To Milwaukee	from 12.3	to 11
Valley Jc .....	To Milwaukee	from 12.5	to 11
Norway .....	To Milwaukee	from 12.5	to 11
Mather .....	To Milwaukee	from 12.5	to 11
Meadow Valley .....	To Milwaukee	from 12.5	to 11
Daly .....	To Milwaukee	from 12.5	to 11
Babcock .....	To Milwaukee	from 12.5	to 11
Necedah .....	To Milwaukee	from 12.5	to 11
Dexterville .....	To Milwaukee	from 12.5	to 11
Veedum .....	To Milwaukee	from 12.5	to 11
Amelia .....	To Milwaukee	from 12.5	to 11
Newton .....	To Milwaukee	from 12.5	to 11
Hogan's Spur .....	To Milwaukee	from 12.5	to 11
Lindsey .....	To Milwaukee	from 12.5	to 11
Barker's Spur .....	To Milwaukee	from 12.5	to 11
Boynnton .....	To Milwaukee	from 12.5	to 11
Lynn .....	To Milwaukee	from 12.5	to 11
Romandka .....	To Milwaukee	from 12.5	to 11
Pittsville .....	To Milwaukee	from 12.5	to 11
Hansen .....	To Milwaukee	from 12.5	to 11
Vesper .....	To Milwaukee	from 12.5	to 11
Arpin .....	To Milwaukee	from 12.5	to 11
Cranmoor .....	To Milwaukee	from 12.5	to 11
Port Edwards .....	To Milwaukee	from 12.6	to 11
Nekoosa .....	To Milwaukee	from 12.5	to 11
Centralia, Grand Rapids .....	To Milwaukee	from 12.5	to 11
Rudolph .....	To Milwaukee	from 12.5	to 11
Junction City .....	To Milwaukee	from 12.5	to 11
Eau Peline .....	To Milwaukee	from 12.5	to 11
Dancy .....	To Milwaukee	from 12.5	to 11

*General Report.*

Knowlton .....	To Milwaukee	from 12.5	to 11
Mosinee .....	To Milwaukee	from 12.5	to 11
Flanners .....	To Milwaukee	from 12.5	to 11
Schofield .....	To Milwaukee	from 12.5	to 11
Wausau .....	To Milwaukee	from 12.5	to 11
Heights .....	To Milwaukee	from 12.5	to 11
Trap City .....	To Milwaukee	from 12.5	to 11
Pine River .....	To Milwaukee	from 15.5	to 11
Merrill .....	To Milwaukee	from 12.5	to 11
Combs .....	To Milwaukee	from 15	to 12
Irma .....	To Milwaukee	from 15	to 12
Gilbert .....	To Milwaukee	from 15	to 13
Tomahawk .....	To Milwaukee	from 15	to 13
Heafford Jc .....	To Milwaukee	from 15	to 13
Cassian .....	To Milwaukee	from 15	to 13
Braxton .....	To Milwaukee	from 15	to 13
Bearskin .....	To Milwaukee	from 15	to 13
Harshaw .....	To Milwaukee	from 15	to 13
Goodhow .....	To Milwaukee	from 15	to 13
Hazelhurst .....	To Milwaukee	from 15	to 13
Hixon .....	To Milwaukee	from 15	to 13
Minocqua .....	To Milwaukee	from 15	to 13
Velasco .....	To Milwaukee	from 15	to 13
Arbor Vitae .....	To Milwaukee	from 15	to 13
Glenbrook .....	To Milwaukee	from 15	to 13
Plum Lake .....	To Milwaukee	from 15	to 13
Star Lake .....	To Milwaukee	from 15	to 13
Rolling Prairie .....	To Milwaukee	from 8	to 7.5
Beaver Dam .....	To Milwaukee	from 9	to 8
Fox Lake .....	To Milwaukee	from 9	to 8
Randolf .....	To Milwaukee	from 10	to 8.5
Cambria .....	To Milwaukee	from 11	to 9
Pardeeville .....	To Milwaukee	from 12	to 10
Knowles .....	To Milwaukee	from 7.5	to 7

*Chicago and Northwestern Railway.*

Clyman .....	To Milwaukee	from 8	to 7.5
Juneau .....	To Milwaukee	from 8	to 7.5
Minnesota Junction .....	To Milwaukee	from 8	to 7.5
Burnett Junction .....	To Milwaukee	from 8	to 7.5
Wales .....	To Milwaukee	from 5	to 4.5
Dousman .....	To Milwaukee	from 5.5	to 5.5
Helensville .....	To Milwaukee	from 7	to 6.5
Jefferson Junction .....	To Milwaukee	from 8	to 7
London .....	To Milwaukee	from 9	to 8.5
Deerfield .....	To Milwaukee	from 10	to 9
Cottage Grove .....	To Milwaukee	from 10.5	to 9.5
Brooklyn .....	To Milwaukee	from 10.5	to 10
Oregon .....	To Milwaukee	from 11	to 10
Syene .....	To Milwaukee	from 11	to 10
Dane .....	To Milwaukee	from 12	to 11
Lodi .....	To Milwaukee	from 12	to 11
Okee .....	To Milwaukee	from 12.5	to 11
Merrimac .....	To Milwaukee	from 12.5	to 11
Kirkland .....	To Milwaukee	from 12.5	to 11
Devil's Lake .....	To Milwaukee	from 12.5	to 11
Baraboo .....	To Milwaukee	from 12.5	to 11

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*General Report.*


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Kirkwood.....	To Milwaukee	from 12.5	to 11
North Freedom.....	To Milwaukee	from 12.5	to 11
Ablesmans.....	To Milwaukee	from 12.5	to 11
Reedsburg.....	To Milwaukee	from 12.5	to 11
La Valle.....	To Milwaukee	from 12.5	to 11
Crossman's.....	To Milwaukee	from 12.5	to 11
Wonewoc.....	To Milwaukee	from 12.5	to 11
Union Center.....	To Milwaukee	from 12.5	to 11
Elroy.....	To Milwaukee	from 12.5	to 11
Glendale.....	To Milwaukee	from 12.5	to 11
Kendall.....	To Milwaukee	from 12.5	to 11
Wilton.....	To Milwaukee	from 12.5	to 11
Norwalk.....	To Milwaukee	from 12.5	to 11
Summit.....	To Milwaukee	from 12.5	to 11
Siding No. 4.....	To Milwaukee	from 12.5	to 11
Sparta.....	To Milwaukee	from 12.5	to 11
Rockland.....	To Milwaukee	from 12.5	to 11.5
Bangor.....	To Milwaukee	from 12.5	to 12
Klevenville.....	To Milwaukee	from 11.5	to 11
Mount Horeb.....	To Milwaukee	from 12	to 11
Blue Mounds.....	To Milwaukee	from 12.5	to 11
Barneveld.....	To Milwaukee	from 12.5	to 11
Ridgeway.....	To Milwaukee	from 12.5	to 11
Dodgeville.....	To Milwaukee	from 12.5	to 11
Edmund.....	To Milwaukee	from 12.5	to 11
Cobb.....	To Milwaukee	from 12.5	to 11
Montfort Jc.....	To Milwaukee	from 12.5	to 11
Montfort.....	To Milwaukee	from 12.5	to 11
Preston.....	To Milwaukee	from 12.5	to 11
Laneaster Jc.....	To Milwaukee	from 12.5	to 11
Sitzer.....	To Milwaukee	from 12.5	to 11
Liberty.....	To Milwaukee	from 12.5	to 11
Lancaster.....	To Milwaukee	from 12.5	to 11
Fennimore.....	To Milwaukee	from 12.5	to 11
Werley.....	To Milwaukee	from 12.5	to 11
Anderson's Mills.....	To Milwaukee	from 12.5	to 11
Woodman.....	To Milwaukee	from 12.5	to 11
Livingston.....	To Milwaukee	from 12.5	to 11
Rewey.....	To Milwaukee	from 12.5	to 11
Leslie.....	To Milwaukee	from 12.5	to 11
Mineral Pt. Crossing.....	To Milwaukee	from 12.5	to 11
Ipswich.....	To Milwaukee	from 12.5	to 11
Platteville.....	To Milwaukee	from 12.5	to 11
Elmo.....	To Milwaukee	from 12.5	to 11
St. Rose.....	To Milwaukee	from 12.5	to 11
Cuba City.....	To Milwaukee	from 12.5	to 11
Benton.....	To Milwaukee	from 12.5	to 11
Strawbridge.....	To Milwaukee	from 12.5	to 11
Buncombe.....	To Milwaukee	from 12.5	to 11

It is further ordered: that the above rates on grain as fixed by this order be in force and effect on and after the 15th day of November, 1899.

GRAHAM L. RICE,  
Railroad Commissioner.

The above orders were complied with by the several railway companies and the new rates put in force and effect November

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*General Report.*

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15, 1899, which elicited the following letter from Mr. Geo. A. Schroeder, complainant:

“CHAMBER OF COMMERCE,  
*Freight Bureau,*  
Milwaukee, Wis., Nov. 20th, 1899.

Geo. A. Schroeder, Manager.

Hon. GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.:

Dear Sir:—On August 23rd, 1899, a complaint was filed with you by the Milwaukee Chamber of Commerce, through its Freight Bureau, charging the Chicago, Milwaukee & St. Paul and Chicago & Northwestern Railways with demanding and receiving unreasonable rates for the transportation of grain to Milwaukee from several and various stations in the state of Wisconsin.

After various hearings and a thorough investigation by you of the complaint that was made, you issued an order on November 1st, directing that the C., M. & St. P. and C. & N. W. Rys. promulgate tariffs on grain to Milwaukee from nearly two hundred stations in Wisconsin, reducing the rates from one-half to three cents per hundred pounds, and directing that such lower rates be put into effect on November 15th, 1899.

It gives me great pleasure to say that the order issued by you was promptly complied with by the railway companies and the lower basis of rates was published and put into effect on November 10th.

Considering the fact that the grain rates of Wisconsin have, for many years past, been unreasonably high, and that this is the first time in the history of the State that a Railroad Commissioner has ordered a general reduction of such rates for the benefit of the grain producers of Wisconsin, and secured a prompt compliance of his order, you are entitled to a great deal of credit for the results that will be obtained from your action.

In my estimation, a saving of from two to three hundred thousand dollars per year will accrue to the grain producers of Wisconsin in marketing their shipments at the reduced rates of transportation.

I heartily congratulate you upon your success in this matter.

Very respectfully yours,  
GEO. A. SCHROEDER.”

September 11, 1899, Theo. Cook, city clerk of the city of Prescott, made informal complaint against the Chicago, Burlington & Quincy Ry. Co., charging improper lighting at the railway crossing at Kinnicknic street in the city of Prescott, and alleging danger to the traveling public in consequence of said failure to light. This case was thoroughly investigated and the premises viewed, and the matter taken up with C. E. Perkins, president Chicago, Burlington & Quincy Ry. Company at Bur-

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*General Report.*

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lington, Ia. After an exhaustive correspondence an arc light was ordered in by the Railway Company at the Kinnicknic street crossing and this department advised as follows, under date of Jan. 12, 1900.

“Hon. G. L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir: — It is with considerable satisfaction that I can herewith inform you of putting in of arc light by the Burlington. The light is up and will be turned on to-morrow night.

By request of several of the aldermen of this city, I desire to thank you again for your efforts, etc. I am Yours truly,

THEO. COOK,  
City Clerk.

Complete record of this case on file in this office.

September 26, 1899, Larson Brothers of Beldenville, Wis., made informal complaint against the Chicago, St. Paul, Minneapolis & Omaha Railway Co., alleging failure on the part of the railway company to furnish necessary cars for the shipment of lumber and wood. The urgency of the case seemed to demand immediate action, and the case was taken up by telegraphy with the Chicago, St. Paul, Minneapolis & Omaha Railway Co. officials, followed by correspondence which resulted in the railroad company furnishing Larson Brothers with the necessary cars for the shipment of their commodities.

Complete record of this case on file in this office.

October 2, 1899, Berg & Johnson of River Falls, Wisconsin, made complaint that the Chicago, St. Paul, Minneapolis & Omaha Ry. Co. failed to furnish them sufficient cars to meet their demands in the shipment of produce. The matter was taken up with Vice President Jas. T. Clark of the Chicago, St. Paul, Minneapolis & Omaha Railway Company, and the necessary relief obtained.

Complete record of this case now on file in this office.

October 12, 1899, J. L. Linderman & Co., of Osseo, Wisconsin, made complaint to this department, charging the Chicago, St. Paul, Minneapolis & Omaha with failure to furnish sufficient number of cars to carry on the business of their shipments. This case was taken up by this department, with Mr. Jas. T.

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*General Report.*

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Clark, vice president of the Chicago, St. Paul, Minneapolis & Omaha Railway Company, which brought the following reply:

“St. Paul, Minn  
Hon. GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir: — Absence from the office for a few days will explain delay in replying to your letter of the 13th. In reference to the complaint of J. L. Linderman & Co. of Osseo: I think Mr. Linderman's complaint over-drawn, as I find he has had five cars to load for Manitowoc in the last two weeks and that four more cars have been furnished him to-day, which fully fills his order.

Respectfully,  
JAS. T. CLARK.

A complete record of this case on file in this office.

October 19, 1899, C. C. DeLong & Co., of Edgar, Wisconsin, informally complained to this department of the failure of the Chicago & Northwestern Railway Company to furnish them with a sufficient number of cars for the transportation of their commodities. Messrs. DeLong & Co. were advised of the state law relative to the furnishing of cars to shippers by railroad companies, and the matter taken up with H. R. McCullough, 3rd vice president of the Chicago & Northwestern Ry. Company at Chicago. Under date of October 30, Mr. McCullough advised this department as follows:

“We have had this matter up with our operating department, and they will see that this firm gets its fair proportion. They have been furnished with three cars lately. It is our understanding that this firm made no shipments during September, not for the reason that cars were not furnished, but on account of their not being able to get men to load the cars.

“As you know, this road, in common with all other roads, are hard pressed just now and have been for some time past, to furnish equipment enough to take care of all the freight in sight, and it has been impossible for us to satisfy the demands of everybody although we have tried to be impartial to one and all.”

Complete record of this case on file in this office.

October 30, 1899, C. F. Ottman, of Joel, Wisconsin, petitioned this department that a station be built at that place. After investigation of the situation, was obliged to decide that the business at Joel on the line of the Minneapolis, St. Paul & Sault Ste Marie railway did not warrant the expense of main-



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*General Report.*


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taining a station, and as the requisite number of inhabitants, as provided by statute, was not at Joel, no action could be taken further than advisory with the railway company.

Complete record of this case on file in this office.

October 30, 1899, the Webster Mfg. Company of Superior, informally complained that the Northern Pacific Railway Company blockaded 58th St. crossing in the city of Superior by freight cars for an unreasonable length of time on several and various occasions. This case was taken up with C. S. Mellen, president of the Northern Pacific Railway Company with the following result:

“Duluth, Minn., Dec. 2nd, 1899.

Subject: Blocking 58th St. Crossing.

Mr. M. C. KIMBERLY, General Superintendent, St. Paul, Minn.

Dear Sir:—Returning herewith correspondence relative to complaint of Railroad Commissioner Rice, of Wisconsin, relative to our train blocking 58th street crossing in South Superior, on October 30, 1899.

I have suspended Conductor F. Brewer for this offense and given him to understand that a repetition will be met with dismissal. Have also issued bulletin to employes notifying them of the action taken.

This street crossing is located in our yard at South Superior and trainmen have been cautioned by bulletin to avoid blocking the crossing; but I presume in some instances they expect to move promptly but for some reason are unavoidably delayed for a few moments, and which cannot be foreseen. However, there is no excuse for blocking crossing for any such length of time as claimed in this complaint.

Yours truly,

E. C. BLANCHARD,  
Superintendent.”

Complete record of this case on file in this office.

November 17, 1899, Hon. E. I. Kidd of Madison, Wisconsin, complained to this department of the failure of the Mileage Bureau Department to reimburse him for a ten dollar rebate check on mileage which was lost in transit, unless indemnity bond was furnished by Mr. Kidd, with 50c revenue stamp attached.

This matter was taken up with Marvin Hughitt, president of the Chicago & Northwestern Railway Company, that being the company of which Mr. Kidd purchased the mileage book, which brought forth the following results:

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*General Report.*


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Chicago, December 8, 1889.

Mr. GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir.—Your favor of November 20th to President Hughitt regarding Hon. E. I. Kidd was referred to this department. We promptly investigated the matter and now take pleasure in advising that arrangements have been made to forward to Mr. Kidd a duplicate check for \$10 in lieu of one stated to have been lost.

Trusting this action will be entirely satisfactory, I remain

Yours truly,

W. B. KNISKERN,

Complete record of this case now on file in this department.

December 7, 1899, E. W. Allen, of Eau Claire, Wisconsin, made informal complaint to this department, charging the Wisconsin Central Railway Company with damaging a piano while in transit over the said line of the Wisconsin Central railway, and with the failure on the part of the Wisconsin Central Railway Company to adjust his claim. This matter was thoroughly gone into by this department with H. F. Whitcomb, president of the Wisconsin Central Railway Company at Milwaukee, with the following results:

“Milwaukee, Dec. 16, 1899.

HON. GRAHAM L. RICE, R. R. Commissioner, Madison, Wis.

Dear Sir.—Replying to yours of the 15th inst. I beg to say that the claim in question has been adjusted. I learn that the most of the delay, aside from that necessary for investigation, has been in waiting advice from the claimant as to where the piano could be repaired.

Yours truly,

H. F. WHITCOMB,  
President.”

E. W. ALLEN'S CASE CONTINUED.

Correspondence in this case was transmitted to Mr. Allen at Eau Claire, which brought forth the following reply:

“Eau Claire, Dec. 21, 1899.

GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir:—Your letter received. The case has been adjusted to my satisfaction. Thanking you for your attention and efforts in this matter, I remain

Yours truly,

E. W. ALLEN.”

Complete record of this case now on file in this office.

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*General Report.*


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“Mazomanie, Wis., Dec. 26, 1899.

GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir:—I am shipping rye straw to Chicago and the railroad company charges me 12c per hundred. Have they a right to charge me so much or not?

Yours truly,  
JERRY SCHLOUGH.”

To which the following letter was addressed to Mr. Schlough:

Madison, Wis., Dec. 29, 1899.

JERRY SCHLOUGH, Esq., Mazomanie, Wis.

Dear Sir:—I have your favor of Dec. 26, 1899, relative to alleged unreasonable charges made by the C. M. & St. P. Ry. Co. for the transportation of straw from Mazomanie, Wis., to Chicago, Ill. Replying I have to say this is purely an inter-state case, being from Wisconsin to Illinois, a condition over which this department has no control whatever, as my jurisdiction is for Wisconsin and for Wisconsin only. I would suggest that you lay your case before the Inter-state Commerce Commission, at Washington, D. C., that body having power in inter-state cases. Regretting that I am unable to offer you any assistance, I am

Very respectfully yours,

GRAHAM L. RICE, Railroad Commissioner.”

January 8, 1900, L. L. Burnett of Duck Creek, Wisconsin, made informal complaint against the Chicago & Northwestern Railway Company, alleging insufficient depot facilities at that place. The matter was taken up by this department with Gen. Mgr. W. A. Gardner. On February 3rd, Mr. L. L. Burnett died, and negotiations were carried on with the father of the deceased, Mr. M. M. Burnett, and with Marvin Hughitt, president, and Mr. Gardner, general manager of the Chicago & Northwestern Railway Company, which resulted finally, on the 24th of April, by the railway company deciding to erect a suitable building at Duck Creek for depot purposes.

Complete record of this case now on file in this office.

February 19, 1900, Mr. Jacob Knoll of Theresa, Wisconsin, informally complained against the Wisconsin Central Railway Company, charging discrimination in rates on grain, alleging that special rates were being given by that company to the Northern Grain Company to Manitowoc. This matter was exhaustively gone into by this department with Mr. H. F. Whitcomb, president of the Wisconsin Central Railway Company,

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*General Report.*

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which resulted in the old rate of 8½¢ per hundred pounds on grain to Manitowoc being re-established, and the rate to Milwaukee unchanged. Under date of April 10th a communication was addressed to Mr. Jacob Knoll at Theresa, Wisconsin, from this department as follows:

"The Wisconsin Central R'y Co. have re-established the old rate of 8½¢ per hundred pounds on grain from Theresa to Manitowoc. The rate to Milwaukee is unchanged. This arrangement, I understand, would be perfectly satisfactory to you. The Company promises to furnish you with cars and to deliver the same to Milwaukee promptly.

Yours truly,

GRAHAM L. RICE,  
Railroad Commissioner."

Complete record of this case on file in this office.

March 8, 1900, Wm. Harker and 50 others at Preston, Wisconsin, filed a petition with this department, asking for a depot and an agent in charge thereof at Preston, Wisconsin. This matter was taken up with the Chicago & Northwestern Railway Company officials which elicited, among other correspondence, the following:

Chicago, September 5, 1900.

Subject:—Depot at Preston, Wisconsin.

Sir:—Your favor of the 26th ultimo, to Vice President McCullough, in his absence has been referred to me. Presume you are aware that we did have a depot and platform at this point. To be sure the depot is not a large one, but it is in every way commodious enough for the business transacted at that point. We have had a careful investigation made as to the tonnage to and from there, in the last six months, and during that time there has been forty car loads of freight shipped from that point and twenty car loads shipped in there, making a total of sixty cars in six months, or ten cars per month. The passenger travel is also small and it hardly looks reasonable to ask us to establish an agent at an expense of five or six hundred a year, to transact this business. The Northwestern Road, however, has no desire to be otherwise than accommodating and agreeable to all its patrons and if the people there think it would be a good idea to have the depot open and we can employ a man for ten dollars per month to take care of it, without making him a regular agent, being obliged to put in telegraph office, etc., we shall not decline. Will be pleased to hear from you further, at your convenience.

Very truly,  
W. A. GARDNER.

Mr. GRAHAM L. RICE, Railroad Commissioner, Madison, Wis."

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*General Report.*

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Preston, Wis., being a village not containing the necessary 200 inhabitants, as required by statute in this state, the railway company are not in duty bound to maintain a depot, and as the arrangements as regarding price could not be arranged, a depot is not yet maintained at Preston, Wis., such as petitioners desire.

Complete record of this case on file in this office.

June 29, 1900, Mr. E. R. Cram, of Sugar Bush, Wisconsin, entered complaint regarding better depot facilities at that place on the Chicago & Northwestern Railway Company, accompanied by a petition signed by residents of that village, which is as follows:

“Sugar Bush, Wis, June 29, 1900.

To the Railroad Commissioner, Madison, Wis.

We, the undersigned patrons of the Chicago & Northwestern Railway Company respectfully call your attention to the following:

1. That in October, 1898, the above company built a depot and established an agency for the transaction of freight and ticket business at Sugar Bush, Wis.
2. That the business of this station is such as would justify the above company in maintaining an agency here.
3. That on June, 6, 1900, the station was closed, the records moved away and the windows nailed up.
4. That such action works a hardship on those who have to patronize the road especially on those who ship freight as there is no protection for freight in small lots left on the platform and no way to order cars for car-load shipments.
5. That while for the past year the passenger tickets sold at this station have averaged nearly \$70 a month, no shelter is now provided for passengers waiting for trains, and that the above \$70 is mostly made of tickets sold or short distances showing a large number of people who are now discommoded.

Now, therefore, we ask you that you take such action as lies in your power to have the agency re-established at once.

E. R. CRAM,  
And about thirty others.”

This case was taken up immediately by this department and the premises viewed, and correspondence opened with H. R. McCullough, 3rd vice president of the Chicago & Northwestern Railway Company. After full investigation in the premises

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*General Report.*

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it was found, as in many other instances in this state, that the village of Sugar Bush did not contain inhabitants sufficient, as provided by law, to compel the railway company to maintain a depot. However, the following letter from Mr. C. H. Hartly, addressed to Mr. S. F. Miller, general agent at Oshkosh, under date of July 6, 1900, seems to have provided the necessary relief.

"Kaukauna, Wis., July 6, 1900.

MR. S. F. MILLER, General agent, Oshkosh, Wis.

Dear Sir:—Your letter of the 5th inst. in regard to an agent being appointed at Sugar Bush.

Your understanding is exactly right. We did not put in an agent at that point because the business justified it, simply for the use of the block signal which can be done away with during periods when business is light. We are, however, figuring on putting Mr. H. W. Kiehoefer in charge as Commission agent. He will sell tickets and will undoubtedly take care of matters in general in very good shape.

Yours truly,  
C. H. HARTLEY,  
Superintendent."

"Central Lumber Company, Manufacturers, Hudson, Wisconsin.  
Railroad Commissioner, Madison, Wis.:

Dear Sir:—As the above letter head will indicate we are engaged in the manufacturing of lumber at this point.

Up to the present we have been enabled to secure sufficient logs to supply our mill by floating them on the St. Croix River, and its tributaries. However, the logs tributary to the river are getting quite scarce and we are now looking about for timber that is tributary to the railroad, so that we may log the same and ship that by rail to our mill here.

As you are doubtless aware, there is a large number of mills in the State of Wisconsin that secure their log supply by rail. We have made several attempts to secure a rate on logs from points on the Northern Division of the C., St. P., M. & O. Ry. to our mill here, but have always met with an absolute refusal to grant us said rate.

It occurs to us that this is a discrimination against us, in as much as the Railroad Company is granting a log rate to New Richmond, Wis., which is located a short distance above us and the logs which they haul in to New Richmond are located practically in the same territory where we expect to cut the timber, providing a favorable rate on the logs can be secured.

Kindly advise whether it is in your power to grant us relief in the case cited.

Thanking you in advance for any consideration that you may grant our appeal, we are,

Yours very truly,

Central Lbr. Co.,

H. P. SVENDSEN."

8-9, 1900.

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*General Report.*


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To which the following reply was made:

“Madison, August 13, 1900.

H. P. SVENDSEN, Pres. Central Lbr. Co. Hudson, Wis.

Dear Sir:— Your letter of the 9th inst. at hand, wherein you state, among other things, that your company has made several attempts to secure a rate on logs from points on the Northern Division of the C., St. P., M. & O. Ry. to your mill at Hudson, but have always met with an absolute refusal on the part of the Railway Company, to grant a reasonable rate; that the Omaha is granting a reasonable log rate to New Richmond on the same Division, etc.

In reply will say that your statement seems to constitute a violation of law on the part of the C., St. P., M. & O. Ry. Co.

I enclose blank form of complaint which if you feel so disposed you may sign, verify and return, when an investigation of the matter will be ordered by this office. The custom is to issue a notice to the railway company after the complaint is executed and returned to this office, setting a time and place where the investigation will be held. Should you conclude to make the complaint, I would like to have you suggest some place in Hudson where the investigation could be held. It could be held at your attorney's office in Hudson or at any place that is convenient and suitable for such purposes.

The form sent is only suggestive of what I concluded from your letter are the facts.

If you have an attorney it might be well to have him draw up the complaint, although this is not necessary, as you can fill out the blank yourself.

Very respectfully,

GRAHAM L. RICE,  
Railroad Commissioner.”

Enclosure.

“Hudson, Wis., August 25, 1900.

HON. GRAHAM L. RICE, Madison, Wis.

Dear Sir:— We thank you for your favor of the 13th inst. At the present time we are negotiating to divert the timber on the Northern Division of the C., St. P., M. & O. Ry. in another direction, and if successful we will not ask for a rate to haul the logs to our mill here.

We are under obligations to you for giving the matter your prompt attention.

Yours very truly,

CENTRAL LBR. CO.,  
Per H. P. Svendsen.”

October 1, 1900, Rev. S. S. Benedict, of Portage, Wisconsin, filed an informal complaint with this department, as follows:

“Portage, Wis., Oct. 1, 1900.

To the Railroad Commissioner, Madison, Wis.

Dear Sir.—I hereby complain against the Chicago, St. Paul, Minneapolis & Omaha Ry. and the Chicago, Milwaukee & St. Paul Ry. for unjust

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*General Report.*

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and exorbitant rates on household goods, and ask for a suitable rebate as a matter of justice.

On Sept. 22nd, ult. I shipped my household effects from Augusta, Wis., to Portage City, Wis., distance 121 miles, on which I paid freight at the rate of 65c. per cwt., while the freight rate from Augusta to Chicago is only 60c. per cwt.; distance 291 miles, both lying in the same direction from Augusta, Wis. As the "Omaha" so called, does not run either to Chicago or Portage City, a transfer in either case must be made to a connecting line; no difference in that respect. Hence I paid more for 121 miles haul than is charged for 291 miles. Can you right this?

Respectfully,

S. S. BENEDICT."

This case was taken up by correspondence with W. A. Scott, general manager of the Chicago, St. Paul, Minneapolis & Omaha Railway, and Mr. A. C. Bird, of the Chicago, Milwaukee & St. Paul Railway Company, and after a very voluminous correspondence in getting the matter properly adjusted, this department is in receipt of the following letter, which explains itself:

"Portage, Wis., Nov. 21, 1900.

HON. GRAHAM L. RICE, Railroad Commissioner, Madison, Wis.

Dear Sir.—I received today a letter of regret from Col. A. C. Bird, of the Chicago, Milwaukee & St. Paul Railway; and thereupon called upon the agent here and received from him \$15.70 rebate on household goods from Augusta to Portage.

I regret that a misunderstanding should have caused so much delay and trouble in this matter.

Accept my sincere thanks and kindness in my behalf, and believe me,

Very truly yours,

S. S. BENEDICT."

#### RECOMMENDATIONS.

Recommendations have been made under the different subjects touched upon in this report. The commissioner's opinion of needed changes in the law relative to taxation, rates, warehouses, crossing, logging railways, etc., will be found under the several headings.

I would further recommend that this department be reorgan-



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*General Report.*


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ized and the clerical force increased so as to be constituted as follows:

Commissioner, salary .....	\$5,000 00
Deputy Commissioner .....	3,000 00
1 Consulting Engineer, salary .....	1,800 00
1 Actuary, salary .....	1,500 00
1 Statistician, salary .....	1,200 00
1 Chief Clerk, salary .....	1,200 00
1 Clerk, salary .....	900 00
1 Stenographer, salary .....	720 00
1 Messenger .....	720 00

There has been no change in the number of the clerical force in this department since 1883. The law in effect then, and still in force, restricts the clerical force to the deputy railroad commissioner.

A stenographer, one-half time in this office and one-half time in the office of the superintendent of public property, was added four years ago.

In 1883 the railway mileage of this state amounted to 3,475.73; and the license or tax paid was \$586,328.58. In 1900 we had upwards of 7,000 miles of operated railway in the state, and the tax amounted to \$1,549,434.87.

Thus has the railway mileage increased and the revenue to the state expanded while the department has stood still. Not only that, but the duties of the commissioner have been greatly increased from time to time.

I reiterate the recommendations on my predecessor, Hon. D. J. McKenzie, that this department be authorized to compile and publish the railroad laws of the state and have the records relating to railroads in the secretary of state's office transcribed for the use of this department, and provide for the filing of duplicate copies in this department of all papers pertaining to railroad incorporation.

Respectfully submitted,

GRAHAM L. RICE,

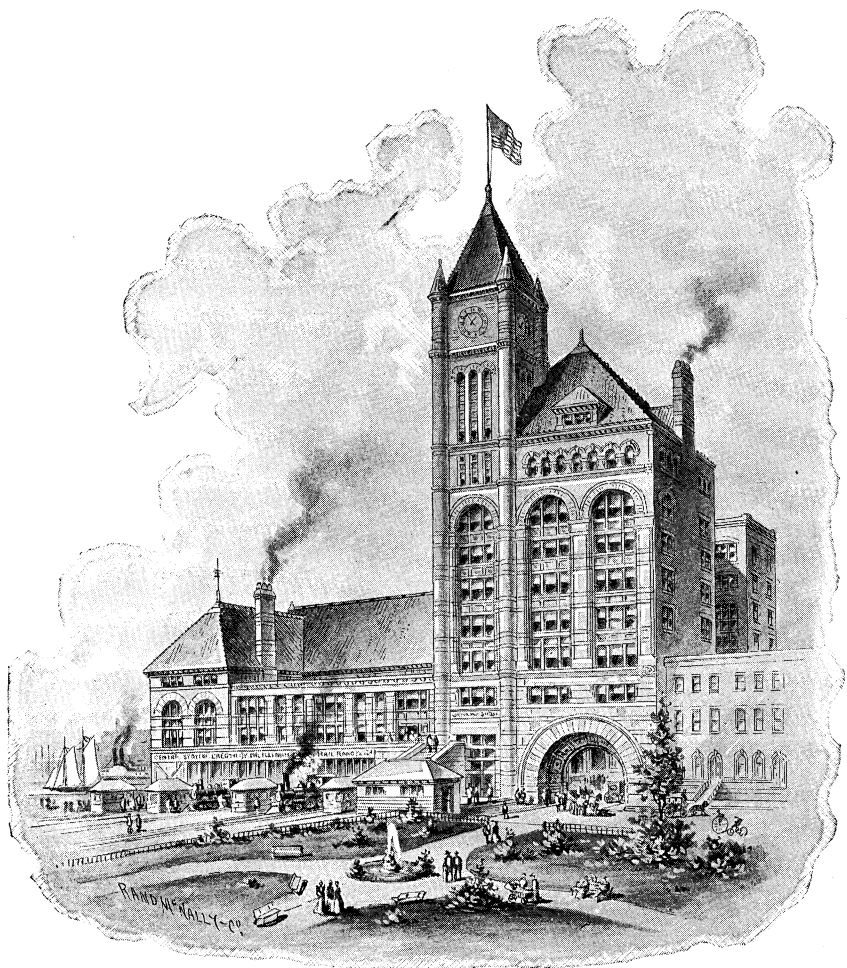
*Railroad Commissioner.*

Attest:

JAMES S. STACK,

*Deputy.*





WISCONSIN CENTRAL RAILWAY.—DEPOT, CHICAGO.

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PART II.

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STATISTICAL TABLES.

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## Statistical Tables.

To the Hon. James O. Davidson, State Treasurer: Herewith find statement showing indebtedness, total mileage of railroads, within the state of Wisconsin, all as reported 1898, and being according to the provisions of section 1795, Revised Statutes of Wisconsin.

Name of Company.	Total cost of railroad in Wisconsin, Dec. 31, 1898.	Total gross receipts of railroad in Wisconsin, 1898.	Total net earnings of railroad in Wisconsin, 1898.	Interest bearing indebtedness of railroad in Wisconsin Dec. 31, 1898.
1 Abbotsford & Northeastern...	\$232,000 00	\$17,390 20	\$3,086 76	\$112,000 00
2 Ahnapee & Western .....	479,744 83	31,382 15	.....	340,000 00
3 Ash Siskiwit, Iron R. L. Ry. Co	.....	125,226 79	125,226 76	50,000 00
4 Big Falls Ry. Co. ....	.....	7,538 91	957 10	7,715 49
5 Bay Harbor & G. Western (operated by Bayfield Transfer)	.....	.....	.....	.....
6 Bayfield Ry. (Transfer) .....	3,410,568 24	2,481 86	130 55	1,587,756 78
7 Chicago, Milwaukee & St. P. ..	58,103,540 44	11,407,056 28	4,883,218 67	16,251,010 00
8 Chicago & Northwestern .....	56,303,773 12	11,212,310 45	3,380,154 51	42,021,224 98
9 Chi., St. Paul, Minn. & Omaha	24,633,542 76	3,471,306 87	699,754 75	10,782,335 22
10 Chica. Burlington & Northern	11,090,905 70	1,243,168 84	492,527 86	6,323,000 00
11 Chi. Lake Shore & Eastern * ..	178,286 38	60,790 50	21,831 53	130,000 00
12 Chicago & Lake Superior .....	57,853 29	2,682 68	.....	42,436 08
13 C., Mad'on & North. (Ill. Cent.)	3,205,199 35	95,848 73	.....	2,712,060 40
14 C., Wis. & Minn. (Wis. C. Line)	.....	.....	.....	.....
15 Chippewa River & Menomomie	265,672 07	18,864 85	871 69	.....
16 Drummond & South Western ..	169,426 81	23,984 45	3,894 72	50,000 00
17 Duluth, S. Shore & Atlantic ..	.....	178,348 03	.....	3,716,000 00
18 Duluth Short Line .....	92,837 57	14,259 53	1,480 39	49,285 75
19 Duluth, Superior & Western ..	.....	23,546 24	.....	.....
20 Dunbar & Wausaukee .....	71,033 02	23,400 94	.....	.....
21 Eastern Ry. Co. of Minnesota ..	.....	487,012 40	122,838 02	.....
22 Fairchild & North Eastern .....	199,374 54	25,298 29	12,370 50	.....
23 Green Bay & Western .....	10,100,000 00	442,758 48	42,377 46	7,600,000 00
24 Hazelhurst & South Eastern ..	102,170 89	21,737 55	7,921 71	.....
25 Iola & Northern .....	37,855 71	5,531 43	1,296 30	.....
26 Glen'wd & N'th's'n (spur W.C.)	394,546 18	205 00	.....	408,000 00
27 Kewaunee, G. Bay & Western ..	1,072,350 00	68,944 17	10,455 15	975,000 00
28 Kickapoo Valley & Northern ..	290,726 42	34,754 78	.....	155,000 00
29 L. Sup. Ter. & Transfer Ry. Co.	294,240 53	6,878 43	.....	.....
30 Matton Ry. Co. ....	70,608 10	8,012 56	.....	.....
31 Mil. & L. Win'eb'go (W. C. L.)	.....	.....	.....	.....
32 Milwaukee & Superior .....	319,680 18	34,465 18	11,739 67	223,058 64
33 Marshfield & South Eastern ..	85,000 00	26,403 93	15,845 04	450,000 00
34 Marinette, Tomahawk & West.	148,508 10	18,993 31	699 03	.....
35 Mil. & Wauwatosa (motor) .....	.....	5,263 12	.....	.....
36 Minnesota & Wisconsin .....	250,000 00	23,475 13	2,275 13	195,000 00
37 Minn., St. Paul & Ashland .....	50,000 00	10,472 89	.....	320,000 00
38 Minn., St. P., & Sault Ste. Marie	13,074,678 63	1,348,885 44	636,392 77	7,387,393 91
39 Northern Pacific .....	.....	350,044 27	169,384 60	.....
40 Northwestern Coal Ry. Co. ....	379,387 60	33,866 75	5,345 28	944,000 00
41 Oshkosh Transportation Co. ....	70,000 00	8,076 25	5,508 21	.....
42 Packwaukee & Mon. (W.C.L.) ..	.....	.....	.....	.....
43 R. Lake, Dallas & Menomomie ..	120,000 00	12,889 25	.....	.....
44 St. Cloud, Grantsburg & Ash.	81,256 86	7,196 39	.....	.....
45 Washburn, Bay. & Iron River ..	500,000 00	34,481 28	39 10	237,000 00
46 West Range .....	.....	.....	.....	.....
47 Winona Bridge Ry. Co. ....	241,000 00	10,367 63	758 81	202,125 00
48 Wisconsin & Michigan .....	981,432 00	73,598 17	8,535 49	615,202 27
49 Whitcomb & Morris .....	9,860 00	2,671 10	302 60	.....
50 Wisconsin Central R. R. Co. ....	21,718,291 57	2,508,646 34	1,016,316 68	5,464,039 01
51 Wisconsin Central Co. ....	12,356,915 03	1,529,815 88	497,420 78	14,968,287 20
52 Duluth, Sup. & W. Ter. Co. ....	765,913 03	55,107 15	25,119 91	500,000 00
Totals .....	\$222,121,779 82	\$35,201,241 56	\$12,223,554 69	\$144,859,140 68

\*Under the head of Cost of Road a number of interstate railroads have reported "unable to apportion by states." These railroads as shown above are not included in footings "cost of road."

Statistical Tables.

cost of each railroad, total gross receipts, total net earnings, the total interest bearing to this department by the companies named below, as of the year ending December 31, 1898.

Interest accrued upon indebtedness of railroad in Wisconsin, 1898.	Amount of interest paid upon such indebtedness in Wisconsin, 1898.	Total miles of railroad in Wisconsin Dec. 31, 1898.	Amount earned per mile, year ending Dec. 31, 1898.	Rate of taxation of each road, year ending Dec. 31, 1898.	Amount of tax or license for the year 1898.	No
\$6,720 00	\$6,720 00	15.16	\$1,147 00	\$5 per mile.....	\$75 80	1
29,400 00		34 00	923 00	5 per mile.....	170 00	2
3,541 01		37.00	3,384 00	4 per cent.....	5,009 0.	3
	439 29	21.00	502 00	\$5 per mile.....	115 00	4
						5
77,326 83		9 86	251 00	\$5 per mile.....	49 30	6
1,896,113 59	1,215,620 46	1650 71	6,912 38	4 per ct. gross earnings.	456,282 25	7
2,363,307 35	2,383,256 89	1625 73	6,896 7r	4 per ct. gross earnings.	448,492 42	8
632,236 33	629,818 29	621.66	5,583 89	4 per ct. gross earnings.	138,852 27	9
362,875 00	362,875 00	230.18	5,400 81	4 per ct. gross earnings.	50,726 75	10
78,000 00	78,000 00	12.55	4,841 00	4 per ct. gross earnings.	2,431 62	11
2,441 00	281 30	3.00	894 00	\$5 per mile.....	15 00	12
135,603 02		91.31	1,104 00	5 per mile.....	456 55	13
						14
		30.50	611 00	5 per mile.....	152 70	15
3,000 00	3,000 00	21.72	1,103 00	5 per mile.....	108 60	16
149,362 62	149,032 62	111.95	1,593 00	5 per mile & 2½ per ct.	820 32	17
2,464 29	2,464 29	1.75	8,149 23	4 per ct. gross earnings.	570 39	18
	20,000 00	12.81	1,838 00	\$5 per mile & 2½ per ct.	941 85	19
		13.50	1,807 00	5 per mile & 2½ per ct.	146 28	20
		22.10	22,038 11	4 per ct. gross earnings.	19,481 70	21
		23 00	1,099 00	\$5 per mile.....	115 60	22
15,000 00	15,000 00	225 00	1,963 00	5 per mile & 2½ per ct.	3,756 46	23
		17.00	1,337 00	5 per mile.....	85 00	24
		4.07	1,176 00	5 per mile.....	23 50	25
						26
20,400 00	24,000 00	36.07	1,878 00	\$5 per mile & 2½ per ct.	520 85	27
52,500 00	22,250 00	51.03	677 00	5 per mile.....	256 50	28
11,700 00	11,700 00	15.70			78 50	29
		21.00	400 00	\$5 per mile.....	105 00	30
			436 00		78 50	31
13,450 62	13,450 62	25.04	1,373 00	\$5 per mile.....	125 20	32
		33.00	1,103 00	5 per mile.....	165 00	33
		14.30	1,334 00	5 per mile.....	71 50	34
		6.00	877 00	5 per mile.....	30 00	35
4,875 00	5,050 00	26.00	902 00	5 per mile.....	130 00	36
16,000 00		23.50	441 00	5 per mile.....	117 50	37
286,110 06	289,749 16	271.42	4,961 62	4 per ct. gross earnings.	53,867 42	38
		102.05	3,785 03	4 per ct. gross earnings.	15,601 77	39
47,027 31	46,450 00	19.61	1,727 00	\$5 per mile & 2½ per ct.	209 35	40
		4.28	1,886 00	5 per mile & 2½ per ct.	62 81	41
						42
		7.52	1,715 00	\$5 per mile & 2½ per ct.	77 84	43
		12.00	599 00	5 per mile.....	60 00	44
*11,850 00		61.00	548 00	5 per mile.....	305 00	45
		7.00		5 per mile.....	33 00	46
10,066 00	5,049 36	54	19,199 31	4 per ct. gross earnings.	414 71	47
27,434 58	8,974 68	40.12	1,909 22	\$5 per mile and 2½ per cent. on \$16,418.17.....	611 05	48
		6.00	445 00	\$5 per mile.....	30 00	49
282,225 45	83,475 00	575.43	4,251 55	4 per cent.....	100,265 85	50
758,452 06	61,853 85	285 53	5,354 30	4 per cent.....	61,192 64	51
20,000 00		6.50	8,478 00	4 per cent.....	2,204 29	52
\$7,310,081 15	\$5,438,540 5 1	6,487.20			\$1,365,493 92	

\* 6 months.

*Earnings.*

Statement to the Railroad Commissioner of the state of Wisconsin of earnings the calendar year ending December 31, 1898.

NAME OF COMPANY.	PASSENGERS.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern.....	\$875 30	\$875 30
2 Ahnapee & Western .....	14,521 41	14,521 41
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....	371 90	371 90
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y.....	1,485 04	1,485 04
7 Chicago, Milwaukee & St. Paul .....	2,149,404 16	6,401,853 21
8 Chicago & Northwestern .....	2,274,094 34	7,912,818 20
9 Chicago, St. Paul, Minneapolis & Omaha.....	761,377 04	12,000,000 00
10 Chicago, Burlington & Northern .....	242,476 21	395,051 10
11 Chicago, Lake Shore & Eastern .....		
12 Chicago & Lake Superior.....	886 10	886 10
13 Chicago, Madison & Northern .....	27,477 27	226,733 79
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonee .....	138 47	138 47
16 Drummond & South Western .....		
17 Duluth, South Shore & Atlantic .....	45,326 61	489,551 53
18 Duluth Short Line .....	756 78	756 78
19 Duluth, Superior & Western .....		50,783 90
20 Dunbar & Wausaukee .....	498 45	498 45
21 Eastern Railway Co. of Minnesota .....	27,072 79	254,347 82
22 Fairchild & North Eastern .....	892 53	892 53
23 Green Bay & Western .....	84,325 68	85,035 35
24 Hazelhurst & South Eastern .....	519 52	519 52
25 Iola & Northern .....	779 97	779 97
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....	15,881 10	15,881 10
28 Kickapoo Valley & Northern .....	6,004 01	6,004 01
29 Lake Superior Terminal & Transfer R'y Co. ....	127 70	127 70
30 Mattoon R'y Co. ....	1,264 00	1,264 00
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....	1,987 83	1,987 83
33 Milwaukee & Superior .....	5,625 92	5,625 92
34 Marshfield & South Eastern .....	2,536 91	2,536 91
35 Marinette, Tomahawk & Western .....		
36 Milwaukee & Wauwatosa .....	1,999 50	1,999 50
37 Minnesota & Wisconsin .....		
38 Minneapolis, St. Paul & Ashland .....	134,290 28	594,942 50
39 Minneapolis, St. Paul & Sault Ste. Marie .....	79,051 59	5,060,041 60
40 Northern Pacific .....		
41 Northwestern Coal R'y Co. ....		
42 Oshkosh Transportation Co. ....		
43 Packwaukee & Montello .....		
44 Rice Lake, Dallas & Menomonee .....	1,305 52	1,305 52
45 St. Cloud, Grantsburg & Ashland .....	2,283 51	2,283 51
46 Washburn, Bayfield & Iron River .....	796 73	796 73
47 West Range .....		
48 Winona Bridge R'y Co. ....	4,750 37	4,750 37
49 Wisconsin & Michigan .....	9,033 71	13,101 50
50 Whitcomb & Morris .....		
51 Wisconsin Central R. R. Co. ....	592,682 61	592,682 61
52 Wisconsin Central Co. ....	306,999 59	540,442 02
53 Duluth, Superior & Western Terminal .....		
Totals .....	6,727,845 65	\$24,593,773 70

\*Earnings whole line, estimated by commissioner.

*Earnings.*

from all sources of the several railway companies of the state of Wisconsin for

FREIGHT.		MAIL, EXPRESS AND TRANSPORTATION AND CAR COMPANIES, AND ALL OTHER SOURCES.		TOTAL.		No
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$15,753 22	\$15,753 22	\$761 68	\$761 68	\$17,390 20	\$17,390 20	1
12,906 90	12,906 90	3,954 54	3,954 54	31,382 85	31,382 85	2
.....	125,226 76	.....	.....	.....	125,226 76	3
7,047 18	7,047 18	119 83	119 83	7,538 91	7,538 91	4
.....	.....	.....	.....	.....	.....	5
957 82	957 82	39 00	39 00	2,481 86	2,481 86	6
8,349 361 49	26,936,812 84	908,287 66	2,751,065 62	11,407,056 23	36,089,731 67	7
8,380 533 96	27,808,135 96	557,632 15	1,776,028 28	11,212,310 45	37,496,930 44	8
2,519,628 17	7,400,000 00	190,301 66	400,000 00	3,471,326 87	10,000,000 00	9
944,438 94	1,561,682 76	56,253 69	99,933 58	1,243,168 84	1,996,668 44	10
6,079 50	6,079 50	.....	.....	6,079 50	6,079 50	11
1,574 16	1,574 16	222 42	222 42	2,682 68	2,682 63	12
56,237 70	894,728 49	12,133 76	168,444 84	95,848 73	1,289,907 12	13
.....	.....	.....	.....	.....	.....	14
15,291 01	15,291 01	.....	.....	15,429 48	15,429 48	15
23,964 45	23,964 45	.....	.....	23,964 45	23,964 45	16
119 540 39	1,209,590 73	13,471 03	122,665 33	178,348 03	1,821,807 59	17
13,405 31	13,405 31	97 44	97 44	14,259 53	14,259 53	18
22,228 47	158,104 20	1,317 77	14,509 35	23,546 24	203,397 45	19
22 902 49	22 902 49	.....	.....	23,400 94	23,400 94	20
430 807 40	2,307,972 12	29,162 21	63,108 69	487,042 40	2,625,428 63	21
24,380 45	24,380 45	2,531	25 31	25,298 29	25,298 29	22
323,640 58	329,865 25	29,792 22	29,949 73	442,758 48	444,850 33	23
21,139 97	21,139 97	78 08	78 06	21,737 55	21,737 55	24
4 513 16	4,513 16	238 30	238 30	5,531 43	5,531 43	25
.....	.....	205 00	205 00	205 00	205 00	26
48,805 53	48,805 53	4,257 50	4,257 50	68,944 13	68,944 13	27
25,769 16	25,769 16	2,970 61	2,980 61	34,753 78	34,753 78	28
5,712 62	5,712 62	1,038 11	1,038 11	6,878 43	6,878 43	29
6,145 82	6,145 82	602 74	602 74	8,012 56	8,012 56	30
.....	.....	.....	.....	.....	.....	31
28,911 18	28,911 18	3,566 15	3,566 15	34,465 16	34,465 16	32
30 152 71	30 152 71	625 30	625 30	36,403 93	36,403 93	33
16,081 40	16,081 40	375 00	375 00	18,993 31	18,993 31	34
.....	.....	.....	.....	.....	.....	35
20 503 61	20 503 61	972 02	972 02	29,475 13	29,475 13	36
10 472 89	10 472 89	.....	.....	10,472 89	10,472 89	37
1,144 273 67	3,373 076 63	67 976 09	299,008 78	1,346,685 44	4,267,037 91	38
284,774 69	18,596 404 75	26 218 09	1,434,564 05	390 044 37	25,091 100 10	39
24,106 75	24 106 75	9,760 00	9 760 00	33,866 75	33,866 75	40
3,076 75	3,076 75	189 54	*189 54	8,266 29	8,266 29	41
.....	.....	.....	.....	.....	.....	42
10 205 56	10 205 56	1,378 17	1,378 17	12,889 25	12,889 25	43
4 143 65	4 143 65	669 48	669 48	7,196 39	7,196 39	44
33 684 57	33 684 55	.....	.....	34,481 28	34,481 28	45
.....	.....	.....	.....	.....	.....	46
7 877 16	15 095 01	.....	.....	10,367 63	19,775 38	47
61 578 77	83 816 35	5 800 98	7,400 75	76,598 18	76,318 63	48
9 671 10	2 671 10	.....	.....	2 671 10	2 671 34	49
1,852 085 50	1,852 925 50	130 978 23	130,978 23	2,506,646 34	2,506,646 34	50
1,140,084 10	1,772,577 42	72 832 19	124 645 42	1,579,815 88	2,447,664 87	51
55,107 15	55,107 15	.....	.....	55,107 15	55,107 15	52
\$26,154,323 96	\$95,066,571 20	\$2,134,264 83	\$7,464,456 85	\$35,016,434 44	\$127,124,801 79	

\*For sale of old material Oshkosh T. Co.



*Expenses.*

Statement to the Railroad Commissioner of the state of Wisconsin of the 31, 1898.

NAME OF COMPANY.	OPERATING EXPENSES.		TAXES.	
	Wisconsin.	Whole line.	Wisconsin.	Whole life.
1 Abbotsford & Northeastern.....	\$7,507 64	\$7,507 64	\$75 80	\$75 80
2 Ahnapee & Western.....	18,223 06	18,223 06	170 00	170 00
3 Ashland Siskiwit.....	82,156 96	82,156 96	817 57	817 57
4 Big Falls R'y Co.....	6,062 52	6,062 52	80 00	80 00
5 Bayfield Harbor & Gt. W'n.....	.....	.....	.....	.....
6 Bayfield Transfer R'y.....	2,612 41	2,612 41	49 30	49 30
7 Chicago, Milwaukee & St. P.....	6,077,310 06	20,956,241 58	446,527 55	1,171,238 81
8 Chicago & Northwestern.....	7,464,915 33	23,311,714 74	367,240 61	1,146,832 59
9 Chicago, St. P., Minn. & O.....	2,632,639 85	16,000,000 00	138,852 27	350,000 00
10 Chicago, Burlington & N'n.....	750,641 48	1,262,926 91	48,706 53	88,867 52
11 C. L. S. & E., opr. M. B. V.....	38,958 97	38,958 97	1,921 30	1,921 30
12 Chicago & Lake Superior.....	3,977 03	3,977 03	15 00	15 00
13 Chicago, Madison & North'n.....	115,997 67	738,639 41	403 39	3,933 27
14 Chicago, Wis. & Minnesota.....	.....	.....	.....	.....
15 Chippewa River & Menom.....	17,820 66	17,820 66	162 50	162 50
16 Drummond & South W'n.....	17,069 73	17,069 73	.....	.....
17 Duluth, South Shore & At.....	124,015 50	1,199,747 07	589 30	41,754 84
18 Duluth Short Line.....	12,208 76	12,208 76	570 38	570 38
19 Duluth, Superior & Western.....	8,252 79	111,373 67	889 14	4,592 86
20 Dunbar & Wausaukee.....	5,776 81	5,776 81	146 27	146 27
21 Eastern R'y Co. of Minn.....	364,204 38	1,223,698 26	20,009 85	76,742 33
22 Fairchild & North Eastern.....	12,927 99	12,927 99	110 00	110 00
23 Green Bay & Western.....	376,224 96	376,224 96	4,211 70	4,211 70
24 Hazelhurst & South Eastern.....	13,704 34	13,704 34	111 50	111 50
25 Iola & Northern.....	4,211 63	4,211 63	23 50	23 50
26 Glenwood & Northeastern.....	.....	.....	.....	.....
27 Kewaunee, Gr'n Bay & W'n.....	37,346 84	37,346 84	634 14	634 14
28 Kickapoo Val. & Northern.....	46,768 21	46,768 21	.....	.....
29 Lake Sup. T. & T. R'y Co.....	50,157 39	50,157 39	78 50	78 50
30 Mattoon R'y Co.....	17,051 77	17,051 77	96 80	96 80
32 Milwaukee & Superior.....	22,480 29	22,480 29	125 20	125 20
33 Marshfield & South Eastern.....	20,558 89	20,558 89	.....	.....
34 Marinette, Tom. & Western.....	18,294 28	18,294 28	.....	.....
35 Milwaukee & Wauwatosa.....	.....	.....	.....	.....
36 Minnesota & Wisconsin.....	15,951 24	15,951 24	130 00	130 00
37 Minneapolis, St. P. & Ash'd.....	12,558 93	12,558 93	.....	.....
38 Minn., St. P. & Sault St. M.....	710,292 67	2,358,706 12	52,932 38	153,887 35
39 Northern Pacific.....	180,094 95	11,013,795 01	15,247 23	797,880 00
40 Northwestern Coal R'y Co.....	28,311 47	28,311 47	210 00	210 00
41 Oshkosh Transportation Co.....	2,480 18	2,480 18	277 90	277 90
42 Packwaukee & Montello.....	.....	.....	.....	.....
43 Rice Lake, Dallas & Menom.....	9,151 93	9,151 93	54 40	54 40
44 St. Cloud, G. & A.....	7,966 26	7,966 26	60 00	60 00
45 Washburn, Bayfield & I. R.....	34,442 18	34,442 18	.....	.....
46 Winona Bridge R'y Co.....	2,086 43	3,979 70	212 86	406 01
47 West Range.....	.....	.....	.....	.....
48 Wisconsin & Michigan.....	47,335 12	84,982 29	2,832 42	2,855 13
49 Whitcomb & Morris.....	2,332 50	2,332 50	30 00	30 00
50 Wisconsin Central R. R. Co.....	1,490,329 66	1,490,329 66	96,562 65	96,562 65
51 Wisconsin Central Co.....	1,032,395 10	1,502,179 11	60,097 08	83,599 53
52 Duluth, Sup. & W. Ter. Co.....	29,987 24	29,987 24	2,261 92	2,261 92
Totals.....	\$21,975,905 44	\$72,233,506 60	\$1,263,626 94	\$4,031,586 57

\*Reported for Wisconsin only, balance estimated.

*Expenses.*

expenses of the several railways of the state for the year ending December

RENTALS AND INTEREST.		DIVIDENDS.		TOTAL.		
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$6,720 00	\$6,720 00			\$14,303 44	\$14,303 44	1
20,400 00	20,400 00			38,793 06	38,793 06	2
	3,504 04					
3,641 04	101 00			86,615 57	86,615 57	3
439 29	439 29			6,581 81	6,581 81	4
						5
77,226 83	77,226 83			79,888 54	79,888 54	6
1,896,113 59	7,022,642 93	1,215,620 46	4,502,298 00	9,635,571 66	33,652,421 32	7
2,427,392 12	7,582,223 96					
6,611 15	20,645 54	1,127,686 49	3,521,581 25	11,394,445 70	35,582,998 08	8
632,236 33	1,300,000 00	626,502 07	1,250,000 00	4,030,290 52	8,900,000 00	9
	675,487 50					
362,875 00	145,492 38	3,964 15	4,386 67	1,166,187 16	2,177,160 98	10
78,000 00						
100,000 00	178,000 00			218,880 27	218,880 27	11
281 00	281 00			4,273 03	4,273 03	12
135,603 02	343,500 00			252,004 08	1,116,072 68	13
						14
				17,983 16	17,983 16	15
3,000 00	3,000 00					
149,062 62	859,580 49			283,455 17	2,125,381 08	17
9,787 75	24,298 72			12,779 14	12,779 14	18
	40,490 35					
22,275 35	29,698 44			31,417 28	186,075 32	19
				5,923 08	5,923 08	20
	235,000 00					
3,541 51	87,583 15		500,000 00	387,655 74	2,223,023 74	21
				13,037 99	13,037 99	22
4,944 36	4,944 36	15,000 00	15,000 00	400,381 02	400,381 02	23
				25,815 84	25,815 84	24
				4,235 13	4,235 13	25
						26
204,000 00						
108 00	20,508 00			58,488 98	58,488 98	27
11,250 00	11,250 00			46,768 21	46,768 21	28
11,700 00	11,700 00			61,935 89	61,935 89	29
				17,051 77	17,051 77	30
						31
13,450 62						
120 00	13,570 62			36,176 11	36,176 11	32
				20,558 89	20,558 89	33
				18,294 28	18,294 28	34
						35
5,050 00	5,050 00			21,200 00	21,200 00	36
68 76	68 76			12,558 93	12,558 93	37
	1,212,330 70					
286,110 06	127,463 01			1,049,335 11	3,852,387 18	38
	6,117,651 56		3,800,000 00	195,442 18	21,729,236 57	39
19,350 00	19,350 00			47,871 47	47,871 47	40
		5,000 00	5,000 00	7,758 08	7,758 08	41
						42
54 00	54 00			9,260 33	9,260 33	43
				8,026 26	8,026 26	44
				34,442 18	34,442 18	45
5,049 36	9,631 22					
104 31	198 96	2,124 41	4,052 13	9,614 87	18,328 02	46
						47
27,434 55	53,167 80					
7,531 57	8,788 30			85,133 66	149,793 59	48
				2,362 50	2,362 50	49
83,725 00						
406,519 71	489,244 71			2,076,137 02	2,076,137 02	50
63,400 40	92,250 00					
278,370 11	713,167 50			1,434,262 69	2,391,196 14	51
20,458 69	20,458 69					
1,550 16	1,550 16			54,258 01	54,258 01	52
\$7,198,566 26	\$27,688,749 93	\$2,995,897 58	\$13,602,318 05	\$33,436,986 24	\$117,586,794 35	

*Disbursements.*

Total amount paid by the several railways in the state of Wisconsin for the of said railways which is in the state of Wisconsin, and also upon the whole of the state of Wisconsin January, 1899:

NAME OF COMPANY.	FOR CONSTRUCTION.		FOR EQUIPMENT.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western .....	\$6,158 23	\$6,158 23	\$7,025 00	\$7,025 00
3 Ashland Siskiwit .....	7,434 70	7,434 70		32,450 00
4 Big Falls R'y Co.....				
5 Bayfield Harbor & Gt. West.				
6 Bafield Transfer R'y.....	88,650 06	88,650 06	716 10	716 10
7 Chicago, Milwaukee & St. P.	45,757 43	169,471 97	517,061 20	1,915,041 48
8 Chicago & Northwestern.....	1,114,087 67	3,479,114 33	176,653 18	551,114 33
9 Chicago, St. P., M. & O.....	71,542 78			
10 Chicago, Burlington & N'n.	366 86	42,114 61	4,908 85	6,630 00
11 Chicago, Lake Shore & East.			3,713 13	3,713 13
12 Chicago & Lake Superior....	3,026 39	3,026 39	27 50	27 50
13 Chicago, Madison & Northern				
14 Chicago, Wisconsin & Minn.				
15 Chippewa Riv. & Menomonie	37 56	37 56	13,290 39	13,290 39
16 Drummond & South West'n.			15,326 90	15,326 90
17 Duluth, South Shore & Atl.		27,290 26		12,762 55
18 Duluth Short Line .....				
19 Duluth, Superior & Western		112,174 67		89,312 13
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn.....		4,677,084 78		224,357 50
22 Fairchild & North Eastern..	33,816 91	33,816 91	3,446 75	3,446 75
23 Green Bay & Western.....				
24 Hazelhurst & South Eastern			31 02	31 02
25 Iola & Northern .....				
26 Glenwood & North-eastern ..				
27 Kewaunee, G'n Bay & West.				
28 Kickapoo Val. & Northern..	26,185 27	26,185 27	3,986 03	3,986 03
29 Lake Sup. T. & T. R'y Co.				
30 Mattoon R'y Co. ....				
31 Milw'kee & Lake Winnebago				
32 Milwaukee & Superior .....	16,350 07	16,350 07		
33 Marshfield & South Eastern				
34 Marinette, Tom. & Western	20,925 08	20,925 08	583 02	583 02
35 Milwaukee & Wauwatosa....				
36 Minnesota & Wisconsin .....	91 70	91 70	1,475 69	1,475 69
37 Minneapolis, St. P. & Ash'd				
38 M., St. P. & Sault St. Marie	68,689 58	659,923 09	126,552 87	534,206 11
39 Northern Pacific .....		1,101,115 82		1,248,354 01
40 Northwestern Coal R'y Co.	27 94	27 94		
41 Oshkosh Transportation Co.	93 97	93 97		
42 Packwaukee & Montello.....				
43 Rice Lake, Dallas & Menom.				
44 St. Cloud, G'tsburg & Ash'd				
45 Washburn, Bayfield & I. Riv.	500,000 00	500,000 00		
46 West Range .....				
47 Winona Bridge R'y Co.....				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co.	29,156 68	29,156 68	599 83	599 83
51 Wisconsin Central Co.....	5,774 58	9,084 79		
52 Duluth, Superior & W. Ter- minal .....	14,992 53	14,992 53		
Totals .....	\$2,053,345 97	\$11,009,425 51	\$875,397 46	\$4,664,448 47

*Disbursements.*

calendar year ending December 31, 1898, which is justly chargeable to that part line, and specified in items as follows, as reported to the Railroad Commissioner

FOR OPERATION.		FOR TAXES.		FOR INTEREST.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin	Whole line.	
\$7,507 64	\$7,507 64	\$75 80	\$75 80	\$6,720 00	\$6,720 00	1
18,223 06	18,223 06	170 00	170 00	20,400 00	20,400 00	2
82,156 96	62,229 49		817 57	3,540 00	3,540 04	3
6,062 52	6,062 52	80 00	80 00	439 29		4
2,612 41	2,612 41	49 30	49 30	77,226 83	77,226 83	5
6,077,310 06	20,956,241 58	446,527 55	1,171,238 81	1,896,113 59	7,022,642 93	6
7,464,915 33	23,311,714 74	367,240 61	1,146,832 59	2,383,256 89	7,442,523 12	7
2,632,699 85	6,000,000 00	138,852 27	350,000 00	629,818 29	1,300,000 00	8
750,641 48	1,262,926 91	48,706 53	88,867 52	362,875 00	675,487 50	9
38,958 97	38,958 97	1,921 30	1,921 30	78,000 00	100,000 00	10
3,977 03	3,977 03	15 00	15 00	281 00	281 00	11
115,997 67	738,639 41	403 39	33,933 27	135,603 02	343,500 00	12
17,820 66	17,820 66	162 50	162 50			13
17,069 73	17,069 73			3,600 00	3,000 00	14
124,015 50	1,199,747 07	589 30	41,754 84	149,062 62	859,581 45	15
12,208 76	12,208 76	576 38	570 38	2,464 29	2,464 29	16
3,252 79	111,373 67	889 14	4,512 86		40,490 85	17
5,776 81	5,776 81	146 27	146 27			18
364,204 38	1,443,698 26	20,009 85	76,742 33		335,000 00	19
12,927 99	12,927 99	110 00	110 00			20
376,224 96	376,224 96	4,211 70	4,211 70			21
13,704 34	13,704 34	111 50	111 50			22
4,211 63	4,211 63	23 50	23 50			23
37,346 84	37,346 84	634 14	634 14	20,400 00		24
46,768 21	46,768 21			11,250 00		25
50,157 39	50,157 39	78 50	78 50	11,700 00		26
16,954 97	16,954 97	96 80	96 80			27
22,480 29	22,480 29	125 20	125 20	13,450 62	13,450 62	28
20,558 89	20,558 89					29
18,294 28	18,294 28					30
12,405 58	12,405 58	130 00	130 00	5,050 00	5,050 00	31
12,558 93	12,558 93					32
710,292 67	2,358,706 12	52,932 38	153,887 35	286,110 06	1,212,390 70	33
180,014 95	11,044,465 01	15,247 29	797,890 00		6,120,961 25	34
28,311 47	28,311 47	210 00	210 00	46,450 00	46,450 00	35
2,386 21	2,386 21	277 90	277 90			36
9,151 93	9,151 93	54 40	54 40			37
7,966 26	7,966 26	60 00	60 00			38
34,442 18	34,442 18					39
2,086 43	3,979 79	212 86	406 01	5,049 36	9,631 22	40
47,335 12	84,982 29	2,832 42	2,855 13	27,434 55	53,167 80	41
2,338 50	2,338 50	30 00	30 00			42
1,490,329 66	1,490,329 66	96,562 65	96,562 65	83,475 00		43
1,032,395 10	1,502,179 11	60,097 08	83,599 53	61,853 85	90,000 00	44
29,987 24	29,987 24	2,261 92	57 64	20,458 69	20,458 69	45
\$21,972,123 26	\$72,233,506 60					46
						47
						48
						49
						50
						51
						52

## Disbursements.

Total amount paid by the several railways in the state of Wisconsin for the of said railways which is in the state of Wisconsin, and also upon the whole of the state of Wisconsin January, 1899:

NAME OF COMPANY.	FOR RENTALS.		FOR DIVIDENDS.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western.....				
3 Ashland Siskiwit.....		\$101 00		
4 Big Falls R'y Co.....				
5 Bayfield Harbor & Gt. West.....				
6 Bayfield Transfer Ry.....				
7 Chicago, Milwaukee & St. P.....				
8 Chicago & Northwestern.....	\$6,611 15	20,645 54	\$1,128,307 72	\$3,523,521 25
9 C., St. P., Minn. & Omaha.....		145,492 38	505,411 88	
10 Chicago, Burlington & N'th.....				
11 Chicago, Lake Shore & East.....	100,000 00			
12 Chicago & Lake Superior.....				
13 Chicago, Madison & North.....				
14 Chicago, Wisconsin & Minn.....				
15 Chippewa Riv. & Menomonie.....				
16 Drummond & South West'n.....				
17 Duluth, So. Shore & Atlan.....	9,787 75	24,298 72		
18 Duluth Short Line.....				
19 Duluth, Sun. & Western.....	22,275 35	29,698 44		
20 Dunbar & Wausaukee.....				500,000 00
21 East. R'y Co. of Minnesota.....	3,541 51	87,583 15		
22 Fairchild & North Eastern.....			15,000 00	
23 Green Bay & Western.....	4,944 36		12,000 00	
24 Hazelhurst & South Eastern.....				
25 Iola & Northern.....				
26 Glenwood & Northeastern.....				
27 Kewaunee, Gr. Bay & West.....	108 00			
28 Kickapoo Val. & Northern.....				
29 Lake Sup. T. & T. R'y Co.....				
30 Mattoon R'y Co.....				
31 Milw'kee & Lake Winnebago.....		120 00		
32 Milwaukee & Superior.....	120 00			
33 Marshfield & South Eastern.....				
34 Marinette, Tom. & Western.....				
35 Milwaukee & Wauwatosa.....		68 76		
36 Minnesota & Wisconsin.....	68 76			
37 Minneapolis, St. P. & Ash'd.....				
38 M., St. P. & Sault St. Marie.....		127,463 01		3,800,000 00
39 Northern Pacific.....				
40 Northwestern Coal R'y Co.....			5,000 00	
41 Oshkosh Transportation Co.....				
42 Packwaukee & Montello.....				
43 Rice Lake, Dallas & Menom.....				
44 St. Cloud, G'tsburg & Ash'd.....				
45 Washburn, Bayfield & I. R.....				
46 West Range.....				
47 Winona Bridge R'y Co.....	104 31	198 96		
48 Wisconsin & Michigan.....	7,531 57	8,788 30		
49 Whitcomb & Morris.....				
50 Wisconsin Central R. R. Co.....	405,519 71			
51 Wisconsin Central Co.....	278,370 11	713,167 50		
52 Duluth, Superior & Western Terminal.....	1,550 16	1,550 16		
Totals.....				

*Disbursements.*

calendar year ending December 31, 1898, which is justly chargeable to that part line, and specified in items as follows, as reported to the Railroad Commissioner

FOR ALL OTHER PURPOSES.		TOTAL AMOUNT, 1898.		NUMBER OF MILES.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line	
		\$14,303 44		15.16	15.16	1
		31,576 29		34.00	34.00	2
\$41,414 18		147,986 98		37.00	37.00	3
		6,581 81		15.00	15.00	4
		169,254 70		9.86	9.86	5
				1,650.71	6,153.83	6
64,684 77	\$202,000 00	12,705,757 32	\$39,678,010 68	1,625.73	5,076 89	7
		3,978,325 07		621.66	1,492.23	8
3,964 15	4,386 67	1,171,462 87	2,225,905 59	230.18	370.77	9
		222,593 40		12.55	12.55	10
	32	7,327 24		3.00	3.00	11
		252,004 08	1,116,072 68	91.31	231.30	12
						13
		31,311 11		30.50	30.50	14
		35,396 63		21.72	21.72	15
		283,455 17	2,165,433 89	111.95	589.24	16
		15,243 43		1.75	17.75	17
		31,417 28	163,212 78	6.07	58.82	18
		5,923 08		13.50	13.50	19
10,119 81	10,119 51		7,134,585 83		139.04	20
622 95	622 95	50,924 60	50,924 60	23.00	23.00	21
		400,381 02		225.00	225.00	22
		25,846 86		17.00	17.00	23
		4,235 13		4.07	4.07	24
						25
		58,488 98		36.07	36.07	26
		88,189 51		51.03	51.03	27
		61,935 89		15.70	15.70	28
		17,051 77		21.00	21.00	29
						30
		52,526 18	52,526 18	25.04	25.04	31
4,926 88		25,485 77		33.00	33.00	32
		39,802 38		14.30	14.30	33
						34
3,403 92	3,403 92	22,625 65	22,625 65	26.00	26.00	35
2,270 79		14,829 72		23.50	23.50	36
		1,244,577 56	5,046,516 38	271.42	1,252.77	37
33,416 63	2,500,735 94			103.05	4,619.54	38
123,653 27		198,733 08	198,733 08	19.61	19.61	39
		7,758 08		4.28	4.28	40
						41
						42
		8,026 26		12.00	12.00	43
		534,442 18		61.00	61.00	44
				7.00	7.00	45
2,161 91	4,112 13	3,614 87	18,328 02	.54	1.03	46
		85,133 66	149,793 52	40.12	72.07	47
		2,707 50		6.00	6.00	48
339 00		2,112,161 58		575.43	575.43	49
6,513 05		1,445,403 65	2,408,089 40	285.53	415.46	50
6,912 92	10,058 47					51
		69,250 54	67,046 26	6.50	6.50	52

## Statistical Tables.

To the Hon. James O. Davidson, State Treasurer: Herewith find statement showing indebtedness, total mileage of railroads, within the state of Wisconsin, as reported to 1899, and being according to the provisions of section 1795, Revised Statutes of Wisconsin.

Name of Company.	Total cost of railroad in Wisconsin, Dec. 31, 1899.	Total gross receipts of railroads in Wisconsin, 1899.	Total net earnings of railroads in Wisconsin, 1899.	Interest bearing indebtedness of railroads in Wisconsin Dec. 31, 1899.
Abbotsford & Northeastern	\$232,000 00	\$15,109 04	\$1,517 82	\$112,000 00
Ahnapee & Western	479,212 74	39,507 08	17,992 17	340,000 00
Ash, Siskiwit & Iron R. Log Ry.	222,000 00			125,226 76
Big Falls R'y Co.	86,000 00	9,628 79	637 61	7,715 49
Bayfield Harbor & Great Western & Bayfield Transfer R'y	3,412,654 12	5,646 04	1,295 13	1,598,357 92
Chicago, Milwaukee & St. Paul	56,769,452 35	12,720,984 62	4,775,957 73	34,986,899 10
Chicago & Northwestern	57,000,126 23	12,817,094 41	4,234,922 92	43,073,593 94
Chicago, St. P., Minn. & Omaha	23,568,902 93	3,807,813 24	913,729 05	10,539,924 38
Chicago, Burlington & Quincy	11,141,591 34	1,314,920 10	555,634 12	4,271,164 48
Chicago, Lake Shore & Eastern	170,000 00	71,371 50	96,513 23	272,790 00
Chicago & Lake Superior	58,352 00	3,641 00		44,935 00
Chicago, Madison & Northern	3,208,486 01	100,224 14	31,300 05	2,712,060 40
Chippewa River & Menomonie	272,129 32	30,530 28	4,811 55	
Drummond & South Western	168,976 81	13,017 49	377 66	50,000 00
Duluth, South Shore & Atlantic	3,300,000 00	266,235 64	67,928 22	3,716,000 00
Duluth, Superior & Western Tr. Co	910,856 17	260,478 77	131,023 69	500,000 00
Dunbar & Wausaukee	71,033 02	26,938 37	21,218 09	None.
Eastern R'y Co. of Minnesota	1,526,000 00	497,725 23	145,345 54	765,900 00
Fairchild & North Eastern	205,190 37	35,576 36	26,898 27	None.
Green Bay & Western	10,100,000 00	479,260 80	39,053 05	Not given.
Hazelhurst & South Eastern	102,100 89	19,842 79	5,825 41	None.
Iola & Northern	37,855 71	5,896 16	261 92	None.
Glenwood & Northeastern		135 00		None.
Kewaunee, Green Bay & Western	1,038,350 00	83,278 25	1,318 28	408,000 00
K. V. & N. (fraction of a year)	305,733 96	33,755 22		1,000,000 00
Lake Superior Ter. & Tr. R'y Co.	294,210 53	11,120 23		195,000 00
Mattoon R'y Co.	70,608 10	9,737 20		None.
Milwaukee & Superior	30,175 36	49,147 81	21,805 41	168,000 00
Marshfield & South Eastern	198,000 00	39,291 01	19,272 79	450,000 00
Mainette, Tomahawk & Western	343,309 43	42,162 26	4,809 93	None.
Minnesota & Wisconsin	443,750 00	31,662 29	13,672 93	243,750 00
Minneapolis, St. Paul & Ashland	805,000 00	25,984 14		320,000 00
Minn., St. P. & Saut Ste. Marie	13,275,285 01	1,442,447 34	813,269 04	7,343,350 98
Northern Pacific	3,080,000 00	430,133 75	218,510 02	3,605,000 00
Northwestern Coal R'y Co.	793,224 20	34,018 18	10,522 95	794,000 00
Oshkosh Transportation Co.	70,000 00	8,719 75	5,384 58	None.
Rice Lake, Dallas & Menomonie	120,000 00	12,259 55	1,414 29	60,000 00
Washburn, Bayfield & Iron River	384,000 00	110,652 21	10,055 93	Rec. cant tell
West Range	35,000 00			None.
Winona Bridge R'y Co.	241,000 00	11,345 27	525 83	202,125 00
Wisconsin & Michigan	981,432 00	87,331 93	13,137 41	58,598 64
Whitcomb & Morris	9,719 40	2,415 07		None.
Wisconsin Central R'y Co., Mil. & S. Winn., Park & Mont., Wisconsin Central Co., Chi., Wis. & Minn.	50,485,906 72	4,528,295 13	1,446,937 86	23,078,860 80
Holmes & Sons R'y Co.	92,746 00	1,009 50		None.
Hawthorn, Nebagamon & Super.	50,250 55	6,964 53	777 41	None.
St. Paul & Duluth	812,147 76	22,853 19	8,349 02	299,597 55
Superior Belt Line & Transfer Co.	77,000 00	5,810 28		None.
Lake Shore & Eastern R'y Co. (J. R. Davis Lbr. Co.)	32,405 38	531 45		None.
<b>Total</b>	<b>\$247,502,364 44</b>	<b>\$39,575,562 20</b>	<b>\$13,703,037 91</b>	<b>\$141,564,850 44</b>

Cost of railroad in Wisconsin estimated by the commissioner in case of A. S. & I. R. R'y, Big Falls, C., L. S. & E., D., S. S. & A., E. R'y Minn., N. P. R'y & Superior B. L. R'y M. & S. E.

Statistical Tables.

cost of each railroad, total gross receipts, total net earnings, the total interest bearing this department by the companies named below, as of the year ending December 31, 1898.

Interest accrued upon indebtedness of railroads in Wisconsin Dec. 31, 1899.	Amount of interest paid upon such indebtedness in Wisconsin Dec. 31, 1899.	Total miles of railroad in Wisconsin Dec. 31, 1899.	Amount earned per mile, year ending Dec. 31, 1899.	Rate of taxation of each road, year ending Dec 31, 1899.	Amount of tax or license for the year 1899.
\$6,720 00	\$3,720 00	15 16	\$996 63	\$5 per mile.....	\$75 80
.....	20,400 00	34	1,014 30	5 per mile.....	170 00
.....	540 08	*37	.....	.....	.....
.....	.....	21	458 51	\$5 per mile.....	105 00
77,601 32	.....	9.83	572 62	5 per mile.....	49 30
1,781,247 58	1,787,798 57	1,650.46	7,707 53	4 per cent.....	508,839 39
2,201,708 06	2,199,823 16	1,625.73	7,883 90	4 per cent.....	512,683 78
616,611 87	619,012 19	619.11	6,150 45	4 per cent.....	152,312 53
255,001 07	251,549 83	222.57	5,907 89	4 per cent.....	52,596 80
14,939 59	14,939 50	17.33	4,119 53	4 per cent.....	2,855 63
2,651 01	491 00	3	1,213 69	\$5 per mile.....	15 00
135,603 02	.....	91.31	1,097 73	5 per mile.....	456 55
.....	.....	.33	925 16	5 per mile.....	165 00
3,000 00	3,000 00	21.72	600 71	5 per mile.....	108 60
153,641 07	153,641 07	110.60	2,407 19	3 per cent.....	7,987 07
20,000 00	20,000 00	6.16	42,285 51	4 per cent.....	10,419 16
.....	.....	13.½	1,995 44	\$5 per mile & 2½ per ct.	234 71
.....	.....	38.15	13,016 48	4 per cent.....	19,909 01
.....	.....	30	1,185 88	\$5 per mile.....	150 00
52,500 00	52,500 00	225	2,130 04	3 per cent.....	14,377 83
.....	.....	17	1,167 22	\$5 per mile.....	85 00
.....	.....	4. 7-10	1,254 50	\$5 per mile.....	23 35
.....	.....	15	9 00	5 per mile.....	75 00
20,400 00	20,400 00	36. 7-10	2,432 64	3 per cent.....	2,498 35
48,749 99	.....	51. 3-10	658 00	\$5 per mile.....	256 50
11,700 00	11,700 00	15. 7-10	708 24	5 per mile.....	78 50
.....	.....	21	478 00	5 per mile.....	105 00
10,083 00	10,083 00	23.16	1,878 81	5 per mile & 2½ per ct.	378 50
27,000 00	.....	33	1,190 63	5 per mile.....	165 00
.....	.....	33.30	1,269 13	5 per mile.....	166 50
9,750 00	.....	21	1,650 88	5 per mile & 2½ per ct.	184 06
16,000 00	.....	35.½	731 94	5 per mile.....	177 50
274,083 87	258,894 55	271.42	5,314 44	4 per cent.....	57,697 90
.....	.....	102.92	4,179 32	4 per cent.....	17,205 35
43,357 27	43,450 00	8	4,203 82	4 per cent.....	1,361 93
.....	.....	4.28	2,017 .2	3 per cent.....	261 60
3,000 00	.....	7.50	1,614 60	\$5 per mile & 2½ per ct.	62 94
.....	.....	64	1,728 94	5 per mile & 2½ per ct.	686 31
.....	.....	7	.....	5 per mile.....	35 00
10,066 00	5,032 99	.54	21,009 76	2 per cent.....	223 91
27,211 39	6,223 76	40.12	2,176 70	3 per cent.....	2,619 96
.....	.....	6	1,402 51	\$5 per mile.....	30 00
.....	.....	.....	.....	.....	.....
478,047 20	10,526 15	874.16	5,180 16	4 per cent.....	181,131 81
.....	.....	27	36 64	\$5 per mile.....	135 00
.....	.....	7.35	947 55	5 per mile.....	36 75
14,882 55	14,882 55	13.75	1,661 33	5 per mile & 2½ per ct.	124 46
.....	.....	10.94	531 10	5 per mile.....	54 70
.....	.....	12	44 27	5 per mile.....	60 00
.....	.....	.....	.....	.....	.....
\$6,295,555 76	\$5,514,614 43	6,592.00	.....	.....	\$1,519,434 87

\* Included by the commissioner—refused to report.



*Earnings.*

Statement to the Railroad Commissioner of Wisconsin of earnings from all calendar year ending December 31, 1899.

NAME OF COMPANY.	PASSENGERS.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern.....	\$1,242 92	\$1,242 92
2 Ahnapee & Western .....	15,383 24	15,383 24
3 Ashland Siskiwiit .....		
4 Big Falls R'y Co. ....	366 15	366 15
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer Co. ....	2,741 50	2,741 50
7 Chicago, Milwaukee & St. Paul .....	2,392,305 80	7,307,984 68
8 Chicago & Northwestern .....	2,545,936 21	8,697,533 56
9 Chicago, St. Paul, Minneapolis & Omaha .....	915,704 39	1,800,000 00
10 Chicago, Burlington & Quincy .....	248,842 30	7,493,531 52
11 Chicago, Lake Shore & Eastern .....		
12 Chicago & Lake Superior .....	1,099 85	1,099 85
13 Chicago, Madison & Northern .....	32,418 76	258,436 18
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonic .....	712 63	712 63
16 Drummond & South Western .....		
17 Duluth, South Shore & Atlantic .....	77,463 70	686,336 76
18 Duluth Short Line .....	3,942 44	60,000 00
19 Duluth, Superior & Western Terminal Co. ....		
20 Dunbar & Wausaukee .....	760 17	760 17
21 Eastern Railway Co. of Minnesota .....	37,927 47	358,812 02
22 Fairchild & Northeastern .....	1,772 60	1,772 60
23 Green Bay & Western .....	91,084 95	91,742 84
24 Hazellhurst & South Eastern .....	550 80	550 80
25 Iola & Northern .....	949 29	949 29
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....	17,284 39	17,284 39
28 Kickapoo Valley & Northern .....	5,777 39	5,777 39
29 Lake Superior Terminal & Transfer R'y Co. ....		
30 Mattoon R'y Co. ....	1,884 65	1,884 65
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....	2,483 41	2,483 41
33 Marshfield & South Eastern .....	5,983 29	5,983 29
34 Marinette, Tomahawk & Western .....	4,141 50	4,141 50
35 Milwaukee & Wauwatosa .....		
36 Minnesota & Wisconsin .....	3,134 37	3,134 37
37 Minneapolis, St. Paul & Ashland .....	269 97	269 97
38 Minneapolis, St. Paul & Sault Ste. Marie .....	171,010 96	707,387 26
39 Northern Pacific .....	99,438 06	5,491,677 14
40 Northwestern Coal R'y Co. ....		
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonic .....	1,299 97	1,299 97
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....	8,134 99	8,134 99
46 West Range (not operated) .....		
47 Winona Bridge R'y Co. ....	2,783 14	5,308 61
48 Wisconsin & Michigan .....	10,600 91	15,100 01
49 Whitecomb & Morris .....		
50 Wisconsin Central R'y Co. ....	893,149 61	1,140,242 33
51 Wisconsin Central Co. ....		
52 Hawthorn, Nebagamon & Superior .....	12 25	12 25
53 Hohm & Sons' Logging Co. ....		
54 Lake Shore & Eastern .....		
55 Superior Belt Line & Terminal .....		
56 Wisconsin & Western .....	817 36	
Totals .....	\$7,599,411 39	\$34,190,133 24

Receipts.

From Nov. 27 to Dec. 31, 1899.

*Earnings.*

sources of the several railway companies of the state of Wisconsin for the

FREIGHT.		MAIL, EXPRESS, TRANSPORTATION, CAR COMPANIES AND ALL OTHER SOURCES.		TOTAL.	
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.
\$13,041 29	\$13,041 29	\$824 83	\$824 83	\$15,109 04	\$15,109 04
19,271 53	19,271 53	4,852 31	4,852 31	39,507 08	39,507 08
9,109 71	9,109 71	152 93	152 93	9,628 79	9,628 79
2,712 20	2,712 20	192 34	192 34	5,646 04	5,646 04
9,375,477 46	30,404,493 27	953,201 36	2,854,155 21	12,720,984 62	49,566,633 16
9,712,728 35	31,236,760 33	558,429 85	1,839,698 69	12,817,064 41	41,773,997 58
2,654,705 07	5,200,000 00	237,409 78	474,000 00	3,807,813 24	7,474,000 00
1,009,858 13	25,397,160 57	56,219 67	3,529,766 40	1,314,920 10	36,420,538 49
2,325 91	1,702,609 94	71,371 50	623,678 28	71,371 50	2,326,288 22
55,471 94	2,325 91	215 20	215 20	3,640 96	3,640 96
	1,026,939 25	12,333 44	170,106 87	100,224 14	1,455,482 39
29,817 65	29,817 65			30,530 28	30,530 28
13,047 49	13,047 49			13,047 49	13,047 49
172,602 29	1,570,056 24	16,169 65	151,044 39	266,235 64	2,407,437 39
18,081 40	380,000 00	829 35	829 30	22,853 19	440,879 30
244,354 05	244,354 05	16,124 72	16,124 72	260,478 77	260,478 77
26,178 20	26,178 20			26,938 37	26,938 37
416,469 41	2,761,561 16	43,328 37	159,323 99	497,725 25	3,279,697 17
33,456 82	33,456 82	346 94	346 94	35,576 36	35,576 36
362,708 33	363,820 11	25,469 52	25,625 88	479,260 80	481,188 83
19,187 43	19,187 43	104 56	104 56	19,842 79	19,842 79
4,680 20	4,680 28	266 59	266 59	5,896 16	5,893 16
		135 00	135 00	135 00	135 00
62,213 13	62,213 39	3,780 73	3,780 73	83,278 25	83,278 25
25,452 22	25,452 22	1,680 61	1,680 61	32,910 22	32,910 22
		11,120 23	11,120 23	11,120 23	11,120 23
7,255 26	7,255 26	597 29	597 29	9,737 20	9,737 20
45,030 70	45,030 70	1,633 70	1,633 70	49,147 81	49,147 81
32,681 30	32,681 92	625 80	625 80	39,291 01	39,291 01
36,874 80	36,874 80	1,145 96	1,145 96	42,162 26	42,162 26
30,595 62	30,595 62	932 29	932 29	34,662 29	34,662 29
25,714 17	25,714 17			25,984 14	25,984 14
1,206,680 19	3,639,154 40	66,007 69	322,759 12	1,443,698 84	4,669,300 78
304,190 37	20,563,188 09	26,505 32	1,805,929 50	490,133 75	27,860,794 73
29,656 43	29,656 43	4,391 75	4,391 75	34,048 18	34,048 18
8,719 75	8,719 75			8,719 75	8,719 75
10,591 07	10,591 07	368 51	368 51	12,259 55	12,259 55
98,722 02	98,722 02	3,795 20	3,795 20	110,652 21	110,652 21
8,562 19	16,331 54			11,345 27	21,640 15
68,236 88	93,717 74	8,494 19	12,628 05	87,331 98	121,445 80
2,415 07	2,415 07			2,415 07	2,415 07
3,432,424 70	4,110,128 72	205,242 46	258,080 39	4,530,816 77	5,508,451 44
6,743 39	6,743 39	42 00	42 00	6,797 57	6,797 57
1,009 50	1,009 50			1,009 50	1,009 50
531 45	531 45			531 45	531 45
		5,810 28		*5,810 28	5,810 28
2,815 14		157 83	157 83	3,790 38	157 88
\$29,642,398 78	\$129,307,310 61	\$2,340,303 80	\$12,281,113 94	\$39,582,118 97	\$175,778,555 79

\*Rentals accrued from leases of line.

## Disbursements.

Total amount paid by the several railway companies in the state of Wisconsin is justly chargeable to each, specified in items as follows, as reported to the

NAME OF COMPANY.	FOR CONSTRUCTION.		FOR EQUIPMENT.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western .....	\$3,000 00	\$3,000 00		
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harb'r & Gt. W'n.]				
6 Bayfield Transfer R'y.....	526 58	526 58	\$1,651 50	\$1,651 50
7 Chicago, Milwaukee & St. P.	261,716 13	1,012,049 99	149,118 59	576,633 02
8 Chicago & Northwestern....	907,432 69	2,933,225 77	280,646 66	907,174 74
9 Chicago, St. P., M. & O....	319,805 67	801,166 18		
10 Chicago, Burling'n & North.	12,692 49	21,749,094 79	38,592 15	1,048,699 72
11 Chicago, L. Shore & East'n	5,408 61	87,375 56		129,161 88
12 Chicago & Lake Superior ..	498 68	498 68		
13 Chicago, Madison & North'n				
14 Chicago, Wisconsin & Minn.				
15 Chippewa Riv. & Menomonie	8,444 33	8,444 33		
16 Drummond & South West'n				
17 Duluth, So. Shore & Atlantic		41,617 80		212,880 33
18 Duluth Short Line .....				
19 Duluth, Superior & West'n	124,943 14	124,943 14	20,000 00	20,000 00
20 Dunbar & Wausaukee .....			5,485 57	5,485 57
21 East'n R'y Co. of Minnesota		5,159,289 26		1,931,742 71
22 Fairchild & North Eastern	26,255 71	26,255 71	2,575 97	2,575 97
23 Green Bay & Western.....				
24 Hazelhurst & South East'n.				
25 Iola & Northern .....				
26 Glenwood & Northeastern...				
27 Kewaunee, Gr. Bay & West.				
28 Kickapoo Valley & North'n.	205 99	205 99	4,578 56	4,578 56
29 Lake Sup. T. & T. R'y Co.				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago				
32 Milwaukee & Superior .....	7,460 98	7,460 98	24,466 51	24,466 51
33 Marshfield & South Eastern	1,013 08	1,013 08	4,997 00	4,997 00
34 Marinette, Tom. & Western	613 06	613 06	10,033 59	10,033 59
35 Milwaukee & Wauwatosa ..				
36 Minnesota & Wisconsin .....	6,390 23	6,390 23	526 75	526 75
37 Minneapolis, St. P. & Ashl'd	84,495 20	84,495 20	11,690 00	11,690 00
38 M., St. P. & Sault St. Marie	195,134 68	1,019,545 18	5,471 73	25,261 94
39 Northern Pacific .....		1,257,478 84		829,386 29
40 Northwestern Coal R'y Co.	145,937 35	145,937 35	23,752 54	23,752 54
41 Oshkosh Transportation Co.	681 27	681 27		
42 Packwaukee & Montello.....				
43 Rice Lake, Dallas & Menom.				
44 St. Cloud, G'tsburz & Ashl'd				
45 Washburn, Bayfield & I. R.			54,043 65	54,043 65
46 West Range .....				
47 Winona Bridge R'y Co.....		1,500 95		
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Cent. R. R. Co.]				
51 Wisconsin Central Co.....	226,235 93	288,225 71	794,769 24	353,489 41
52 Lake Shore & Eastern.....			28 28	28 23
53 Holm & Son .....			3,700 00	3,700 00
54 Hawth'n, Nebagamon & Sup.	250 55	250 55		
55 St. Paul & Duluth .....				
56 Superior Belt Line & Tr....	845 25	845 25		
57 Wisconsin & Western .....	226 41	226 41		
Totals .....	\$2,339,611 17	\$34,762,357 94	\$1,436,128 44	\$6,681,964 91

Disbursements.

and also upon the whole for the calendar year ending December 31, 1899, which Railroad Commissioner of the state of Wisconsin January, 1900:

FOR OPERATION.		FOR TAXES.		FOR INTEREST.		No
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$10,591 22	\$10,591 22	\$75 80	\$75 80	\$6,720 00	\$6,720 00	1
21,514 91	21,514 91	170 00	170 00	10,000 00	10,000 00	2
.....	.....	.....	.....	.....	.....	3
8,346 10	8,346 10	105 00	105 00	540 08	540 08	4
.....	.....	.....	.....	.....	.....	5
8,541 39	8,541 39	49 30	49 30	77,601 22	77,601 32	6
7,475,697 55	25,349,940 82	469,329 34	1,208,084 70	1,761,247 58	6,810,702 19	7
8,186,766 12	25,718,579 50	395,405 35	1,242,158 86	2,199,826 16	7,110,815 58	8
2,705,817 33	6,128,944 97	158,266 86	389,190 91	616,611 87	1,447,106 00	9
759,285 90	21,354,107 60	52,471 31	1,372,161 81	254,549 86	6,917,115 87	10
50,513 61	1,086,779 74	2,431 62	14,000 00	14,939 50	168,700 00	11
4,204 91	4,204 91	15 00	15 00	491 00	491 00	12
134,524 19	819,772 27	526 48	48,987 58	135,603 02	343,500 00	13
.....	.....	.....	.....	.....	.....	14
21,566 23	21,566 23	152 50	152 50	.....	.....	15
9,669 83	9,669 83	.....	.....	3,000 00	3,000 00	16
181,674 62	1,468,896 17	5,476 37	53,653 43	153,641 07	875,767 66	17
.....	.....	.....	.....	.....	.....	18
129,455 08	129,455 08	10,439 11	10,439 11	20,000 00	20,000 00	19
5,485 57	5,485 57	234 71	234 71	.....	.....	20
352,379 71	1,491,384 25	21,209 86	115,082 19	25,600 00	435,000 00	21
8,678 09	8,678 09	115 00	115 00	.....	.....	22
378,147 12	378,147 12	3,957 69	3,957 69	.....	.....	23
13,206 92	13,206 92	90 00	90 00	.....	.....	24
5,610 74	5,610 74	23 50	23 50	.....	.....	25
10,757 77	10,757 77	.....	.....	.....	.....	26
60,757 68	60,757 68	530 85	530 85	20,400 00	20,400 00	27
46,175 59	46,175 59	325 34	325 34	.....	.....	28
49,504 22	49,504 22	78 50	78 50	11,700 00	11,700 00	29
11,361 33	11,361 33	105 00	105 00	10,080 00	10,080 00	30
.....	.....	.....	.....	.....	.....	31
27,342 40	27,342 40	125 20	125 20	14,781 77	14,781 77	32
20,018 22	20,018 22	.....	.....	.....	.....	33
37,079 37	37,079 37	190 96	190 96	.....	.....	34
.....	.....	.....	.....	.....	.....	35
19,432 25	19,432 25	140 00	140 00	9,750 00	9,750 00	36
21,051 54	21,051 54	117 50	.....	.....	.....	37
630,429 80	2,407,771 31	57,697 89	219,118 11	258,894 55	1,195,265 70	38
211,623 73	13,368,452 58	17,072 68	801,145 45	130,855 00	6,019,273 00	39
23,752 54	23,752 54	2,235 80	2,235 80	43,450 00	43,450 00	40
2,591 08	2,591 08	62 82	62 82	.....	.....	41
.....	.....	.....	.....	.....	.....	42
10,782 52	10,782 52	62 74	62 74	.....	.....	43
.....	.....	.....	.....	.....	.....	44
120,708 14	120,708 14	.....	.....	3,763 33	3,763 33	45
.....	.....	.....	.....	.....	.....	46
1,399 38	2,669 19	297 36	395 52	5,032 99	9,600 00	47
39,122 63	75,819 05	694 89	1,346 70	27,211 39	52,735 56	48
2,818 00	2,818 00	30 00	30 00	.....	.....	49
.....	.....	.....	.....	.....	.....	50
3,083,878 91	3,311,006 92	173,595 06	195,371 07	536,237 89	575,856 84	51
6,210 03	6,210 03	.....	.....	.....	.....	52
89,046 06	89,046 00	896 54	896 54	.....	.....	53
6,187 12	6,187 12	.....	.....	.....	.....	54
14,379 79*	.....	124 45	2,489 00	14,882 55	2,976,510 00	55
10 25	10 25	2 75	2 75	.....	.....	56
3,923 32	3,923 32	.....	.....	.....	.....	57
\$25,035,672 68	\$134,579,647 65	\$1,374,841 12	\$5,683,516 94	\$6,367,410 93	\$28,970,225 90	

\*St. Paul & Duluth disbursements for operation of whole line not returned.

## Disbursements.

Total amount paid by the several railways in the state of Wisconsin for the of said railways which is in the state of Wisconsin, and also upon the whole sioner January, 1900.—Continued.

NAME OF COMPANY.	FOR RENTALS.		FOR DIVIDENDS.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western.....				
3 Ashland Siskiwit.....				
4 Big Falls R'y Co.....				
5 Bayfield Harb'r & Gt. W'n.....				
6 Bayfield Transfer R'y.....				
7 Chicago, Milwaukee & St. P.....			\$1,229,004 39	\$4,752,530 50
8 Chicago & Northwestern.....	\$7,059 53	\$22,819 55	1,089,291 33	3,521,073 75
9 Chicago, St. P., M. & O.....		114,861 11	731,062 33	1,715,706 00
10 Chicago, Burlington & N'th'n.....		262,248 81	207,804 41	5,641,252 50
11 Chicago, Lake Shore & East.....	100,000 00	500,000 00		
12 Chicago & Lake Superior.....				
13 Chicago, Madison & North'n.....				
14 Chicago, Wisconsin & Minn.....				
15 Chippewa Riv. & Menom.....				
16 Drummond & South West'n.....				
17 Duluth, South Shore & Atl.....	16,632 80	39,929 00		
18 Duluth Short Line.....				
19 Duluth, Sup. & Western.....	3,646 56	3,646 56	35,070 00	35,070 00
20 Dunbar & Wausaukee.....				
21 East'n R'y Co. of Minnesota.....	7,078 44	91,044 32	89,300 00	1,250,000 00
22 Fairchild & North Eastern.....				
23 Green Bay & Western.....	4,691 94	4,691 94	52,500 00	52,500 00
24 Hazelhurst & South Eastern.....			7,000 00	7,000 00
25 Iola & Northern.....				
26 Glenwood & Northeastern.....	2,832 13	2,832 13		
27 Kewaunee, G. Bay & West'n.....	108 00	108 00		
28 Kickapoo Valley & North'n.....				
29 Lake Sup. T. & T. R'y Co.....				
30 Mattoon R'y Co.....				
31 Milwaukee & L. Winnebago.....				
32 Milwaukee & Superior.....	120 00	120 00		
33 Marshfield & South Eastern.....				
34 Marinette, Tom. & Western.....				
35 Milwaukee & Wauwatosa.....				
36 Minnesota & Wisconsin.....	68 76	68 76		
37 Minneapolis, St. P. & Ashl'd.....				
38 M., St. P. & Sault Ste. Marie.....		139,573 94		
39 Northern Pacific.....		87,185 93	117,400 00	5,400,000 00
40 Northwestern Coal R'y Co.....				
41 Oshkosh Transportation Co.....			5,050 00	5,050 00
42 Packwaukee & Montello.....				
43 Rice Lake, Dallas & Menom.....				
44 St. Cloud, Gitsburg & Ashl'd.....				
45 Washburn, Bayfield & I. Riv.....	1,030 04	1,030 04		
46 West Range.....				
47 Winona Bridge R'y Co.....				
48 Wisconsin & Michigan.....	7,165 66	8,430 28		
49 Whitcomb & Morris.....				
50 Wisconsin Cent. R. R. Co.....				
51 Wisconsin Central Co.....	338,785 75	692,978 24		
52 Lake Shore & Eastern.....				
53 Holms & Sons.....				
54 Hawth'n, Nebagam'n & Sup.....				
55 St. Paul & Duluth.....	174 50			
56 Superior Belt Line & Tr.....				
57 Wisconsin & Western.....	16 66	16 66		
Totals .. .. .	\$489,905 77	\$1,964,771 57	\$3,563,482 46	\$22,380,182 75

*Disbursements.*

calendar year ending December 31, 1899 which is justly chargeable to that part line, and specified in items as follows, as reported to the Railroad Commis-

FOR OTHER PURPOSES.		TOTAL AMOUNT.		NUMBER OF MILES.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
		\$17,387 02	\$17,387 02	15.16	15.16	1
		34,684 91	34,684 91	34.00	34.00	2
		8,991 18	8,991 18	21.00	21.00	3
		88,370 69	88,370 09	9.86	9.86	4
\$70,476 13	\$272,529 50	12,064,451 36	42,449,071 43	1,650.46	6,382.28	5
62,646 09	202,500 00	13,129,073 93	41,658,347 75	1,625.73	5,076.89	6
		4,531,567 06	10,596,975 17	619.11	1,532.57	7
19,274 18	523,754 94	1,344,070 38	58,841,436 04	222.57	6,010.33	8
		173,293 34	1,986,017 18	17.33	311.43	9
		5,269 59	5,209 59	3.00	3.00	10
		270,653 69	1,212,259 85	91.31	231.30	11
		30,163 06	30,163 06	33.00	33.00	12
		12,669 83	12,669 83	21.72	21.72	13
		357,424 86	2,692,736 68	110.60	586 43	14
		343,553 89	343,553 89	6.16	6.16	15
		5,720 29	5,720 29	13.50	13.50	16
		380,668 01	10,473,542 73	38.15	470.36	17
7,953 75	7,958 75	45,583 52	45,583 52	30.00	30.10	18
911 00	911 00	440,207 75	440,207 75	225.00	225.00	19
		20,296 92	20,296 92	17.00	17.00	20
		5,634 24	5,634 24	4.70	4.70	21
10,257 77	10,257 77	13,089 90	13,089 90	15.00	15.00	22
2,800 00	2,800 00	84,596 53	84,596 53	36.70	36.70	23
		51,285 48	51,285 48	51.30	51.30	24
		61,282 72	61,282 72	15.70	15.70	25
		11,466 33	11,466 33	21.00	21.00	26
		69,595 09	69,595 09	26.16	26.16	27
2,973 17	2,973 17	29,001 47	29,001 47	33.00	33.00	28
240 68	240 68	48,157 66	48,157 66	33.30	33.30	29
		37,129 59	37,129 59	21.00	21.00	30
821 60	821 60	118,444 14	118,444 14	35.50	35.50	31
1,089 90	1,089 90	1,162,361 30	5,017,181 84	271.42	1,277.26	32
14,732 65	17,646 36	296,193 18	29,915,363 79	102.92	4,746.00	33
67,496 78	2,222,451 70	33,623 64	33,623 64	8.00	8.00	34
110,122 65	110,122 65	8,385 17	8,385 17	4.28	4.28	35
		10,845 26	10,845 26	7.50	7.50	36
		222,898 03	222,898 03	64.00	64.00	37
43,352 87	43,352 87	10,819 44	22,128 50	.54	1.03	38
		74,194 57	138,331 59	40.12	72.07	39
4,179 71	7,962 84	2,843 00	2,848 00	6.00	6.00	40
		5,153,502 87	5,916,928 19	874.16	938.73	41
		6,238 26	6,238 26	12.00	12.00	42
		93,632 54	93,632 54	27.00	27.00	43
		6,437 67	6,437 67	7.35	7.35	44
17,464 94	296,903 98	47,026 16	780,000 00	13.75	2,462.24	45
		858 35	858 35	10.94	10.94	46
3,923 32	3,923 32	4,161 39	4,161 39	51.30	51.30	47
\$439,922 19	\$3,728,291 03	\$0,957,743 66	\$213,662,770 25	6,548.00	28,733.68	48

*Expenses.*

Statement to the Railroad Commissioner of the state of Wisconsin of the 1892.

NAME OF COMPANY.	OPERATING EXPENSES.		TAXES.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern	\$10,591 22	\$10,591 22	\$75 80	\$75 80
2 Ahnapee & Western	21,514 91	21,514 91	170 00	170 00
3 Ashland Siskiwit				
4 Big Falls R'y Co.	8,346 10	8,346 10	105 00	105 00
5 Bayfield Harbor & G. W.]				
6 Bayfield Transfer R'y	8,541 39	8,541 39	49 30	49 30
7 Chicago Milw'kee & St. P.	7,475,697 55	25,349,940 82	469,329 34	1,208,084 70
8 Chicago & Northwestern	8,186,766 12	25,718,579 50	385,405 35	1,242,153 86
9 C., St. P., M. & O.	2,705,817 33	6,128,944 95	158,266 86	389,190 91
10 C., B. & Q.	759,285 98	21,354,107 60	52,471 31	1,372,161 81
11 Chicago, L. Shore & East'n	50,513 61	1,086,779 74	2,431 62	14,000 00
12 Chicago & L. Superior	4,204 91	4,204 91	1,500 00	15 00
13 Chicago, Madison & North.	134,524 19	819,772 27	526 48	48,987 58
14 Chicago, Wis. & Minn.				
15 Chippewa Riv. & Menom.	21,566 23	21,566 23	152 50	152 50
16 Drummond & So. West'n	9,669 83	9,669 83		
17 Duluth, So. Shore & Atl.	181,674 62	1,428,974 88	5,476 37	53,653 43
18 St. Paul & Duluth	14,379 72		124 45	124 45
19 Duluth, Sup. & W. Ter. Co.	129,455 08	129,455 08	10,439 11	10,439 11
20 Dunbar & Wausaukee	5,485 57	5,485 57	234 71	234 71
21 Eastern R'y Co. of Minn.	352,379 71	1,491,384 25	21,209 86	115,082 19
22 Fairchild & North East'n.	8,678 09	8,678 09	115 00	115 00
23 Green Bay & Western	378,147 12	378,147 12	3,957 69	3,957 69
24 Hazelhurst & So. East'n.	12,555 99	12,555 99	90 00	90 00
25 Iola & Northern	5,610 74	5,610 74	23 50	23 50
26 Glenwood & Northeastern.	10,257 77	10,257 77		
27 Kewanee, G. Bay & West.	60,757 68	60,757 68	530 85	530 85
28 Kickapoo Valley & North'n	46,175 59	46,175 59	325 34	325 34
29 L. Sup. T. & T. R'y Co.	49,504 22	49,504 22	78 50	78 50
30 Mattoon R'y Co.	11,361 33	11,361 33	105 00	105 00
31 Milwaukee & L. Winnebago				
32 Milwaukee & Superior	27,342 40	27,342 40	125 20	125 20
33 Marshfield & South East'n	20,018 22	20,018 22		
34 Marinette, Tom. & West'n	37,079 37	37,079 37	190 96	190 96
35 Milwaukee & Wauwatosa				
36 Minnesota & Wisconsin	20,780 60	20,780 60	140 00	140 00
37 Minn., St. P. & Ashland	21,051 54	21,051 54	117 50	
38 M., St. P. & S. Ste. Marie	630,429 80	2,407,771 31	57,697 89	219,118 11
39 Northern Pacific	211,623 73	13,368,455 58	17,072 67	801,145 45
40 Northwestern Coal R'y Co.	23,752 54	23,752 54	237 31	237 31
41 Oshkosh Transport. Co.	3,272 35	3,272 35	62 82	62 82
42 Packwaukee & Montello				
43 Rice L., Dallas & Menom.	10,782 52	10,782 52	62 74	62 74
44 St. Cloud, G'tsb'g & Ashl'd				
45 Washburn, Bayfield & I. R.	120,708 14	120,708 14		
46 West Range				
47 Winona Bridge R'y Co.	1,399 38	2,669 19	207 36	395 52
48 Wisconsin & Michigan	39,122 63	75,819 05	694 89	1,346 70
49 Whitcomb & Morris	2,818 00	2,818 00	30 00	30 00
50 Wisconsin Cent. R. R. Co.	3,083,878 91	3,311,006 92	173,595 05	195,371 07
51 Wisconsin Central Co.				
52 Hawth'n, Nebagamon & S.	6,187 12	6,187 12		
53 Holme's & Sons	38,746 14	38,746 14	896 54	896 54
54 Lake Shore & Eastern	6,210 03	6,210 03		
55 Sup. Belt Line & Tr.	10 25	10 25	2 75	2 75
56 Wisconsin & Western	3,923 32	3,923 32		
Totals	\$25,035,672 68	\$134,579,647 65	\$1,347,841 12	\$5,683,576 84

*Expenses.*

expenses of the several railways of the state for the year ending December 31,

RENTALS AND INTEREST.		DIVIDENDS.		TOTAL.		No.
Wisconsin.	Whole line	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$6,720 25	\$6,720 25			\$17,387 27	\$17,387 27	1
20,400 00	20,400 00			42,084 91	42,084 91	2
540 08	540 08			8,991 18	8,991 18	3
77,601 32	77,601 32			86,192 01	86,192 01	4
6,761,247 58	6,810,702 19	1,229,004 39	4,752,520 50	10,935,278 86	38,121,253 21	5
2,271,413 68	7,342,218 58	1,150,470 50	3,718,832 00	12,004,055 65	38,021,788 94	6
616,611 87		731,062 33	1,715,706 00	4,211,758 39		7
254,549 86	7,179,364 68	207,804 41	5,614,252 50*	1,293,385 74	*6,043,641 53	8
114,939 50	668,700 00			167,884 73	1,769,479 74	9
491 00	491 00			4,710 91	4,710 91	10
135,603 02	343,500 00			270,653 69	1,212,253 85	11
						12
						13
						14
3,000 00	3,000 00			21,718 73	21,718 73	15
170,273 87	915,688 95			12,669 83	12,669 83	16
15,057 05	15,057 05	17,464 94		357,424 86	2,393,317 26	17
23,646 56	23,646 56	35,070 00	35,070 00	47,076 16		18
7,078 44	526,044 32	89,300 00	1,250,000 00	198,610 75	198,610 75	19
				5,720 28	5,720 28	20
4,691 94	4,691 94	52,500 00	52,500 00	563,902 00	3,382,510 76	21
		7,000 00	7,000 00	8,793 09	8,793 09	22
				439,296 75	439,296 75	23
				19,645 99	19,645 99	24
2,832 13	2,832 13			5,634 24	5,634 24	25
20,508 00	20,508 00			13,089 90	13,089 90	26
				81,796 53	81,796 53	27
11,700 00	11,700 00			46,509 93	46,509 93	28
				61,282 72	61,282 72	29
				11,466 33	11,466 33	30
13,080 00	13,080 00					31
				37,667 60	37,667 60	32
				20,018 29	20,018 29	33
				37,270 33	37,270 33	34
						35
9,818 96	9,818 96			20,739 36	30,739 36	36
				21,169 04	21,169 04	37
274,086 87	1,399,108 62			† 976,947 21	† 4,043,614 40	38
	6,112,705 70	117,460 00	5,400,000 00	228,696 40	25,682,303 73	39
16,250 00	16,250 00			40,239 85	40,239 85	40
		5,050 00	5,050 00	8,385 17	8,385 17	41
						42
				10,845 26	10,845 26	43
						44
3,763 33	3,763 33			124,417 47	124,417 47	45
						46
9,181 45 ‡	17,152 84			10,819 44	20,627 55	47
34,377 05	62,165 84			74,194 57	138,331 59	48
				2,848 00	2,848 00	49
874,023 64	1,268,835 08			4,132,497 60	4,775,213 07	50
						51
				6,187 12	6,187 12	52
				38,746 14	38,746 14	53
				6,210 03	6,210 03	54
					13 00	55
11 66	11 66			3,934 98	3,934 98	56

\*And other deductions.

†Extraordinary expenses, etc. From Nov. 27 to Dec. 31, 1899.

‡And repairs.



## Comparative Table.

Recapitulation of accounts of railroads as reported for the calendar years of 1898 and 1899.

Items.	1898.	1899.	Increase.	Decrease.
Total cost of railroads .....	\$222,121,779 82	\$247,502,364 44	\$25,380,584 62	.....
Total gross receipts .....	35,204,441 56	39,775 562 20	4,571,120 64	.....
Total net earnings, Wisconsin .....	22,223,634 29	13,703,087 91	.....	\$8,520,546 38
Total interest bearing indebtedness .....	144,859,140 88	141,964,850 44	.....	2,894,290 44
Total interest accrued upon same .....	7,310,081 15	6,295,557 76	.....	1,014,525 89
Total amount interest paid same .....	5,438,540 51	5,514,614 43	76,073 92	.....
Total miles of operated railroad .....	6,487.20	6,592.00	104.80	.....
Total amount of tax due Wisconsin .....	\$1,365,493 92	\$1,549,434 87	\$183,940 95	.....
Total miles operated, whole line .....	21,889.53	28,783.63	6,894.10	.....
Total passenger train earnings, Wisconsin .....	6,727,345 65	7,599,411 39	872,065 74	.....
Total amount tax, whole line .....	\$4,031,586 57	\$5,683,516 94	\$1,651,930 37	.....
Total passenger train earnings, whole line .....	24,593,773 70	34,190,133 24	9,596,759 54	.....
Total freight train earnings, Wisconsin .....	26,154,323 96	29,642,398 78	3,488,074 82	.....
Total freight train earnings, whole line .....	95,066,571 20	129,307,310 61	34,240,739 47	.....
Total mail, express and other sources .....	2,134,264 83	2,340,303 90	206,239 07	.....
Total mail, express and other sources, whole line .....	7,464,456 85	12,281,113 94	3,817,657 09	.....
Total earnings, Wisconsin ..	35,016,434 44	39,582,111 97	4,565,677 53	.....
Total earnings, whole line ..	127,124,801 79	175,778,555 79	48,653,754 00	.....
Total operating expenses, Wisconsin .....	21,975,905 44	25,035,672 78	3,059,767 34	.....
Total operating expenses, whole line .....	72,233,506 60	134,579,647 65	62,346,141 05	.....
Total rentals and interest ..	7,198,556 26	6,857,016 70	.....	341,539 56
Total dividends, whole line ..	27,688,749 95	30,934,997 47	.....	.....
Total rentals and interest, whole line .....	27,688,749 95	30,934,997 47	3,246,247 54	.....
Total dividends, Wisconsin ..	2,995,857 98	3,563,482 46	567,624 48	.....
Total dividends, whole line ..	13,602,318 05	22,380,182 75	8,777,864 70	.....
Total for construction Wisconsin .....	2,053,345 97	2,339,611 17	286,265 10	.....
Total for construction, whole line .....	11,009,425 51	34,762,357 94	23,752,932 43	.....
Total equipment, Wisconsin ..	875,397 46	1,436,128 44	560,720 98	.....
Total equipment, whole line ..	4,664,448 47	6,681,964 91	2,017,516 44	.....
Total expenses, Wisconsin ..	33,436,986 24	40,957,749 66	7,520,763 42	.....
Total expenses, whole line ..	117,586,794 35	213,662,770 25	96,075,975 90	.....

## Capital Stock, etc.

Capital stock of local and proportional capital stock of inter-state railways — Wisconsin — Year ending June 30, 1899.

NAME OF COMPANY.	Number of shares authorized.	Common.	Preferred.	Total.
1 Abbotsford & Northeastern .....	1,200	1,200		1,200
2 Ahnapee & Western .....	5,000	5,000		5,000
3 Ashland Siskiwi <sup>1</sup> .....				
4 Big Falls R'y Co. ....	10	10		10
5 Bayfield Transfer R'y Co. ....	30,000	30,000		30,000
6 Bayfield Terminal R'y <sup>2</sup> .....				
7 Chicago, Milwaukee & St. Paul .....	221,315	125,819+	95,466+	221,315
8 Chicago & Northwestern .....	207,515	129,355+	78,159+	207,515
9 Chicago, St. Paul, Minneapolis & O. ....	148,424	148,424		148,424
10 Chicago, Burlington & Northern .....	52,101	52,101		52,101
11 Chicago, Lake Shore & Eastern .....	1,000	1,000		1,000
12 Chicago & Lake Superior .....	10,000	10,000		10,000
13 Chicago, Madison & Northern .....	500	500		500
14 Chicago, Wisconsin & Minnesota .....	16,000	6,400	9,600	16,000
15 Chippewa River & Menomonie <sup>3</sup> .....				
16 Drummond & South Western .....	100	100		100
17 Duluth, South Shore & Atlantic .....	44,000	21,000	20,000	44,000
18 Duluth Short Line .....	591+	591		591
19 Duluth, Superior & Western .....	5,000	5,000		5,000
20 Dunbar & Wausaukee <sup>4</sup> .....				
21 Eastern Railway Co. of Minnesota .....	10,000	10,000		10,000
22 Fairchild & North Eastern <sup>5</sup> .....				
23 Green Bay & Western .....	25,000	25,000		25,000
24 Hazelhurst & South Eastern .....	4,000	,000		4,000
25 Iola & Northern .....	17,000	17,000		17,000
26 Glenwood & Northeastern <sup>6</sup> .....				
27 Kewaunee, Green Bay & Western .....	6,800	4,800	2,000	6,800
28 Kickapoo Valley & Northern .....	16,000	16,000		16,000
29 Lake Superior Term. & Transf. R'y Co .....	12,000	12,000		12,000
30 Mattoon R'y Co. <sup>7</sup> .....				
31 Milwaukee & Lake Winnebago .....	25,800	10,000	15,800	25,800
32 Milwaukee & Superior .....	7,500	7,500		7,500
33 Marshfield & South Eastern .....	15,000	7,500	7,500	15,000
34 Marinette, Tomahawk & Western .....	10,000	10,000		10,000
35 Milwaukee & Wauwatosa <sup>8</sup> .....				
36 Minnesota & Wisconsin .....	550	550		550
37 Minneapolis, St. Paul & Ashland <sup>9</sup> .....				
38 Minneapolis, St. P. & Sault Ste. Marie .....	48,930	32,620	16,310	48,930
39 Northern Pacific .....	32,551	16,800	15,750	32,551
40 Northwestern Coal R'y Co. ....	10,000	10,000		10,000
41 Oshkosh Transportation Co. ....	700	700		700
42 Packwaukee & Montello .....	1,400	700	700	1,400
43 Rice Lake, Dallas & Menomonie .....	4,000	4,000		4,000
44 St. Cloud, Grantsburg & Ashland .....	25,000	25,000		25,000
45 Washburn, Bayfield & Iron River <sup>10</sup> .....				
46 West Range .....	700			700
47 Winona Bridge R'y Co. ....	4,000	4,000		4,000
48 Wisconsin & Michigan .....	4,918	4,918		4,918
49 Whitcomb & Morris .....	100	100		100
50 Wisconsin Central R. R. Co. ....	114,355	91,355	20,000	114,355
51 Wisconsin Central Co. ....	121,185	97,684+	23,501+	121,185
52 Hawthorn, Nebagamon & Superior <sup>11</sup> .....	500	500		500
53 St. Paul & Duluth .....	7,308	3,654	3,654	7,308

<sup>1</sup> Logging R'y.<sup>2</sup><sup>3</sup><sup>4</sup> Logging R'y, owned by Girard Lumber Co.<sup>5</sup> N. C. Foster Lumber Co., owners.<sup>6</sup> Glenwood Mfg. Co., owners.<sup>7</sup> Did not report.<sup>8</sup> Changed to Electric R'y.<sup>9</sup> In the hands of Construction Co.<sup>10</sup> In hands of receiver; no report.<sup>11</sup> No stock issued.

## Capital Stock, etc.

Capital stock of local and proportional capital stock of inter-state railways — Wisconsin — Year ending June 30, 1899. — Continued.

NAME OF COMPANY.	Par value of shares.	Total amount issued and outstanding.	DIVIDENDS DECLARED, 1899.	
			Rate.	Amount.
1 Abbotsford & Northeastern.....	\$100 00	\$120,000 00	.....	None.
2 Ahnapee & Western.....	100 00	439,500 00	.....	None.
3 Ashland Siskiwit <sup>1</sup> .....	.....	.....	.....	.....
4 Big Falls R'y Co.....	100 00	1,000 00	.....	None.
5 Bayfield Transfer R'y Co.....	100 00	3,000,000 00	.....	None.
6 Bayfield Terminal R'y <sup>2</sup> .....	.....	.....	.....	.....
7 Chicago, Milwaukee & St. Paul.....	100 00	22,131,595 00	5 & 7	\$1,233,159 60
8 Chicago & Northwestern.....	100 00	20,751,522 60	5 & 7	1,128,290 55
9 Chicago, St. Paul, Minneapolis & Omaha.....	100 00	14,842,450 19	3½ & 7	628,502 07
10 Chicago, Burlington & Northern.....	100 00	5,210,100 00	.....	None.
11 Chicago, Lake Shore & Eastern.....	100 00	100,000 00	.....	None.
12 Chicago & Lake Superior.....	100 00	18,000 00	.....	None.
13 Chicago, Madison & Northern.....	.....	19,738 48	.....	None.
14 Chicago, Wisconsin & Minnesota.....	100 00	1,600,600 00	.....	None.
15 Chippewa River & Menomonie <sup>3</sup> .....	.....	.....	.....	.....
16 Drummond & South Western.....	100 00	10,000 00	.....	None.
17 Duluth, South Shore & Atlantic.....	100 00	440,000 00	.....	None.
18 Duluth Short Line.....	100 00	59,154 90	.....	None.
19 Duluth, Superior & Western.....	100 00	250,500 00	.....	None.
20 Dunbar & Wausaukee <sup>4</sup> .....	.....	.....	.....	.....
21 Eastern Railway Co. of Minnesota.....	100 00	1,000,000 00	10	100,000 00
22 Fairchild & North Eastern <sup>5</sup> .....	.....	.....	.....	.....
23 Green Bay & Western.....	100 10	2,500,000 00	1½	37,500 00
24 Hazellhurst & South Eastern.....	25 00	100,000 00	7	7,000 00
25 Iola & Northern.....	100 00	71,400 00	.....	.....
26 Glenwood & Northeastern <sup>6</sup> .....	.....	.....	.....	.....
27 Kewaunee, Green Bay & Western.....	100 00	661,950 00	.....	None.
28 Kickapoo Valley & Northern.....	100 00	138,000 00	.....	None.
29 Lake Superior Term. & Transf. R'y Co.....	100 00	94,200 00	.....	None.
30 Mattoon R'y Co. <sup>7</sup> .....	.....	.....	.....	.....
31 Milwaukee & Lake Winnebago.....	100 00	2,300,000 00	.....	.....
32 Milwaukee & Superior.....	100 00	125,000 00	.....	None.
33 Marshfield & South Eastern.....	100 00	400,060 00	.....	None.
34 Marinette, Tomahawk and Western.....	100 00	161,500 00	.....	None.
35 Milwaukee & Wauwatosa <sup>8</sup> .....	.....	.....	.....	.....
36 Minnesota & Wisconsin.....	100 00	55,000 00	.....	None.
37 Minneapolis, St. Paul & Ashland <sup>9</sup> .....	.....	.....	.....	.....
38 Minneapolis, St. Paul & Sault Ste. Marie.....	100 00	4,893,000 00	.....	None.
39 Northern Pacific.....	100 00	3,255,000 00	½	96,600 00
40 Northwestern Coal R'y Co.....	100 00	1,000,000 00	.....	None.
41 Oshkosh Transportation Co.....	100 00	170,000 00	7	5,000 00
42 Packwaukee & Montello.....	100 00	170,000 00	.....	None.
43 Rice Lake, Dallas & Menomonie.....	100 00	60,000 00	.....	None.
44 St. Cloud, Grandburg & Ashland.....	100 00	29,210 00	.....	None.
45 Washburn, Bayfield & Iron River <sup>10</sup> .....	.....	.....	.....	.....
46 West Range.....	100 00	.....	.....	.....
47 Winona Bridge R'y Co.....	100 00	400,000 00	.....	None.
48 Wisconsin & Michigan.....	100 00	491,800 00	.....	None.
49 Whitcomb & Morris.....	100 00	10,040 00	.....	None.
50 Wisconsin Central R. E. Co.....	100 00	11,345,500 00	.....	None.
51 Wisconsin Central Co.....	100 00	12,118,512 00	.....	None.
52 Hawthorn, Nebagamom & Superior <sup>11</sup> .....	100 00	.....	.....	.....
53 St. Paul & Duluth.....	100 00	533,468 20	8	19,972 92

<sup>1</sup> Logging R'y.<sup>2</sup><sup>3</sup><sup>4</sup> Logging R'y. owned by Girard Lumber Co.<sup>5</sup> N. C. Foster Lumber Co., owners.<sup>6</sup> Glenwood Mfg. Co., owners.<sup>7</sup> Did not report<sup>8</sup> Changed to Electric R'y.<sup>9</sup> In the hands of Construction Co.<sup>10</sup> In hands of receiver; no report.<sup>11</sup> No stock issued.

*Funded Debt.*

FUNDED DEBT, WISCONSIN.

Mortgage Bonds, Miscellaneous Obligations and Income Bonds, June 30, 1899.

NAME OF COMPANY.	Class of bonds or obligations.	TIME.	
		Date of issue.	When due.
1 Abbotsford & Northeastern.....	C. 1st Mtg.....	Oct. 1, 1889	Oct. 1, 1919
2 Ahnapee & Western.....	1st Mtg. Bonds.....	May 31, 1892	July 1, 1902
3 Ashland Siskiwit.....	Ch. Mtge.....	Jan. 12, 1898	.....
4 Big Falls R'y Co.....	Ch. Mtge.....	Jan. 12, 1898	.....
5 Bayfield Harbor & Great Western.....	} 1st Mtge. Gold.....	Jan. 15, 1897	Jan. 15, 1927
6 Bayfield Transfer R'y.....			
7 Chicago, Milwaukee & St. Paul.....	Mtg. Bond.....	.....	.....
8 Chicago & Northwestern.....	Mtg. Bond.....	.....	.....
9 Chicago, St. P., Minneapolis & Omaha	.....	.....	.....
10 Chicago, Burlington & Northern.....	1st Mtg. Bond.....	.....	.....
11 Chicago, Lake Shore & Eastern.....	1st Mtg. ....	1885	1926
12 Chicago & Lake Superior.....	1st Mtg. ....	July 1, 1894	July 1, 1914
13 Chicago, Madison & Northern.....	1st Mtg. ....	.....	.....
14 Chicago, Wisconsin & Minnesota.....	1st Mtg. &c.....	Sept. 1, 1885	Mch. 1, 1916
15 Chippewa River & Menomonie.....	.....	.....	.....
16 Drummond & Southwestern.....	1st Mtg. Bonds.....	Nov. 2, 1891	Nov. 2, 1921
17 Duluth, South Shore & Atlantic.....	1st Mtg. Bonds.....	.....	.....
18 Duluth Short Line.....	1st Mtg. Bonds.....	Sept. 1, 1886	Sept., 1916
19 Duluth, Superior & Western, Term'n'l	1st Mtg. ....	Aug. 13, 1897	July, 1947
20 Duluth & Wausaukee.....	.....	.....	.....
21 Eastern Railway Co. of Minnesota.....	1st Mtg. Bonds.....	.....	.....
22 Fairchild & North Eastern.....	.....	.....	.....
23 Green Bay & Western.....	Income, debentures	July 1, 1896	.....
24 Hazelhurst & South Eastern.....	.....	.....	.....
25 Iola & Northern.....	.....	.....	.....
26 Glenwood & Northeastern.....	.....	.....	.....
27 Kewaunee, Green Bay & Western.....	1st Mtg. Bonds.....	.....	1821
28 Kickapoo Valley & Northern.....	1st Mtg. ....	Oct. 1, 1890	1800
29 L. Superior Term & Transfer R'y Co.	1st Mtg. Copor. Bds	April, 1899	April, 1909
30 Mattoon R'y Co.....	.....	.....	.....
31 Milwaukee & Lake Winnebago.....	1st Mtg. Bonds.....	.....	.....
32 Milwaukee & Superior.....	Mtg. ....	Feb. 1, 1890	Dec. 1, 1909
33 Marshfield & South Eastern.....	1st & 2nd Mtg.....	Feb. 20, 1896	Feb. 20, 1897
34 Marinette, Tomahawk and Western.....	.....	.....	.....
35 Milwaukee & Wauwatosa.....	.....	.....	.....
36 Minnesota & Wisconsin.....	1st Mtg.....	1896	1927
37 Minneapolis, St. Paul & Ashland.....	.....	.....	.....
38 Minneapolis, St. P. & Sault Ste. Marie	1st Mtg.....	.....	.....
39 Northern Pacific.....	.....	.....	.....
40 Northwestern Coal R'y Co.....	1st Mtg.....	1893	1923
41 Oshkosh Transportation Co.....	.....	.....	.....
42 Packwaukee & Montello.....	1st Mtg.....	October 1881	October 1911
43 Rice Lake, Dallas & Menomonie.....	1st Mtg.....	Dec. 15, 1883	Jan. 1, 1914
44 St. Cloud, Grantsburg & Ashland.....	.....	.....	.....
45 Washburn, Bayfield & Iron River.....	No report—In hand	s of Receiver	.....
46 West Range.....	1st Mtg.....	.....	.....
47 Winona Bridge R'y Co.....	1st Mtg.....	.....	.....
48 Wisconsin & Michigan.....	1st Mtg.....	Sept. 1, 1890	Sept. 1, 1915
49 Whitcomb & Morris.....	1st Mtg.....	Jan. 1, 1895	Jan. 1, 1945
50 Wisconsin Central R. R. Co.....	Mtges.....	.....	.....
51 Wisconsin Central Co.....	.....	.....	.....
52 St. Paul & Duluth.....	Mtgs.....	.....	.....

## Funded Debt.

## FUNDED DEBT, WISCONSIN.

Mortgage Bonds, Miscellaneous Obligations and Income Bonds, June 30, 1899.—Cont.

NAME OF COMPANY.	Amount of authorized issue.	Amount issued.	Amount outstanding.	Cash realized on amount issued.
1 Abbotsford & Northeastern.....	\$112,000 00	112,000 00	112,000 00	112,000 00
2 Ahnapee & Western.....	340,000 00	340,000 00	340,000 00	289,000 09
3 Ashland Siskiwi.....	.....	.....	.....	.....
4 Big Falls R'y Co.....	.....	.....	.....	7,715 49
5 Bayfield Harbor & G't West'n.....	.....	.....	.....	.....
6 Bayfield Transfer R'y.....	1,500,000 00	1,500,000 00	1,500,000 00	1,500,000 00
7 Chicago, Milwaukee & St. Paul	Not fixed.	.....	36,535,947 00	.....
8 Chicago & Northwestern.....	45,648,947 64	45,648,947 64	42,021,224 98	.....
9 Chi., St. Paul, Minn. & Omaha	18,407,969 82	11,623,237 62	11,436,185 22	4,318,897 23
10 Chicago, Burlington & North'n	.....	6,321,500 00	4,312,440 00	.....
11 Chicago, Lake Shore & East'n	130,000 00	130,000 00	130,000 00	.....
12 Chicago & Lake Superior.....	36,000 00	36,000 00	36,000 00	.....
13 Chicago, Madison & Northern	2,712,060 40	2,712,060 40	2,712,060 40	2,712,090 40
14 Chicago, Wis. & Minnesota.....	2,766,283 35	2,766,283 35	2,666,283 35	366,286 35
15 Chippewa River & Menomonie	.....	.....	.....	.....
16 Drummond & South Western.....	50,000 00	50,000 00	50,000 00	50,000 00
17 Duluth, South Shore & Atlan'c	5,680,000 00	4,701,400 00	4,600,000 00	12,552,000 00
18 Duluth Short Line.....	49,285 75	49,295 75	49,295 75	50,602 11
19 Duluth, Sup. & West'n Term'l	500,000 00	500,000 00	500,000 00	500,000 00
20 Dunbar & Wausaukee.....	.....	.....	.....	.....
21 Eastern R'y Co. of Minnesota.....	1,510,000 00	6,666,666 6	6,666,666 66	652,513 24
22 Fairchild & Northeastern.....	.....	.....	.....	.....
23 Green Bay & Western.....	7,600,000 00	7,600,000 00	7,600,000 00	.....
24 Hazelhurst & South Eastern.....	.....	.....	.....	.....
25 Iola & Northern.....	.....	.....	.....	.....
26 Glenwood & Northeastern.....	.....	.....	.....	.....
27 Kewaunee, Green Bay & West'n	408,000 00	408,000 00	408,000 00	.....
28 Kickapoo Valley & Northern.....	1,600,000 00	600,000 00	600,000 00	.....
29 L. S'p'r Term. & Trans'r R'y Co	500,000 00	195,000 00	195,000 00	197,279 25
30 Mattoon R'y Co.....	.....	.....	.....	.....
31 Milwaukee & Lake Winnebago.	3,272,000 00	3,219,050 00	3,217,475 00	1,008,175 00
32 Milwaukee & Superior.....	233,600 00	168,000 00	168,000 00	168,000 00
33 Marshfield & Southeastern.....	1,950,000 00	450,000 00	450,000 00	.....
34 Marinette, Tomaw'k & West'n.....	.....	.....	.....	.....
35 Milwaukee & Wauwatosa.....	.....	.....	.....	.....
36 Minnesota & Wisconsin.....	585,000 00	585,000 00	585,000 00	.....
37 Minneapolis, St. P. & Ashland.	.....	.....	.....	.....
38 Minn., St. P. & S. Ste. Marie.....	12,857,713 00	10,058,530 00	8,404,630 00	7,151,085 56
39 Northern Pacific.....	3,990,000 00	.....	3,338,139 60	.....
40 Northwestern Coal R'y Co.....	2,000,000 00	1,000,000 00	944,000 00	.....
41 Oshkosh Transportation Co.....	.....	.....	.....	.....
42 Packwaukee & Montello.....	81,000 00	81,000 00	81,000 00	81,000 00
43 Rice Lake, Dallas & Menom'ie	60,000 00	60,000 00	60,000 00	.....
44 St. Cloud, Gr'n'sb'g & Ashland	.....	.....	.....	.....
45 Washburn, Br'ld & Iron River	.....	.....	.....	.....
46 West Range.....	.....	.....	.....	.....
47 Winona Bridge R'y Co.....	200,000 00	192,000 00	192,000 00	192,000 00
48 Wisconsin & Michigan.....	490,716 00	490,716 00	490,716 00	.....
49 Whitcomb & Morris.....	.....	.....	.....	.....
50 Wisconsin Central R. R. Co.....	22,600,000 00	11,080,099 01	10,578,509 01	4,589,009 01
51 Wisconsin Central Co.....	27,072,500 00	20,879,679 10	20,614,845 38	4,668,895 02
52 St. Paul & Duluth.....	554,799 00	311,199 00	299,597 55	310,481 44

*Funded Debt.*

FUNDED DEBT, WISCONSIN.

Mortgage Bonds, Miscellaneous Obligations and Income Bonds, June 30, 1899.

NAME OF COMPANY.	INTEREST.			
	Rate.	When payable.	Amount account during year.	Amount paid during year.
1 Abbotsford & Northeastern.....	Pr.ct.	Oct. & Apr. 1st	\$6,720 00	\$6,720 00
2 Ahnapee & Western.....	6	Semi-annually.	20,405 00	10,200 00
3 Ashland Siskiwit.....				
4 Big Falls R'y Co.....	7			540 08
5 Bayfield Harbor & Great Western.....				
6 Bayfield Transfer R'y.....	5	Jan. & July 1st	75,000 00	
7 Chicago, Milwaukee & St. Paul.....			1,847,930 10	1,880,513 91
8 Chicago & Northwestern.....			2,216,191 18	2,236,238 60
9 Chi., St. P., Minneapolis & Omaha.....			631,200 43	636,479 49
10 Chicago, Burlington & Northern.....	5 & 6	A. & O.....	348,471 50	357,005 04
11 Chicago, Lake Shore & Eastern.....	6	Jan. and July.	7,800 00	7,800 00
12 Chicago & Lake Superior.....	6			
13 Chicago, Madison & Northern.....	5, 5, 6	6 & 12	135,603 02	135,603 02
14 Chicago, Wisconsin & Minnesota.....	5, 8, 6	3 & 9	157,481 07	159,061 64
15 Chippewa River & Menomonie.....				
16 Drummond & South Western.....	6	Semi annually..	3,000 00	3,000 00
17 Duluth, South Shore & Atlantic.....			171,940 00	171,940 00
18 Duluth Short Line.....	5	March & Sept.	2,464 79	2,464 79
19 Duluth, Superior & West'n Term'l.....	4	Jan. and July	20,000 00	20,000 00
20 Dunbar & Wausaukee.....				
21 Eastern Railway Co. of Minnesota.....			34,800 00	34,888 88
22 Fairchild & Nortn Eastern.....				
23 Green Bay & Western.....	2½		15,000 00	15,000 00
24 Hazelhurst & Southeastern.....				
25 Iola & Northern.....				
26 Glenwood & Northeastern.....				
27 Kewaunee, Green Bay & Western.....	5	June and Dec.	20,400 00	20,400 00
28 Kickapoo Valley & Northern.....	5	April and Oct.	30,000 00	10,080 00
29 L. Superior T'm'l & Trans'r R'y Co.....	6	Annually.....	11,700 09	
30 Matoon R'y Co.....				
31 Milwaukee & Lake Winnebago.....			182,944 11	182,955 00
32 Milwaukee & Superior.....	6	Dec. and June	10,080 00	10,080 00
33 Marshfield & South Eastern.....	6	Annually.....	27,000 00	
34 Marinette, Tomahawk & Western.....				
35 Milwaukee & Wauwatosa.....				
36 Minnesota & Wisconsin.....	2½	July.....	4,875 00	5,225 00
37 Minneapolis, St. Paul & Ashland.....				
38 Minne's, St. P. & Sault Ste. Marie.....			328,241 76	328,486 36
39 Northern Pacific.....			127,654 73	129,033 65
40 Northwestern Coal R'y Co.....	5	May and Nov.	47,520 78	46,210 40
41 Oshkosh Transportation Co.....				
42 Packwaukee & Montello.....	6	April and Oct.	5,040 00	5,040 00
43 Rice Lake, Dallas & Menomonie.....	6	Jan. and July	3,600 00	
44 St. Cloud, Grand sburg & Ashland.....				
45 Washburn, Bayfield & Iron River.....				
46 West Range.....				
47 Winona Bridge R'y Co.....	5	March & Sept.	96,000 00	96,000 00
48 Wisconsin & Michigan.....	5	Jan. and July	24,535 00	2,773 50
49 Whitcomb & Morris.....				
50 Wisconsin Central R. R. Co.....			274,200 47	422,700 00
51 Wisconsin Central Co.....			695,051 86	58,400 00
52 St. Paul & Duluth.....			10,319 17	10,116 17

## Funded Debt.

## FUNDED DEBT, WHOLE LINE.

Mortgage Bonds, Miscellaneous Obligations, and. Income Bonds, June 30, 1899.

NAME OF COMPANY.	Class of bonds or obligations.	TIME.	
		Date of issue.	When due.
1 Abbottsford & Northeastern.....	Com 1st Mtg.....	Oct. 1, 1899	Oct. 1, 1919
2 Ahnapee & Western.....	1st Mtg. Bonds.....	May 31, 1892	July 1902
3 Ashland Siskiwit.....	.....	.....	.....
4 Big Falls R'y Co.....	Chat. Mtg.....	Jan. 12, 1898	Jan. 12, 1899
5 Bayfield Har. & Great Western.....	.....	.....	.....
6 Bayfield Transfer R'y.....	1st Mtg.....	Jan. 15, 1897	Jan. 15, 1927
7 Chicago, Milwaukee & St. Paul.....	Mtgs, etc.....	.....	.....
8 Chicago & Northwestern.....	Mtg. Bonds, etc.....	.....	.....
9 Chi., St. P., Minneap. & Omaha.....	2d Mtg.....	.....	.....
10 Chicago, Burlington & Northern.....	1st Mtg.....	.....	.....
11 Chicago, Lake Shore & Eastern.....	1st Mtg.....	.....	.....
12 Chicago & Lake Superior.....	1st Mtg.....	.....	.....
13 Chicago, Madison & Northern.....	1st Mtg.....	.....	.....
14 Chicago, Wisconsin & Minnesota.....	1st Mtg. etc.....	.....	.....
15 Chippewa River & Menomonic.....	1st Mtg. Bond.....	Nov. 2, 1891	Nov. 2, 1921
16 Drummond & South Western.....	1st Mtg. Bond.....	Nov. 2, 1891	Nov. 2, 1921
17 Duluth, South Shore & Atlantic.....	Mtg. Bonds.....	.....	.....
18 Duluth Short Line.....	1st Mtg. Bonds.....	Sept. 1, 1886	Sept. 1, 1916
19 Duluth, Sup. & West'n Terminal.....	1st Mtg.....	Aug. 13, 1897	July 1, 1947
20 Dunbar & Wausakee.....	.....	.....	.....
21 Eastern R'y Co. of Minnesota.....	1st Mtg. Bonds.....	.....	.....
22 Fairchild & North eastern.....	.....	.....	.....
23 Green Bay & Western.....	A. & B. Debt. & Income.....	July 1, 1896	When sold..
24 Hazelhurst & South Eastern.....	.....	.....	.....
25 Iola & North rn.....	.....	.....	.....
26 Glenwood & Northeastern.....	.....	.....	.....
27 Kewaunee, Green Bay & Western.....	1st Mtg. Bonds.....	.....	1891 1921
28 Kickapoo Valley & Northern.....	1st Mtg.....	Oct. 1, 1890	1900
29 Lake Sup. Term. & Trans. R'y Co.....	1st Mtg. Coupon Bds.....	Apr. 1889	Apr. 1909
30 Mattoon R'y Co.....	.....	.....	.....
31 Milwaukee & Lake Winnebago.....	1st Mtg. and others.....	.....	.....
32 Milwaukee & Superior.....	Mtg. Bonds.....	Feb. 1, 1890	Dec. 1, 1909
33 Marshfield & South Eastern.....	1st Mtg. and 2d.....	Feb. 20, 1896	Feb. 20, '97
34 Marinette, Tomahawk & West'n.....	.....	.....	.....
35 Milwaukee & Wauwatosa.....	.....	.....	.....
36 Minnesota & Wisconsin.....	1st Mtg. and Income.....	1896	1924
37 Minneapolis, St. Paul & Ashland.....	.....	.....	.....
38 Minneap., St. P. & Sault Ste. M.....	Mtg. Bonds, etc.....	.....	.....
39 Northern Pacific.....	Mtg. Bonds.....	.....	.....
40 Northwestern Coal R'y Co.....	1st Mtg. Bonds.....	1893	1923
41 Oshkosh Transportation Co.....	.....	.....	.....
42 Packwaukee & Montello.....	1st Mtg.....	Oct. 1, 1881	Oct. 1, 1911
43 Rice Lake, Dallas & Menomonic.....	1st Mtg. Bonds.....	Dec. 15, 1893	Jan. 1, 1914
44 St. Cloud, Grantsburg & Ashland.....	.....	.....	.....
45 Washburn, Bayfield & Iron River.....	.....	.....	.....
46 West Range.....	.....	.....	.....
47 Winona Bridge R'y Co.....	1st Mtg. Bonds.....	Sept. 1, 1890	Sept. 1, 1915
48 Wisconsin & Michigan.....	1st Mtg.....	Jan. 1, 1895	Jan. 1, 1945
49 Whitcomb & Morris.....	.....	.....	.....
50 Wisconsin Central R. R. Co.....	Mtgs.....	.....	.....
51 Wisconsin Central Co.....	Mtg. Bonds.....	.....	.....
52 St Paul & Duluth.....	Mtg. Bonds.....	.....	.....

*Funded Debt.*

FUNDED DEBT, WHOLE LINE.

Mortgage Bonds, Miscellaneous Obligations, and Income Bonds, June 30, 1899.

Name of Company.	Amount of authorized issue.	Amount issued.	Amount outstanding.	Cash realized on amount issued.
1 Abbottsford & Northeastern.....	\$112,000	\$112,000 00	\$112,000 00	\$112,000 00
2 Ahnapee & Western.....	340,000	340,000 00	340,000 00	289,000 00
3 Ashland & Siskiwit.....				7,715 49
4 Big Falls R'y Co.....				
5 Bayfield Harb. & Great West'n } 6 Bayfield Transfer R'y..... }	1,500,000	1,500,000 00	1,500,000 00	1,500,000 00
7 Chicago, Milwaukee & St. Paul } 8 Chicago & Northwestern..... }	Not fixed.			
9 Chi., St. P., Minneap. & Omaha	310,852,000	146,289,000 00	134,645,000 00	92,308,700 31
10 Chicago, Burlington & Northern	142,229,800	26,671,800 00	26,235,800 00	9,908,000 08
11 Chicago, Lake Shore & Eastern	13,965,000	13,790,000 00	8,822,000 00	
12 Chicago & Lake Superior	3,230,000	3,230,000 00	3,230,000 00	
13 Chicago & Madison & Northern	36,000	36,000 00	36,000 00	
14 Chi., Wisconsin & Minnesota	6,870,000	6,870,000 00	6,870,000 00	6,870,000 00
15 Chippewa River & Menomonic	4,300,000	4,300,000 00	4,200,000 00	400,000 00
16 Drummond & South Western	50,000	50,000 00	50,000 00	50,000 00
17 Duluth, South Shore & Atlantic	50,000	50,000 00	50,000 00	50,000 00
18 Duluth Short Line	28,400,000	23,507,000 00	23,000,000 00	
19 Duluth, Sup. & West'n Termin'l	500,000	500,000 00	500,000 00	513,250 00
20 Dunbar & Wausaukee	500,000	500,000 00	500,000 00	500,000 00
21 Eastern R'y Co. of Minnesota	20,000,000	9,700,000 00	9,700,000 00	9,406,412 50
22 Fairchild & North Eastern				
23 Green Bay & Western	7,600,000	7,600,000 00	7,600,000 00	
24 Hazellurst & South Eastern				
25 Iola & Northern				
26 Glenwood & Northeastern				
27 Kewaunee, Green Bay & West'n	408,000	408,000 00	408,000 00	
28 Kickapoo Valley & Northern	1,600,000	600,000 00	600,000 00	
29 L. Sup. Term'l & Trans. R'y Co	500,000	195,000 00	195,000 00	197,211 25
30 Mattoon R'y Co.....				
31 Milwaukee & Lake Winnebago	3,272,000	3,219,050 00	3,217,475 00	3,219,050 00
32 Milwaukee & Superior	233,800	168,000 00	168,000 00	168,000 00
33 Marshfield & South Eastern	1,950,000	450,000 00	450,000 00	
34 Marinette, Tomahawk & West'n				
35 Milwaukee & Wauwatosa				
36 Minnesota & Wisconsin	585,000	585,000 00	585,000 00	
37 Minneapolis, St. P. & Ashland				
38 Minneap., St. P. & Sault Ste. M	49,579,000	36,680,000 00	30,279,000 00	26,245,035 21
39 Northern Pacific	190,000,000		160,387,600 00	
40 Northwestern Coal R'y Co	2,000,000	1,000,000 00	944,000 00	
41 Oshkosh Transportation Co				
42 Packwaukee & Montello	84,000	84,000 00	84,000 00	84,000 00
43 Rice L., Dallas & Menomonic	60,000	60,000 00	60,000 00	
44 St. Cloud, Grantsburg & Ashld				
45 Washburn, Bayfield & Iron Riv				
46 West Range				
47 Winona Bridge R'y Co	400,000	384,000 00	384,000 00	384,000 00
48 Wisconsin & Michigan	951,000	951,000 00	951,000 00	
49 Whitcomb & Morris				
50 Wisconsin Central R. R. Co	22,600,000	11,089,009 01	10,578,509 01	1,589,009 01
51 Wisconsin Central Co	38,675,000	29,828,113 00	23,739,279 67	4,668,895 02
52 St. Paul & Duluth	9,110,000	5,110,000 00	4,919,500 00	5,098,217 50



## Funded Debt.

## FUNDED DEBT, WHOLE LINE.

Mortgage Bonds, Miscellaneous Obligations, and Income Bonds, June 30, 1899.

NAME OF COMPANY.	INTEREST.			
	Rate.	When payable.	Amount accrued during year.	Amount paid during year.
1 Abbotsford & Northeastern .....	6	Oct. 1, Apr 1.	\$6,720 00	\$6,720 00
2 Ahnapee & West. rn .....	6	Semi-annually	20,400 00	10,200 00
3 Ashland & Sisk wit .....				510 08
4 Big Falls R'y Co. ....	7			
5 Bayfield Harbor & Great West'rn }				
6 Bayfield Transfer R'y .....	5	Jan. 15, July 15	75,000 00	
7 Chicago, Milwaukee & St. Paul ..			6,890,119 69	7,011,610 42
8 Chicago, & Northwestern .....			6,432,701 81	6,945,417 29
9 Chi., St. P. Minneapolis & Omaha			1,448,246 00	1,460,150 25
10 Chicago, Burlington & Northern ..			153,615 00	669,410 96
11 Chicago, Lake Shore & Eastern ..			108,700 00	168,700 00
12 Chicago & Lake Superior .....	6			
13 Chicago, Madison & Northern .....	5	June, Dec. ....	343,500 00	343,500 00
14 Chicago, Wisconsin & Minnesota ..			216,633 31	251,948 31
15 Chipewa River & Menomonie .....	6	Semi-annually	3,000 00	3,000 00
16 Drummond & South Western .....	6	Semi-annually	3,000 00	3,000 00
17 Duluth, South Shore & Atlantic ..			859,700 00	854,700 00
18 Duluth Short Line .....	5	Mch., Sept. ....	25,000 00	25,000 00
19 Duluth, Superior & West'rn Term'l	4	Jan., July ....	20,000 00	20,000 00
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minnesota .....		Apr., Oct. ....	435,000 00	436,060 00
22 Fairchild & North Eastern .....				
23 Green Bay & Western .....	2		15,000 00	15,000 00
24 Hazelhurst & South Eastern .....				
25 Iola & Northern .....				
26 Glenwood & Northeastern .....				
27 Kewaunee, Green Bay & Western ..	5	Dec., June ....	20,400 00	20,400 00
28 Kickapoo Valley & Northern .....	5	Apr., Oct. ....	30,000 00	
29 Lake Sup. Term'l & Transf. R'y Co	6	Apr., Oct. ....	11,700 00	
30 Mattoon R'y Co. ....				
31 Milwaukee & Lake Winnebago .....	6	Dec., June ....	182,944 11	182,955 00
32 Milwaukee & Superior .....			10,080 00	10,080 00
33 Marshfield & South Eastern .....		Annually .....	27,000 00	
34 Marinette, Tomrhawk & Western ..				
35 Milwaukee & Wauwatosa .....				
36 Minnesota & Wisconsin .....	2½	July .....	4,875 60	5,225 00
37 Minneapolis, St. Paul & Ashland ..				
38 Minneapolis, St. P. & Sault Ste. M.	4	Jan., July .....	1,174,480 00	1,228,220 00
39 Northern Pacific .....			6,079,233 33	6,144,459 58
40 Northwestern Coal R'y Co. ....	5	May, Nov. ....	47,520 78	46,210 40
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....	6	Apr., Oct. ....	5,040 00	5,040 00
43 Rice Lake, Dallas & Menomonie ..	6	Jan., July .....	3,600 00	
44 Sr. Cl. ud, Grantsburg & Ashland ..				
45 Washburn, Bayfield & Iron River ..				
46 West Range .....				
47 Winona Bridge R'y Co. ....	5	Mch., Sept. ....	19,200 00	19,200 00
48 Wisconsin & Michigan .....	5	Jan., July .....	47,550 00	5,375 00
49 Whitcomb & Morris .....				
50 Wisconsin Central R'y Co. ....	5		274,200 47	422,700 00
51 Wisconsin Central Co. ....			819,615 64	58,389 27
52 St. Paul & Duluth .....			169,444 44	166,111 10

*Funded Debt.*

FUNDED DEBT — Continued.

Equipment Trust Obligation. — A General Statement.

Name of company.	Series or other designation.	Date of issue.	Terms.	No. pay-ments
Duluth, S. Shore & Atlantic.	Car Trust Notes.....	Feb. 6, 1894...	5 to 10 years..	120
Eastern Ry. Co. of Minn.....	Car Trust Notes.....	Feb. 3, 1896...	Feb. 1, 1906...	14
Minn., St. P. & S. Ste. Marie	Victoria Rolling St'k Wells, French Co..	Sept., 1893 to June, 1898...	5 to 10 years..	100
Wisconsin & Michigan.....	U. S. Car Co., &c.....	Oct 19, 1895 to June 19, 1896	2 to 6 years..	46
Wisconsin Central R. R. Co..	Haskell & Barker Co	June 1, 1897 ..	5 years.....	60
Wisconsin Central Co.....	Haskell & Barker Co	Mar. 16, 1898	1 to 5 years...	73
St. Paul & Duluth.....	Car Trust Series A...	Aug. 15, 1898..	5 yrs, monthly payments...	60

Name of company.	Equipment covered.	Explanatory remarks.
Duluth, S. Shore & Atlantic	2,050 box cars.....	Last payment July 1, 1899.
Eastern Ry. Co. of Minn....	600 ore cars.....	Balance due \$25,616.18.
Minn., St. P. & S. Ste. Marie	2,000 box cars, 20 cabooses, 25 locomotives.....	Represented by semi-annual monthly notes.
Wisconsin & Michigan....	500 box cars, 1 locomotive..	
Wisconsin Central R. R. Co.	500 box cars.....	
Wisconsin Central Co.....	500 box cars, 10 locomotives	Final payment made Mar. 16, 1899.
St. Paul & Duluth.....	200 box cars.....	Title remains in trustee un- til full payment.

FUNDED DEBT — Continued — WISCONSIN.

Equipment Trust obligations June 30, 1899 — B. Statement of account.

NAME OF COMPANY.	Series or other designation.	Cash paid on delivery of equipment.	DEFERRED PAYMENT — PRINCIPAL.	
			Original amount.	Amount outstanding.
Chicago & Northwestern...			\$10,496,177 64	\$9,955,015 29
Duluth, S. Sh. & Atl. ntic..	Car Trust Notes....	\$14,323 30	115,818 46	97,620 24
Eastern Ry. Co. of Minn....	Car Trust Notes....			16,449 21
Minn., St. P. & S. Ste. Marie	Victoria Rolling St'k Co., Wells French Co	47,360 51	360,137 84	186,743 80
Wisconsin & Michigan....	U. S. Car Co., &c....	30,145 61	89,826 00	51,537 29
Wisconsin Central R. R. Co	Haskell & Barker Car Co.....		22,763 19	128,453 79
Wisconsin Central Co.....	do.....	8,873 60	2,878,786 10	2,714,680 25
St. Paul & Duluth.....	Car Trust Series A...	997 54	6,400 35	5,546 97

DEFERRED PAYMENTS — INTEREST.

NAME OF COMPANY.	Original amount.	Amount outstanding.	Amount accrued during year.	Amount paid during year.	Rate.
Minn., St. P. & S. Ste. Marie	\$7,305 87	\$5,401 85	1,964 03	1,964 03	5 per ct.
Wisconsin & Michigan....	15,718 12	8,927 77	6,790 43	9,290 06	6 per ct.
Wisconsin Central R. R. Co.	38,938 21	23,030 36	7,466 93	7,466 95	6 per ct.
Wisconsin Central Co.....	33,056 00	18,984 28	133,088 06	7,613 78	6 per ct.

*Assets and Liabilities.*

Current liabilities accrued to and including June 30, 1899.

Name of Company.	Loans and bills payable.	Audited vouchers and accounts.	Wages and salaries.	Net traffic balances due to other companies.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western.....	\$64,975 48		\$1,120 00	\$982 12
3 Ashland Siskiwit.....				
4 Big Falls R'y Co.....				
5 Bayfield Harbor & G. W..				
6 Bayfield Transfer R'y.....	93,940 33	\$395 91		
7 Chicago, Milwaukee & St. P.	870,540 79		1,518,444 52	8,878 82
8 Chicago & Northwestern.....		1,559,233 75	1,621,740 56	253,191 93
9 Chicago, St. P., M. & O.....		366,370 32	324,579 66	185,767 35
10 Chicago, Burlingt'n & O'ey	3,061,076 09	4 33	545 59	223 43
11 Chicago, L. Shore & East'n	125,381 32		47,964 51	
12 Chicago & Lake Superior.....		354 55		
13 C., M. & N. (Ill. Central).....		3,724,938 80		
14 Chicago, Wis. & Minnesota		478 14		
15 Chippewa Riv. & Menom.....				
16 Drummond & South West'n	109,757 44	1,124 07		
17 Duluth, So. Shore & Atlantic	1,773,435 18	434,466 20	127,007 23	
18 Duluth Short Line.....				
19 Duluth, Sup. & Western.....		26,903 07	4,031 15	
20 Dunbar & Wausaukee.....				
21 Eastern R'y Co. of Minn.....		619,805 36	125,416 95	
22 Fairchild & North Eastern.....				
23 Green Bay & Western.....	143,550 15	15,122 35	16,489 27	151 02
24 Hazelhurst & South Eastern.....				
25 Iola & Northern.....		7 50	234 20	65 52
26 Glenwood & Northeastern.....				
27 Kewaunee, G. Bay & West'n		710 95	1,631 22	
28 Kickapoo Valley & North'n		4,004 01	7,437 71	1,642 65
29 Lake Sup. T. & T. R'y Co.		3,230 10		90
30 Mattoon R'y Co.....				
31 Milwaukee & L. Winnebago	72,899 81			
32 Milwaukee & Superior.....	91,291 11	1,967 00	1,939 90	
33 Marshfield & South Eastern.....		2,649 32		
34 Marinette, Tom. & Western.....				1,738 57
35 Milwaukee & Wauwatosa.....				
36 Minnesota & Wisconsin.....				2,548 33
37 Minneapolis, St. P. & Ashl'd				
38 M., St. P. & Sault Ste. Marie	1,285,241 05	366,978 85	220,169 88	
39 Northern Pacific.....		1,746,063 05	1,225,410 17	
40 Northwestern Coal R'y Co.....	1,500 00	12,841 78	6 67	
41 Oshkosh Transportation Co.....				
42 Packwaukee & Montello.....				
42 Rice Lake, Dallas & Menom.	4,883 33	4,672 60	1,560 00	
44 St. Cloud, G'tsburg & Ashl'd				
45 †Wash'b'n, Bayfield & I. Riv.	21,117 06		55,140 52	
46 West Range.....				
47 Winona Bridge R'y Co.....				
48 Wisconsin & Michigan.....	231,691 29	26,022 59	4,122 44	
49 Whitcomb & Morris.....				
50 †Wisconsin Central R. R. Co.	27,311 52	144,000 60	104,608 73	15,445 11
51 †Wisconsin Central Co.....	457,358 00	108,499 05	104,608 73	14,445 11
52 Hawth'n, Nebacamon & Sup.				
53 St. Paul & Duluth.....		138,454 76	71,186 32	

†Receiver's certificates, \$400,000 00.

\*Receiver's certificates, \$159,500 00.

†Receiver's certificates, \$661,000 00.

‖Receiver's certificates, \$2,108,000 00.

*Assets and Liabilities.*

Current liabilities accrued to and including June 30, 1899.

Dividends not called for.	Matured interest coupons unpaid inc. coupons due July 1.	Rentals due July 1, 1899.	Miscellaneous.	Balance cash assets.	Total.	No.
	\$30,600 00			\$11,136 99	\$11,136 99	1
					97,677 60	2
				37 30	37 30	3
	184,375 00					4
	3,270,357 10		\$24 65		278,735 89	5
\$52,544 58			212,716 03	1,298,748 32	7,232,230 16	6
10,822 75	238,735 52	\$6,000 00	30,750 00	1,990,801 53	6,990,801 53	7
395,574 00	74,122 00	9,692 27	549,745 34	1,523,456 16	3,429,397 10	8
			1 33		3,061,860 72	9
		704,122 48	208,409 15		1,085,867 46	10
			8,222 19		8,576 74	11
	9,412 50			253,469 40	3,724,938 80	12
			57,506 23		263,360 04	13
		04			57,506 23	14
					110,881 55	15
	10,000 00			8,333 33	2,334,903 61	16
				41,452 31	8,333 33	17
	3,940 00				82,386 53	18
			20 07	1,102,328 28	1,851,510 61	19
			21,871 84		197,184 63	20
			230 32	523 67	1,061 21	21
	525 00		1,585 45			22
	120,000 00		19,694 63	26,960 42	30 413 04	23
			5,492 32		562,779 01	24
	55,955 00				8,723 32	25
	27,000 00				123,854 81	26
			243,193 54		95,198 01	27
			467 94	4,585 67	29,649 32	28
	516,160 00		76,494 26	446,291 21	244,982 11	29
1,550,000 00	1,112,615 25	529,911 28	111,337 57	2,235,903 59	7,601 94	30
			52 74	1,305 86	2,911,335 25	31
				3,756 05	8,511,241 01	32
	19,650 00				15,707 05	33
				8,063 50	3,756 05	34
		510 43			38,829 46	35
					236,268 01	36
	148,750 00	2,254 98	267 40			37
		1,260 00			413,108 70	38
				2,793,910 89	953,625 96	39
			270 44		2,793,910 89	40
2,671 00	1,367 50		36,945 11	521,000 39	270 44	41
					771,625 08	42
						43
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*Assets and Liabilities.*

Cash and current assets available for payment of liabilities June 30, 1899.

Name of Company.	Cash.	Bills receivable.	Due from agents, conductors and paymasters.	Net traffic balances due from other companies.
1 Abbotsford & Northeastern	\$11,136 99			
2 Ahnapee & Western	936 22		\$20 00	
3 Ashland Siskiwit				
4 Big Falls R'y Co.	796 84			
5 Bayfield Harbor & G. W.				
6 Bayfield Transfer R'y	176 42			
7 Chicago, Milwaukee & St. P.	6,377,491 81		374,304 54	
8 Chicago & Northwestern	4,056,419 89	\$139,216 53	2,154,650 80	
9 Chicago, St. P., M. & O.	2,277,161 70	246 35	352,522 68	200,245 08
10 Chicago, Burlington & Q'cy		5,116 43		
11 Chicago, L. Shore & Eastern	68,422 88		256,739 25	76,199 22
12 Chicago & Lake Superior			562 67	
13 C., M. & N. (Ill. Central)		8,939 79		
14 Chicago, Wisconsin & Minn.	182,049 42	35,000 00		
15 Chppewa Riv. & Menomonie		450 00		
16 Drummond & South Western			55,223 42	6,238 24
17 Duluth, So. Shore & Atlantic	30,235 96			
18 Duluth Short Line				
19 Duluth, Sup. & W. Term.	46,998 30	35,388 23		
20 Dunbar & Wausaukee			4,588 60	
21 Eastern R'y Co. of Minn.	1,130,272 65	12,000 00		
22 Fairchild & North Eastern			13,287 65	
23 Green Bay Western	32,322 65			2,181 46
24 Hazelhurst & South Eastern	3,155 61			
25 Iola & Northern	923 51		78 27	
26 Glenwood & Northeastern				1,666 67
27 Kewaunee, G. Bay & West'n	5,205 40		1,684 25	
28 Kickapoo Valley & Northern	8,113 86		200 00	90
29 Lake Sup. T. & T. R'y Co.	4,853 68			
30 Mattoon R'y Co.				
31 Milwaukee & L. Winnebago.	20,254 80		636 35	479 69
32 Milwaukee & Superior				10,918 86
33 Marshfield & South Eastern	6,804 65		25,09	1,789 42
34 Marinette, Tom. & Western	2,219 44			
35 Milwaukee & Wauwatosa			2,787 28	207 51
36 Minnesota & Wisconsin	4,294 86			
37 Minneapolis, St. P. & Ash'd				100,606 55
38 M., St. P. & Sault Ste. M.	2,280,888 01	9,628 14	311,506 58	44,022 24
39 Northern Pacific	6,742,715 34	44,796 34	482,538 56	
40 Northwestern Coal R'y Co.	792 93			
41 Oshkosh Transportation Co.	3,756 05			
42 Packwaukee & Montello			387 97	212 82
43 Rice Lake, Dallas & Menom.	119 95			
44 St. Cloud, Gr'tsburg & Ash'd				
45 Washburn, Bayfield & I. Riv.	56,857 95			
46 West Range				
47 Winona Bridge R'y Co.			10,614 78	
48 Wisconsin & Michigan				
49 Whitcomb & Morris	983 39		75,438 26	
50 Wisconsin Central R. R. Co.	166,126 86		189,721 59	65,332 80
51 Wisconsin Central Co.		36 53		
52 Hawthorn, Nebag'm'n & Sup			59,288 90	38,460 75
53 St. Paul & Duluth	633,653 60	23,950 75		

*Assets and Liabilities.*

Cash and current assets available for payment of liabilities June 30, 1899.

Due from solvent companies and individuals.	Other cash assets. (Ex. material and supplies.)	Due from U. S. government.	Balance.— Current liabilities.	Total.	Material and supplies on hand.	No.
\$819 16			\$95,902 22	\$11,136 99		1
				97,677 60	\$1,850 00	2
			37 30	834 14		3
						4
						5
1,479 02			277,080 45	278,735 89	5 00	6
174,107 60		\$306,316 21		7,232,230 16	2,467,793 88	7
276,340 68		364,173 63		6,990,801 53	1,786,674 06	8
	\$599,131 29			3,429,307 10	577,568 95	9
20,608 57			3,036,135 72	3,061,860 72	110,532 19	10
454,246 04			230,260 07	1,085,867 46	62,677 14	11
628 32	43 39		7,341 86	8,576 74		12
3,067 14			3,712,931 87	3,724,938 80		13
46,310 62				263,360 04		14
43,747 99			13,758 24	57,506 23		15
				450 00	127 74	16
175,816 52			2,067,394 47	2,334,908 61	147,996 34	17
8,333 33				833 33		18
				82,386 53		19
						20
694,487 37	10,161 99			1,851,510 61	192,689 68	21
						22
10,332 24	92,777 31		48,494 78	197,184 63	3,557 49	23
48 30				5,385 37		24
59 43				1,061 21	506 00	25
						26
3,764 23	19,776 74			30,413 04		27
99 16			542,881 74	552,779 01	1,027 68	28
	815 94		2,852 86	8,723 28	237 33	29
						30
8,985 02			99,614 99	128,854 81		31
11,116 09			82,965 88	95,198 01	1,951 37	32
			11,925 81	29,649 32	668 55	33
7,725 00			233,223 16	244,982 11		34
						35
312 29				7,601 94	500 00	36
						37
208,705 97				2,411,335 25	377,982 39	38
1,197,163 53				8,511,241 01	1,763,216 20	39
13,837 05	1,077 07			15,777 05	5,354 02	40
				3,756 05		41
5,423 14	32,600 00			38,320 46	775 00	42
						43
			179,410 06	236,263 01		44
						45
						46
61,218 19			341,875 73	413,108 70		47
						48
515,455 66			196,605 18	953,625 96	187,226 01	49
			2,538,189 97	2,793,610 89	187,726 00	50
270 44				270 44		51
4,535 87	11,735 21			771,625 08	86,301 45	52
						53

*Assets and Liabilities.*

Recapitulation, Wisconsin and whole line: A. For mileage owned by road making report June 30, 1899.

NAME OF COMPANY.	WISCONSIN.		
	Total amount outstanding	Apportionment.	
		To railroads	To other properties.
1 Abbotsford & Northeastern .....	\$232,000 00	\$232,000 00	
2 Ahnapee & Western .....	877,177 60	877,177 60	
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....	1,000 00		
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....	4,500,000 00	4,500,000 00	
7 Chicago, Milwaukee & St. Paul .....	58,667,542 00	58,667,542 00	
8 Chicago & Northwestern .....	64,361,342 13	64,335,975 11	\$26,317 02
9 Chicago, St. Paul, Minneapolis & Omaha .....	27,109,395 83	27,109,395 83	
10 Chicago, Burlington & Northern .....	9,522,540 00	9,522,540 00	
11 Chicago, Lake Shore & Eastern .....	230,000 00	230,000 00	
12 Chicago & Lake Superior .....	61,341 86		
13 Chicago, Madison & Northern .....	2,731,798 88	2,731,798 88	
14 Chicago, Wisconsin & Minnesota .....	4,266,286 35	4,266,286 35	
15 Chippewa River & Menomonie .....	57,506 23		
16 Drummond & South Western .....	170,881 55		
17 Duluth South Shore & Atlantic .....			
18 Duluth Short Line .....	108,450 65	108,450 65	
19 Duluth, Superior & Western .....	750,500 00	750,000 00	
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....			
22 Fairchild & North Eastern .....			
23 Green Bay & Western .....	10,100,000 00	10,100,000 00	
24 Hazelhurst & South Eastern .....			
25 Iola & Northern .....	71,400,00	71,400 00	
26 Glenwood & Northeastern .....			
27 Kewanee, Green Bay & Western .....	1,072,950 00	1,072,950 00	
28 Kickapoo Valley & Northern .....	738,000 00	738,000 00	
29 Lake Sup'r Terminal & Transfer R'y Co. ....	297,922 32	297,922 32	
30 Iola & Northern .....	71,400 00	71,400 00	
31 Milwaukee & Lake Winnebago .....	5,517,475 00	5,517,475 00	
32 Milwaukee & Superior .....	388,198 01	388,198 01	
33 Marshfield & South Eastern .....	900,000 00	900,000 00	
34 Marinette, Tomahawk & Western .....	406,482 11	406,482 11	
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	640,000 00		
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	13,489,775 65	13,489,775 65	
39 Northern Pacific .....			
40 Northwestern Coal R'y Co. ....	1,958,401 19	1,298,401 19	560,000 00
41 Oshkosh Transportation Co. ....	70,000 00	70,000 00	
42 Packwaukee & Montello .....	224,000 00	224,000 00	
43 Rice Lake, Dallas & Menomonie .....	120,000 00	120,000 00	
44 St. Cloud, Grantsburg & Ashland .....	29,210 00	29,210 00	
45 *Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....	798,397 91	798,397 91	
48 Wisconsin & Michigan .....	1,158,923 87	1,158,923 87	
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....	22,142,462 80	22,142,462 80	
51 Wisconsin Central Co. ....	32,839,171 93	15,183,889 03	17,655,282 90
52 Hawthorn, Nebasamon & Superior .....			
53 St. Paul & Duluth .....	849,496 51	849,496 51	

\*In hands of receivers.





*Permanent Improvements, etc.*

Permanent Improvements for the year—Wisconsin: Right of Way, Real Estate, Fences, Grading, Bridges, Rails, Ties, Buildings, Shops, Machinery, purchase of constructed road, etc.

NAME OF COMPANY.	FOR CONSTRUCTION.		
	Total expenditures.	Credits, property sold.	Net additions.
1-Abbotsford & Northeastern .....			
2 Ahnapee & Western .....			
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y. ....	\$42,404 60		\$42,404 60
7 Chicago, Milwaukee & St. Paul .....			
8 Chicago & Northwestern .....	1,325,823 30		
9 Chicago, St. Paul, Minneapolis & Omaha .....	68,610 03	740 40	67,870 63
10 Chicago, Burlington & Northern .....	4,387 50		4,387 53
11 Chicago, Lake Shore & Eastern .....	8,941 04		
12 Chicago & Lake Superior .....	2,139 42		
13 Chicago, Madison & Northern .....			163 93
14 Chicago, Wisconsin & Minnesota .....	163 93		
15 Chippewa River & Menomonie .....	9,680 10		
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....			
18 Duluth Short Line .....	7,049 42		
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern R'y Co. of Minnesota .....			23,472 85
22 Fairchild & Northeastern .....	28,472 85		
23 Green Bay & Western .....	47,186 46		
24 Hazelhurst & South Eastern .....			
25 Iola & Northern .....			
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	1,200 00		
28 Kickapoo Valley & Northern .....	1,073 33		
29 Lake Superior T. & T. R'y Co. ....			
30 Mattoon R'y Co. ....			40,259 61
31 Milwaukee & Lake Winnebago .....	40,259 61		
32 Milwaukee & Superior .....	8,070 04		
33 Marshfield & South Eastern .....	2,074 99		
34 Marinette, Tomahawk & Western .....	230,352 03		
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....			
37 Minneapolis, St. Paul & Ashland .....			143,589 10
38 Minneapolis, St. Paul & Sault Ste. Marie .....	143,589 10		
39 Northern Pacific .....			22,950 72
40 Northwestern Coal R'y Co. ....	22,950 72		
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....	542 71		542 71
43 Rice Lake, Dallas & Menomonie .....			
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	31,911 18		
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....			
49 Whitcomb & Morris .....	120 00		
50 Wisconsin Central R. R. Co. ....	9,388 05	274 47	9,113 61
51 Wisconsin Central Co. ....	40,000 00		
52 Hawthorn, Nebagamon & Superior .....	107,984 87	20,907 85	87,077 02
53 St. Paul & Duluth .....			

*Permanent Improvements, etc.*

Permanent improvements for the year—Wisconsin: Locomotives, Passenger Cars, Sleeping, Parlor and Dining Cars, Baggage, Express and Postal Cars, Combination Cars, other cars of all classes and floating equipment.

FOR EQUIPMENT.			Total constructi'n and equipment.	No.
Total expenditures.	Credits, property sold.	Net additions.		
				1
				2
				3
				4
				5
\$216 60		\$216 60	\$42,621 20	6
				7
228,027 40			1,553,850 70	8
			68,610 03	9
5,154 50			9,542 08	10
			8,941 04	11
27 50			2,166 92	12
				13
			163 93	14
7,985 85			17,665 95	15
				16
				17
				18
			7,049 42	19
				20
				21
4,602 75			33,075 60	22
21,610 00			68,796 46	23
				24
				25
			1,200 00	26
			5,869 97	27
4,796 64				28
				29
				30
			40,259 61	31
17,865 05			25,935 69	32
5,040 25			7,115 24	33
7,630 26			237,982 29	34
				35
				36
76,009 35		76,009 35	219,598 45	37
				38
			22,950 72	39
				40
			542 71	41
				42
				43
9,265 91			41,176 09	44
				45
				46
				47
				48
			120 08	49
471,955 35			498,151 96	50
253,407 15			262,795 23	51
10,000 00			50,000 00	52
9,473 85	\$21,547 30		117,458 70	53

*Permanent Improvements, etc.*

Permanent Improvements for the year—Wisconsin: Right of Way, Real Estate, Fences, Grading, Bridges, Rails, Ties, Buildings, Shop Machinery, Purchase of Constructed Road, etc.

NAME OF COMPANY.	FOR CONSTRUCTION.		
	Total ex- penditures.	Credits, property sold.	Net addi- tions during year.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....			
3 Ashland Siskiwiit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....	\$42,404 60		\$42,404 60
7 Chicago, Milwaukee & St. Paul .....			
8 Chicago & Northwestern .....	4,248,221 63		
9 Chicago, St. Paul, Minneapolis & Omaha .....	103,864 43	1,570 00	102,294 43
10 Chicago, Burlington & Northern .....	43,529 47		43,529 47
11 Chicago, Lake Shore & Eastern .....	102,556 60		
12 Chicago & Lake Superior .....	2,139 42		
13 Chicago, Madison & Northern .....			
14 Chicago, Wisconsin & Minnesota .....	1,562 20		
15 Chippewa River & Menomonie .....	9,630 10		
16 Drummond & Southwestern .....			
17 Duluth, South Shore & Atlantic .....	34,501 88	3,966 05	30,535 83
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....	7,049 42		
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....	4,471,836 06		
22 Fairchild & North Eastern .....	28,472 85		28,472 85
23 Green Bay & Western .....	47,186 46		
24 Hazelhurst & South Eastern .....			
25 Iola & Northern .....			
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	1,200 00		
28 Kickapoo Valley & Northern .....	1,073 33		
29 Lake Sup. Terminal & Transfer R'y Co. ....			
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....	40,259 61		40,259 61
32 Milwaukee & Superior .....	8,070 04		
33 Marshfield & South Eastern .....	2,074 99		
34 Marquette, Tomahawk & Western .....	230,352 03		
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....			
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	2,490,373 79		
39 Northern Pacific .....	4,063,656 16		
40 Northwestern Coal R'y Co. ....	22,950 72		
41 Oshkosh Transportation Co. ....			
42 Pockwankee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....	542 71		542 71
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....			
49 Whitcomb & Morris .....	120 00		
50 Wisconsin Central R. R. Co. ....	26,196 61		
51 Wisconsin Central Co. ....	25,151 57	35 70	25,115 84
52 Sawtooth, Nebagoon & Superior .....	40,000 00		
53 St. Paul & Duluth .....	1,773,150 76	343,314 50	1,429,836 26

*Permanent Improvements, etc.*

Permanent improvements for the year—whole line, June 30, 1899: Right of way, Real Estate, Fences, Grading, Bridges, Rails, Ties, Buildings, Shops, machinery, purchase of constructed road, etc.

FOR EQUIPMENT.			Total construct'n and equipment.	No.
Total expenditures.	Credits, property sold.	Net additions during year.		
.....	.....	.....	.....	1
.....	.....	.....	.....	2
.....	.....	.....	.....	3
.....	.....	.....	.....	4
.....	.....	.....	.....	5
.....	.....	.....	.....	6
.....	.....	.....	.....	7
.....	.....	.....	.....	8
.....	.....	.....	.....	9
.....	.....	.....	.....	10
.....	.....	.....	.....	11
.....	.....	.....	.....	12
.....	.....	.....	.....	13
.....	.....	.....	.....	14
.....	.....	.....	.....	15
.....	.....	.....	.....	16
.....	.....	.....	.....	17
.....	.....	.....	.....	18
.....	.....	.....	.....	19
.....	.....	.....	.....	20
.....	.....	.....	.....	21
.....	.....	.....	.....	22
.....	.....	.....	.....	23
.....	.....	.....	.....	24
.....	.....	.....	.....	25
.....	.....	.....	.....	26
.....	.....	.....	.....	27
.....	.....	.....	.....	28
.....	.....	.....	.....	29
.....	.....	.....	.....	30
.....	.....	.....	.....	31
.....	.....	.....	.....	32
.....	.....	.....	.....	33
.....	.....	.....	.....	34
.....	.....	.....	.....	35
.....	.....	.....	.....	36
.....	.....	.....	.....	37
.....	.....	.....	.....	38
.....	.....	.....	.....	39
.....	.....	.....	.....	40
.....	.....	.....	.....	41
.....	.....	.....	.....	42
.....	.....	.....	.....	43
.....	.....	.....	.....	44
.....	.....	.....	.....	45
.....	.....	.....	.....	46
.....	.....	.....	.....	47
.....	.....	.....	.....	48
.....	.....	.....	.....	49
.....	.....	.....	.....	50
.....	.....	.....	.....	51
.....	.....	.....	.....	52
.....	.....	.....	.....	53

*Cost of Road, etc.*

Permanent improvements for the year—whole line, June 30, 1899: Locomotives, Passenger Cars, Sleeping, Parlor and Dining Cars, Baggage, Express and Postal Cars, Combination Cars, Freight Cars, other cars of all classes and floating equipment.

NAME OF COMPANY.	COST OF ROAD AND EQUIP- MENT JUNE 30, 1899.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....	\$232,000 00	\$232,000 00
2 Ahnapee & Western .....		
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....	9,357 64	
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y .....	3,368,127 14	3,368,127 14
7 Chicago, Milwaukee & St. Paul .....	57,447,178 03	214,195,294 69
8 Chicago & Northwestern .....	55,650,573 86	178,516,351 34
9 Chicago, St. Paul, Minneapolis & Omaha .....		56,452,355 66
10 Chicago, Burlington & Northern .....	11,092,444 97	21,639,594 25
11 Chicago, Lake Shore & Eastern .....	245,454 61	4,295,604 46
12 Chicago & Lake Superior .....	56,066 02	56,066 02
13 Chicago, Madison & Northern .....	3,205,199 35	10,542,727 72
14 Chicago, Wisconsin & Minnesota .....	4,394,755 85	6,930,323 98
15 Chippewa River & Menomonic .....	259,403 10	259,403 10
16 Drummond & South Western .....	171,250 46	171,250 46
17 Duluth, South Shore & Atlantic .....		44,864,137 61
18 Duluth Short Line .....	92,837 57	1,100,000 00
19 Duluth, Superior & Western .....	761,863 61	761,863 61
20 Dunbar & Wausaukee .....	77,133 02	77,133 02
21 Eastern Railway Co. of Minnesota .....		14,372,697 52
22 Fairchild & North Eastern .....	172,948 81	172,948 81
23 Green Bay & Western .....	10,091,660 00	10,091,660 00
24 Hazelhurst & South Eastern .....	102,170 89	102,170 89
25 Iola & Northern .....	37,855 71	37,855 71
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....	1,068,350 00	1,068,350 00
28 Kickapoo Valley & Northern .....	320,241 32	320,241 32
29 Lake Superior Terminal & Transfer R'y Co. ....	294,240 53	294,240 53
30 Mattoon R'y Co. ....		
31 Milwaukee & Lake Winnebago .....	4,576,270 99	4,576,270 99
32 Milwaukee & Superior .....	353,615 70	353,615 70
33 Marshfield & South Eastern .....		
34 Marinette, Tomahawk & Western .....	163,500 00	163,500 00
35 Milwaukee & Wauwatosa .....		
36 Minnesota & Wisconsin .....		
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....	12,926,953 45	46,123,319 88
39 Northern Pacific .....		309,828,679 74
40 Northwestern Coal R'y Co. ....	919,135 10	919,135 10
41 Oshkosh Transportation Co. ....	70,000 00	70,000 00
42 Packwaukee & Montello .....	224,000 00	224,000 00
43 Rice Lake, Dallas & Menomonic .....	93,501 32	98,501 32
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....		
46 West Range .....		784,000 00
47 Winona Bridge R'y Co. ....		2,136,433 97
48 Wisconsin and Michigan .....	1,102,425 73	6,546 00
49 Whitcomb & Morris .....	6,546 00	
50 Wisconsin Central R. R. Co. ....	167,083 08	167,083 08
51 Wisconsin Central Co. ....	282,013 25	355,507 25
52 Hawthorn, Nebazamon & Superior .....	10,000 00	10,000 00
53 St. Paul & Duluth .....	737,144 21	12,104,174 13

*Cost of Road, etc.*

Permanent Improvements for the year—Wisconsin: Locomotives, Passenger Cars, Sleeping Parlor, and Dining Cars, Baggage, Express and Postal Cars, Combination Cars, Freight Cars, other Cars of all Classes, and Floating Equipment.

NET ADDITIONS YEAR ENDING JUNE 30, 1899.		TOTAL COST OF ROAD AND EQUIPMENT JUNE 30, 1899.		COST PER MILE.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
		\$232,000 00	\$232,000 00	\$15,303 00	\$15,303 00	1
						2
						3
						4
						5
\$42,621 20	\$42,621 20	3,410,748 34	3,410,748 34	883,613 55	883,613 55	6
1,156,301 43	4,311,340 13	58,603,479 46	218,506,634 82	35,541 67	35,541 67	7
1,553,850 70	4,978,870 27	55,602,471 66	178,162,221 61	35,512 62	35,512 62	8
267,870 03	102,294 43	24,649,834 93	56,554,650 09	39,753 31	39,753 31	9
9,542 08	51,459 47	11,101,987 05	21,691,053 72	49,889 00	63,526 29	10
8,941 04	103,556 60	254,395 65	4,399,161 06	14,679 48	26,443 62	11
2,166 92	2,166 92	58,232 94	58,232 94	19,410 98	19,410 98	12
2,594 00	50,204 15	3,207,793 35	10,592,931 87	45,797 37	45,797 37	13
163 93	1,562 20	4,394,919 78	6,931,891 18	60,313 16	52,866 77	14
17,665 95	17,665 95	277,069 05	277,069 05	9,084 23	9,084 23	15
81 19	81 19	171,331 65	171,331 65	7,888 12	7,888 12	16
	238,885 71		45,102,023 32		79,166 99	17
		92,837 57	1,100,000 00		61,971 83	18
7,049 42	7,049 42	768,913 03	768,913 03			19
		77,133 02	77,133 02	5,650 00	5,650 00	20
	6,332,967 89		20,705,665 41		50,144 50	21
33,075 60	33,075 60	206,024 41	206,024 41	7,630 53	7,630 53	22
		10,076,000 00	10,076,000 00	44,782 22	44,782 22	23
		102,170 89	102,170 89	6,010 05	6,010 05	24
		37,855 71	37,855 71	8,054 40	8,054 40	25
		1,068,350 00	1,068,350 00	29,110 35	29,110 35	26
5,869 97	5,869 97	326,111 29	326,111 29	6,310 20	6,310 20	27
		294,240 53	294,240 53	15,297 26	15,297 26	28
						29
40,259 61	40,259 61	4,616,530 60	4,616,530 60	48,209 38	48,209 38	31
25,935 09	25,935 09	379,550 79	379,550 79	15,157 78	15,157 78	32
						33
237,983 29	237,983 29	401,482 29	401,482 29	12,056 52	12,056 52	34
						35
						36
						37
219,598 45	2,840,647 29	13,146,551 90	48,963,967 17	48,436 19	39,084 56	38
	2,258,287 05		312,086,966 79			39
22,950 72	22,950 72	942,085 82	942,085 82	73,485 63	73,485 63	40
		70,000 00	70,000 00	16,355 14	16,355 14	41
		224,000 00	224,000 00	27,860 70	27,860 70	42
542 71	542 71	99,044 03	599,044 03	13,170 73	13,170 73	43
						44
						45
						46
			784,000 00		761,165 04	47
		1,102,425 73	2,138,471 16	29,903 48	29,929 19	48
		9,719 40	9,719 40	1,126 00	1,126 00	49
498,151 96	498,151 96	665,235 04	665,235 04	1,525 38	1,525 38	50
262,520 76	332,798 03	554,534 01	688,305 28	2,495 92	2,598 26	51
				5,441 50	5,441 50	52
75,003 55	1,231,585 50	812,147 76	13,335,759 68	59,073 13	59,073 13	53

## Income Account.

Income account June 30, 1899—Wisconsin—For roads making operating report.

NAME OF COMPANY.	GROSS EARNINGS FROM OPERATION.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....	\$20,040 38	\$20,040 38
2 Ahnapee & Western .....	34,227 68	34,227 68
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....		
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y .....	3 074 48	3 074 48
7 Chicago, Milwaukee & St. Paul .....	11,970,692 28	38,310,632 49
8 Chicago & Northwestern .....	12,484,772 56	39,054,953 19
9 Chicago, St. Paul, Minneapolis & Omaha .....	3,645,764 74	10,476,496 98
10 Chicago, Burlington & Northern .....	1,265,394 54	2,603,406 37
11 Chicago, Lake Shore & Eastern .....	65,024 00	2,245,764 53
12 Chicago & Lake Superior .....	3 282 21	3 282 21
13 Chicago, Madison & Northern .....	98,132 77	1,384,578 21
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonie .....	28,322 34	28,322 34
16 Drummond & South Western .....	15,948 15	15,948 15
17 Duluth, South Shore & Atlantic .....	213,806 93	2,007,724 55
18 Duluth Short Line .....		
19 Duluth, Superior & Western .....	116 021 96	116 021 96
20 Dunbar & Wausaukee .....	27,303 39	27,303 39
21 Eastern Railway Co. of Minnesota .....	520 971 05	3,064,968 40
22 Fairchild & North Eastern .....	31,778 34	31,778 34
23 Green Bay & Western .....	454,493 02	454 493 02
24 Hazelhurst & South Eastern .....	18 377 94	18 377 94
25 Iola & Northern .....	6,706 38	6,706 38
26 Glenwood & Northeastern .....	185 00	185 00
27 Kewaunee, Green Bay & Western .....	72,129 33	72,129 33
28 Kickapoo Valley & Northern .....	36,225 14	36,225 14
29 Lake Superior Terminal & Transfer R'y Co. ....	58,691 25	58,691 25
30 Mattoon R'y Co. ....		
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....	35 008 71	35,008 71
33 Marshfield & South Eastern .....	37,524 22	37,524 22
34 Marinette, Tomahawk & Western .....	35,177 70	35,177 70
35 Milwaukee & Wauwautosa .....		
36 Minnesota & Wisconsin .....	24,999 74	24,999 74
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....	1,374,678 93	4,348,585 04
39 Northern Pacific .....	417,840 47	26,031,866 81
40 Northwestern Coal R'y Co. ....	36,008 69	36,008 69
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonie .....	12,187 79	12,187 79
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....	56 857 95	56 857 95
46 West Range .....		
47 Winona Bridge R'y Co. ....	1 034 62	19 724 66
48 Wisconsin & Michigan .....	87,625 40	120 121 85
49 Whitcomb & Morris .....	3 331 55	3 331 55
50 Wisconsin Central R. R. Co. ....	2,588,211 72	2,588 211 73
51 Wisconsin Central Co. ....	1,592,509 81	2,525,337 61
52 Hawthorn, Nebagamun & Superior .....	270 44	270 44
53 St. Paul & Duluth .....	24,537 05	1,806 097 78

*Income Account.*

Income account June 30, 1899—Continued.

OPERATING EXPENSES.		INCOME FROM OPERATION.		DEFICIT FROM OPERATION.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$9,177 24	\$9,177 24	\$10,863 14	\$10,863 14			1
19,514 91	19,514 91	14,712 77	14,712 77			2
						3
						4
4,885 34	4,885 34			\$1,810 86	\$1,810 86	5
6,710,067 10	22,776,670 42	5,260,685 18	15,533,962 07			6
7,787,334 68	24,360,395 04	4,697,437 90	14,694,558 15			7
2,797,370 50	6,314,606 09	848,394 24	4,161,890 89			8
735,850 15	1,225,633 59	530,014 39	777,772 78			9
41,697 00	946,045 74	23,327 00	1,299,318 84			10
4,069 68	4,069 68	787,047 00	787,047 00			11
121,372 08	770,407 40		614,170 81	23,239 31		12
						13
21,065 49	21,065 49	7,256 85	7,256 85			14
12,727 48	12,727 48	3,220 71	3,220 71			15
159,317 05	1,332,371 91	54,489 38	675,352 64			16
						17
97,423 72	97,423 72	18,598 24	18,598 24			18
5,549 46	5,549 46	21,753 93	21,753 93			19
343,417 20	1,318,511 82	177,553 85	1,746,456 58			20
16,226 89	16,226 89	15,551 45	15,551 45			21
373,958 64	373,958 64	80,554 38	80,554 38			22
13,243 50	13,243 50	5,134 44	5,134 44			23
5,396 24	5,396 24	1,380 04	1,380 04			24
12,719 98	12,719 98			12,534 98	12,534 98	25
36,982 10	36,982 10	35,147 23	35,147 23			26
54,363 69	54,368 69	13,143 55	13,143 55			27
46,912 75	46,912 75	11,778 50	11,778 50			28
						29
						30
22,962 61	22,962 61	12,106 10	12,106 10			31
20,072 23	20,072 23	17,751 99	17,751 99			32
29,259 81	29,259 81	5,917 89	5,917 89			33
						34
18,020 88	18,020 88			6,978 86	6,978 86	35
						36
742,983 74	2,559,694 57	631,690 19	1,758,980 47			37
196,044 59	12,332,645 27	221,795 88	13,699,221 54			38
27,403 09	27,403 09	8,605 60	8,605 60			39
						40
						41
9,669 13	9,669 13	2,518 66	2,518 66			42
						43
76,768 01	76,768 01	19,910 06	19,910 06			44
						45
719 24	13,718 95	315 38	6,015 71			46
54,516 60	94,623 72	33,108 80	25,438 13			47
2,870 75	2,870 75	461 40	461 40			48
1,542 03	1,542,053 01	1,046,158 72	1,046,158 72			49
1,087,514 63	1,879,581 24	504,995 13	645,958 37			50
		270 44	270 44			51
16,680 57	1,226,510 26	7,856 48	579,587 52			52
						53



## Income Account.

Income account June 30th, 1899—Continued.

NAME OF COMPANY.	INCOME FROM OTHER SOURCES.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....		
2 Ahnapee & Western .....		
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....		
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y .....		
7 Chicago, Milwaukee & St. Paul .....	\$31,489 59	\$117,410 85
8 Chicago & Northwestern .....	440,366 78	1,377,558 43
9 Chicago, St. Paul, Minneapolis & Omaha .....	52,405 57	159,244 55
10 Chicago, Burlington & Northern .....	6,028 10	12,721 84
11 Chicago, Lake Shore & Eastern .....		
12 Chicago & Lake Superior .....		
13 Chicago, Madison & Northern .....		
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonie .....		
16 Drummond & South Western .....		
17 Duluth, South Shore & Atlantic .....		
18 Duluth Short Line .....		
19 Duluth, Superior & Western .....		
20 Dunbar & Wausaukee .....		
21 Eastern Railway Co. of Minnesota .....		
22 Fairchild & North Eastern .....		
23 Green Bay & Western .....		
24 Hazelhurst & South Eastern .....		
25 Iola & Northern .....		
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....		
28 Kickapoo Valley & Northern .....		
29 Lake Superior Terminal & Transfer R'y Co. ....		
30 Mattoon R'y Co. ....		
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....		
33 Marshfield & South Eastern .....		
34 Marinette, Tomahawk & Western .....		
35 Milwaukee & Wauwautosa .....		
36 Minnesota & Wisconsin .....		
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....		
39 Northern Pacific .....		
40 Northwestern Coal R'y Co. ....		
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonie .....		
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....		
46 West Range .....		
47 Winona Bridge R'y Co. ....		
48 Wisconsin & Michigan .....	33,108 80	23,438 13
49 Whitcomb & Morris .....		
50 Wisconsin Central R. R. Co. ....	4,540 72	4,540 72
51 Wisconsin Central Co. ....	426,580 88	432,040 38
52 Hawthorn, Nebagamon & Superior .....		
53 St. Paul & Duluth .....		196,172 90

*Income Account.*

Income account June 30, 1899—Continued.

TOTAL INCOME.		DEFICIT.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$10,863 14	\$10,863 14			1
14,712 77	14,712 77			2
				3
				4
				5
		\$1,810 86	\$1,810 86	6
5,292,174 77	15,651,372 92			7
5,137,804 68	16,072,116 63			8
900,799 81	4,321,135 44			9
536,042 49	790,494 62			10
23,327 00	1,299,318 84			11
3,282 21	3,282 21	787 47	787 47	12
	614,170 81	23,239 31		13
				14
				15
3,220 71	3,220 71			16
54,517 88	6,630,633 91			17
				18
18,621 51	18,621 51			19
21,753 93	21,753 93			20
1,997,401 03				21
				22
80,534 38	80,534 38			23
5,134 44	5,134 44			24
1,380 04	1,300 04			25
12,534 98	12,534 98			26
35,147 23	35,147 23			27
		18,143 55	18,143 55	28
11,778 50	11,778 50			29
				30
12,835 68	12,835 68			31
17,751 99	17,751 99			32
5,917 89	5,917 89			33
				34
6,978 86	6,978 86			35
				36
	1,761,606 47			37
	14,700,828 54			38
48,366 33	48,366 33			39
				40
				41
				42
2,518 66	2,518 66			43
				44
		19,910 06	19,910 06	45
				46
315 38	6,015 71			47
				48
461 40	461 40			49
1,050,699 44	1,050,699 44			50
931,576 01	1,077,998 75			51
270 44	270 44			52
7,856 48	775,760 42			53

*Income Account.*

Income account June 30, 1899—Continued.

NAME OF COMPANY.	DEDUCTION FROM INCOME.	
	<i>Interest on funded debt.</i>	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....	\$6,720 00	\$6,720 00
2 Ahnapee & Western .....	20,400 00	20,400 00
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....		
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y .....	75,000 00	75,000 00
7 Chicago, Milwaukee & St. Paul .....	1,847,930 10	6,890,119 69
8 Chicago & Northwestern .....	2,216,191 18	6,932,704 80
9 Chicago, St. Paul, Minneapolis & Omaha .....	631,290 43	1,448,246 00
10 Chicago, Burlington & Northern .....	348,471 60	653,615 00
11 Chicago, Lake Shore & Eastern .....	7,800 00	168,700 01
12 Chicago & Lake Superior .....		
13 Chicago, Madison & Northern .....		343,500 00
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonie .....		
16 Drummond & South Western .....	3,000 00	3,000 00
17 Duluth, South Shore & Atlantic .....	153,221 74	859,700 00
18 Duluth Short-Line .....		
19 Duluth, Superior & Western .....	20,000 00	20,000 00
20 Dunbar & Wausaukee .....		
21 Eastern Railway Co. of Minnesota .....		435,000 00
22 Fairchild & North Eastern .....		
23 Green Bay & Western .....	15,000 00	15,000 00
24 Hazelhurst & South Eastern .....		
25 Iola & Northern .....		
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....	20,400 00	20,400 00
28 Kickapoo Valley & Northern .....	30,000 00	30,000 00
29 Lake Superior Terminal & Transfer R'y Co. ....		
30 Mattoon R'y Co. ....		
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....	10,080 00	10,080 00
33 Marshfield & South Eastern .....		
34 Marinette, Tomahawk & Western .....		
35 Milwaukee & Wauwatosa .....		
36 Minnesota & Wisconsin .....	4,875 00	4,875 00
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....		1,142,269 31
39 Northern Pacific .....		6,079,273 33
40 Northwestern Coal R'y Co. ....	46,210 40	46,210 40
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonie .....	3,600 00	3,600 00
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....		
46 West Range .....		
47 Winona Bridge R'y Co. ....		
48 Wisconsin & Michigan .....	24,535 80	47,550 00
49 Whitcomb & Morris .....		
50 Wisconsin Central R. R. Co. ....	430,166 95	430,166 95
51 Wisconsin Central Co. ....	46,043 78	67,754 95
52 Hawthorn, Nebagamon & Superior Ry. ....		
53 St. Paul & Duluth .....	10,319 17	169,444 44

*Income Account.*

Income account June 30, 1899—Continued.

INTEREST ON INTEREST BEARING CURRENT LIABILITIES ACCRUED NOT OTHERWISE PROVIDED FOR.		RENTALS.		TAXES.		No
Wisconsin.	Whole line.	Wisconsin.	Whole line	Wisconsin.	Whole line.	
				\$75 80	\$75 80	1
				170 00	170 00	2
						3
						4
						5
\$2,422 39	\$2,422 39			73 95	73 95	6
				457,108 08	1,186,166 40	7
		\$6,815 25	\$21,319 52	378,017 33	1,182,516 48	8
				151,289 47	383,551 71	9
			145,231 89	49,894 11	89,923 49	10
				2,176 51	14,000 00	11
397 00	397 60					12
135,603 02				528 87	42,372 13	13
						14
				152 50	152 50	15
				4,927 00	53,280 85	16
						17
158 69	158 69	3,186 72	3,186 72	5,469 66	5,469 66	18
						19
		6,381 39	91,133 16	21,474 22	99,320 83	20
				115 00	115 00	21
				4,073 86	4,073 86	22
				109 50	109 50	23
				23 50	23 50	24
						25
						26
11,979 16	11,979 16			590 65	590 65	27
11,700 00	11,700 00			78 50	78 50	28
						29
						30
4,701 77	4,701 77					31
27,000 00	27,000 00					32
				190 96	190 96	33
						34
				130 00	130 00	35
						36
	68,288 06					37
					175,990 85	38
			61,520 00		750,133 36	39
				2,235 80	2,235 80	40
						41
						42
				99 84	99 84	43
						44
						45
				270 76	398 27	46
						47
						48
18,990 00	18,990 00	217,699 57	217,699 57	103,622 17	103,622 17	49
78,403 75	95,269 18	69,646 56	303,719 55	63,322 38	87,890 07	50
						51
		2,464 79	86,300 59	730 20	61,350 01	52
						53

## Income Account.

Income account June 30, 1899—Deductions from income and deficit.

NAME OF COMPANY.	DIVIDENDS.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....		
2 Ahnapee & Western .....		
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....		
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y .....		
7 Chicago, Milwaukee & St. Paul .....	\$1,233,159 60	\$4,597,910 50
8 Chicago & Northwestern .....	1,126,290 55	3,523,270 00
9 Chicago, St. Paul, Minneapolis & Omaha .....	626,502 67	1,437,261 00
10 Chicago, Burlington & Northern .....		
11 Chicago, Lake Shore & Eastern .....		
12 Chicago & Lake Superior .....		
13 Chicago, Madison & Northern .....		
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonie .....		
16 Drummond & South Western .....		
17 Duluth, South Shore & Atlantic .....		
18 Duluth Short Line .....		
19 Duluth, Superior & Western .....		
20 Dunbar & Wausaukee .....		
21 Eastern Railway Co. of Minnesota .....		1,250,000 00
22 Fairchild & North Eastern .....		
23 Green Bay & Western .....	37,500 00	37,500 00
24 Hazelhurst & South Eastern .....	7,000 00	7,000 00
25 Iola & Northern .....		
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....		
28 Kickapoo Valley & Northern .....		
29 Lake Superior Terminal & Transfer R'y Co. ....		
30 Mattoon R'y Co. ....		
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....		
33 Marshfield & South Eastern .....		
34 Marinette, Tomahawk & Western .....		
35 Milwaukee & Wauwatosa .....		
36 Minnesota & Wisconsin .....		
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....		
39 Northern Pacific .....		4,600 00
40 Northwestern Coal R'y Co. ....		
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonie .....		
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....		
46 West Range .....		
47 Winona Bridge R'y Co. ....		
48 Wisconsin & Michigan .....		
49 Whitcomb & Morris .....		
50 Wisconsin Central R. R. Co. ....		
51 Wisconsin Central Co. ....		
52 Hawthorn, Nebagamon & Superior .....		
53 St. Paul & Duluth .....		

*Income Account.*

Income account June 30, 1899—Continued.

NET INCOME FROM OPERATION JUNE 30, 1899.		DEFICIT JUNE 30, 1899.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$4,067 34	\$4,067 34			1
		\$5,857 23	\$5,857 23	2
				3
		79,307 20	79,307 20	4
				5
2,987,136 59	7,575,086 83			6
2,403,414 25	7,518,377 28			7
118,219 91	2,489,337 73			8
137,676 88			98,275 76	9
	556,618 83	86,649 51		10
2,885 21	2,885 21	1,184 47	1,184 47	11
	228,298 63	159,371 20		12
				13
7,104 85	7,104 85			14
220 71	220 71			15
		103,620 86	248,450 62	16
				17
		10,193 56	10,193 56	18
				19
	1,294,952 26			20
15,436 45	15,436 45			21
61,469 52	61,469 52			22
5,024 94	5,024 94			23
1,356 54	1,356 54			24
				25
12,956 58	12,956 58			26
		60,122 71	60,122 71	27
				28
				29
				30
		1,946 09	1,946 09	31
		16,363 25	16,363 25	32
5,726 93	5,726 93			33
				34
1,973 86	1,973 86			35
				36
	375,057 25			37
	5,633,282 59			38
		79 87	79 87	39
				40
		1,183 60	1,183 60	41
				42
				43
				44
				45
117 62	5,617 44			46
8,573 00			22,111 87	47
				48
132,803 96	132,803 96			49
634,417 64	444,217 09			50
				51
	458,680 38	5,657 63		52
				53

*Passenger Earnings.*

Passenger earnings in Wisconsin, year ending June 30, 1899.

Name of Company.	For sale of tickets.	Mail.	Express.
1 Abbotsford & Northeastern .....	\$1,033 55	\$660 48	\$136 99
2 Ahnapee & Western .....	14,619 67	2,553 80	1,507 62
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....	314 30	120 18	
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....	1,962 95	67 25	
7 Chicago, Milwaukee & St. Paul .....	2,244,668 81	451,882 18	238,042 68
8 Chicago & Northwestern .....	2,622,248 09	287,562 81	182,814 33
9 Chicago, St. Paul, Minneapolis & Omaha .....	810,343 92	85,854 50	
10 Chicago, Burlington & Northern .....	240,773 64	30,031 45	14,086 80
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....	1,007 45	172 41	
13 Chicago, Madison & Northern .....	29,733 67	6,738 87	4,596 00
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonee .....	415 08		
16 Drummond & Southwestern .....			
17 Duluth, South Shore & Atlantic .....	54,151 20	8,160 24	5,263 17
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....	884 50		
21 Eastern Railway Co. of Minnesota .....	32,972 82	1,317 49	818 95
22 Fairchild & North Eastern .....	1,395 25	128 33	31 89
23 Green Bay & Western .....	85,834 62	20,031 95	3,576 96
24 Hazelhurst & South Eastern .....	517 24		92 19
25 Iola & Northern .....	804 18	223 54	16 07
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	16,010 38	2,596 97	600 00
28 Kickapoo Valley & Northern .....	5,950 70	2,138 26	573 41
29 Lake Superior T. & T. R'y Co. ....			
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	2,268 30	806 72	169 56
33 Marshfield, & South Eastern .....	5,964 59		454 75
34 Marinette, Tomahawk & Western .....	3,659 20	150 00	302 22
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	2,617 72	489 48	470 33
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	147,225 06	34,690 52	13,649 03
39 Northern Pacific .....	87,300 84	6,127 56	5,847 86
40 Northwestern Coal R'y Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonee .....	1,406 19	342 32	33 72
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	3,421 59		
46 West Range .....			
47 Winona Bridge R'y Co. ....	2,513 39		
48 Wisconsin & Michigan .....	9,913 79	839 00	122 65
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....	529,676 43	49,261 58	49,518 75
51 Wisconsin Central Co. ....	306,377 96	30,095 62	35,810 33
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	3,276 77	614 66	151 20

*Passenger Earnings.*

Passenger earnings in Wisconsin, year ending June 30, 1899—Continued.

News.	Extra baggage and storage.	Sleeping and parlor cars.	Miscellaneous.	Total passenger earnings.	No.
				\$1,831 02	1
				19,043 31	2
					3
				434 48	4
					5
				2,030 20	6
\$4,549 72	51,213 00	\$97,193 17	\$31,407 11	3,118,956 67	7
	53,439 42		6,147 29	3,152 211 94	8
	67,681 75		20,948 37	985,028 54	9
	4,160 86			289,052 75	10
					11
	58 57		7 25	1,245 68	12
	500 70		280 83	41,855 07	13
					14
				415 08	15
					16
	387 51			67,962 12	17
					18
					19
				884 50	20
	281 00		2,045 34	37,406 60	21
	29 11			1,584 58	22
	1,330 64			110,774 17	23
	3 90			613 33	24
				1,043 79	25
					26
	231 15			19,438 50	27
				8,662 37	28
	163 70		125 00	288 70	29
					30
					31
	11 13		90 38	3,346 09	32
				6,419 34	33
				4,111 42	34
					35
				3,577 53	36
					37
	2,663 11	8,421 42		206,649 16	38
	1,778 66		327 66	101,382 58	39
					40
					41
					42
	25 03			1,807 26	43
					44
				3,421 59	45
					46
				2,513 39	47
	27 78			10,903 23	48
					49
	7,448 03		5,904 33	641,809 12	50
	3,813 62		11,091 37	887,188 90	51
					52
	122 34	571 00		4,180 78	53



*Passenger Earnings.*

Passenger earnings, whole line, year ending June 30, 1899.

Name of Company.	For sale of tickets.	Mail.	Express
1 Abbotsford & Northeastern .....	\$1,033 55		\$660 48
2 Ahnapee & Western .....	14,619 67	\$2,553 80	1,507 62
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....	314 30	120 18	
5 Bayfield Harbor & Great Western ....			
6 Bayfield Transfer R'y .....	1,962 95	67 25	
7 Chicago, Milwaukee & St. Paul .....	6,778,921 20	1,215,139 80	720,000 00
8 Chicago & Northwestern .....	8,202,934 87	899,556 01	571,881 07
9 Chicago, St. Paul, Minneapolis & Omaha	2,126,987 78	216,325 71	161,223 56
10 Chicago, Burlington & Northern .....	385,751 06	48,512 85	23,400 00
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....	1,007 45	172 41	53 57
13 Chicago Madison & Northern .....	233,795 62	36 084 71	34,800 00
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....	415 08		
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....	538,766 32	52,889 04	43,373 89
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....	684 50		
21 Eastern Railway Co. of Minnesota .....	321,737 84	13,674 96	9,517 40
22 Fairchild & Northeastern .....	1,395 25	128 33	31 89
23 Green Bay & Western .....	85,834 62	20,031 95	3,576 96
24 Hazelhurst & South Eastern .....	517 24		92 19
25 Iola & Northern .....	804 18	223 54	16 07
26 Glenwood & Northeastern .....			
27 Kewaukee, Green Bay & Western .....	16,010 38	2,596 97	600 00
28 Kickapoo Valley & Northern .....	5,950 70	2,138 26	573 41
29 Lake Superior T. & T. R'y Co. ....			
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	2,288 20	806 72	169 56
33 Marshfield & South Eastern .....	5,964 59		454 75
34 Marinette, Tomahawk & Western .....	3,650 20	150 00	302 22
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	2,617 72	489 48	470 33
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie	621,792 95	177,193 96	58,430 14
39 Northern Pacific .....	4,867,721 49	657,033 90	413,730 24
40 Northwestern Coal R'y Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....	1,406 19	342 32	33 72
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	3,721 59		
46 West Range .....			
47 Winona Bridge R'y Co. ....	4,794 07		
48 Wisconsin & Michigan .....	14,313 45	1,499 00	218 99
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....	529,676 43	49,261 58	49,518 75
51 Wisconsin Central Co. ....	501,672 30	43,811 78	54,481 25
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	353,210 41	25,557 13	22,500 00

*Passenger Earnings.*

Passenger earnings, whole line, year ending June 30, 1899—Continued.

News.	Extra baggage and storage.	Sleeping and parlor cars.	Miscellaneous.	Total passenger earnings.	No.
	\$136 99			\$1,831 02	1
	362 22			19,043 31	2
				434 48	3
				2,030 20	4
				2,030 20	5
\$13,016 62	155,597 86	\$246,225 17	\$175,339 79	9,304,240 44	6
	167,169 59		19,230 00	9,860,771 54	7
	52,665 60			2,557 202 65	8
	6,662 41		482 30	464,808 62	9
	7 25			1,245 68	10
	4,666 83		88,063 22	397,410 38	11
				415 08	12
					13
					14
					15
					16
			8,444 26	643,474 01	17
					18
					19
				684 50	20
	2,440 25		15,389 63	362,760 13	21
	29 11			1,584 58	22
	1,330 64			110,774 17	23
	3 90			613 33	24
				1,043 79	25
					26
	231 15			19,438 50	27
				8,662 37	28
	163 70		125 00	288 70	29
					30
					31
	11 13		90 38	3,346 09	32
				6,419 34	33
				4,111 42	34
					35
				3,577 53	36
					37
	11,599 24		24,024 23	893,040 52	38
	103,310 81		79,323 30	6,121,119 74	39
					40
					41
					42
	25 03			1,807 26	43
					44
				3,721 59	45
					46
				4,794 07	47
	55 95			16,087 39	48
					49
	7,448 03		5,904 33	641,809 12	50
	5,653 92		56,540 63	661,559 88	51
					52
	5,665 94	22,883 50	6,609 62	436,426 60	53

*Freight Earnings.*

Freight earnings and total passenger and freight earnings, Wisconsin—year ending June 30, 1899.

Name of Company	Freight earnings.	Stock yards.
1 Abbotsford & Northeastern .....	\$16,566 50	.....
2 Ahnapee & Western .....	15,184 37	.....
3 Ashland Siskiwit .....	.....	.....
4 Big Falls R'y Co. ....	7,612 73	.....
5 Bayfield Harbor & Great Western .....	.....	.....
6 Bayfield Transfer R'y .....	933 81	.....
7 Chicago, Milwaukee & St. Paul .....	8,737,196 93	\$40,877 74
8 Chicago & Northwestern .....	9,287,377 29	.....
9 Chicago, St. Paul, Minneapolis & Omaha .....	2,650,612 87	.....
10 Chicago, Burlington & Northern .....	968,592 26	.....
11 Chicago, Lake Shore & Eastern .....	.....	.....
12 Chicago & Lake Superior .....	2,036 53	.....
13 Chicago, Madison & Northern .....	56,237 70	.....
14 Chicago, Wisconsin & Minnesota .....	.....	.....
15 Chippewa River & Menomonie .....	27,907 26	.....
16 Drummond & South Western .....	15,948 18	.....
17 Duluth, South Shore & Atlantic .....	144,997 71	.....
18 Duluth Short Line .....	.....	.....
19 Duluth, Superior & Western .....	116,021 96	.....
20 Dunbar & Wausaukee .....	26,618 89	.....
21 Eastern Railway Co. of Minnesota .....	454,669 38	.....
22 Fairchild & Northeastern .....	30,566 94	.....
23 Green Bay & Western .....	341,317 76	.....
24 Hazelhurst & South Eastern .....	17,764 61	.....
25 Iola & Northern .....	5,640 31	.....
26 Glenwood & Northeastern .....	1 85	.....
27 Kewaunee, Green Bay & Western .....	52,253 85	.....
28 Kickapoo valley & Northern .....	26,503 31	.....
29 Lake Superior Terminal & Transfer R'y Co. ....	5,603 95	.....
30 Mattoon R'y Co. ....	.....	.....
31 Milwaukee & Lake Winnebago .....	.....	.....
32 Milwaukee & Superior .....	31,395 62	.....
33 Marshfield & South Eastern .....	31,283 73	.....
34 Marinette, Tomahawk & Western .....	29,840 55	.....
35 Milwaukee & Wauwatosa .....	.....	.....
36 Minnesota & Wisconsin .....	21,422 21	.....
37 Minneapolis, St. Paul & Ashland .....	.....	.....
38 Minneapolis, St. Paul & Sault Ste. Marie .....	1,161,942 74	.....
39 Northern Pacific .....	241,096 80	.....
40 Northwestern Coal R'y Co. ....	27,482 69	.....
41 Oshkosh Transportation Co. ....	.....	.....
42 Packwaukee & Montello .....	.....	.....
43 Rice Lake, Dallas & Menomonie .....	10,380 53	.....
44 St. Cloud, Grantsburg & Ashland .....	.....	.....
45 Washburn, Bayfield & Iron River .....	53 136 36	.....
46 West Range .....	.....	.....
47 Winona Bridge R'y Co. ....	7,832 92	.....
48 Wisconsin & Michigan .....	73,250 70	.....
49 Whitcomb & Morris .....	3,331 55	.....
50 Wisconsin Central R. R. Co. ....	1,918,043 56	.....
51 Wisconsin Central Co. ....	1,199,183 35	.....
52 Hawthorn, Nebagamon & Superior .....	270 44	.....
53 St. Paul & Duluth .....	20,356 37	.....

*Freight Earnings.*

Freight earnings and total passenger and freight earnings, Wisconsin—year ending June 30, 1899—Continued.

Elevators	Other items.	Total freight earnings.	Total passenger and freight earnings.	No.
.....	.....	\$16,566 50	\$18,397 52	1
.....	.....	15,184 37	34,227 68	2
.....	.....	7,612 73	8,047 21	3
.....	.....	1,025 28	3,055 48	4
\$41 47	.....	8,785,613 84	11,904,570 51	5
7,539 17	.....	9,298,801 50	12,451,013 44	6
.....	\$11,424 21	2,652,938 07	3,637,966 61	7
.....	2,325 20	968,592 26	1,257,645 01	8
.....	.....	2,036 53	3,282 21	9
.....	.....	56,237 70	98,092 77	10
.....	.....	27,907 26	28,322 34	11
.....	.....	15,948 18	15,948 18	12
.....	423 50	145,421 21	213,388 33	13
.....	.....	116,021 96	116,021 96	14
.....	.....	26,618 89	26,618 89	15
.....	130 60	454,799 98	492,205 58	16
.....	.....	30,566 94	32,151 52	17
.....	2,401 09	343,718 85	454,493 02	18
.....	.....	17,764 61	18,377 94	19
.....	.....	5,640 31	6,684 10	20
.....	.....	185 00	185 00	21
.....	436 98	52,690 83	72,129 33	22
.....	.....	26,503 31	35,165 68	23
.....	.....	5,603 95	5,892 65	24
.....	.....	31,395 62	33,663 92	25
.....	121 50	31,405 23	37,824 57	26
.....	.....	29,840 55	33,951 97	27
.....	.....	21,422 21	24,999 74	28
.....	768 92	1,162,711 66	1,369,360 82	29
.....	860 49	241,957 29	343,339 87	30
.....	.....	27,482 69	27,482 69	31
.....	.....	10,380 53	12,187 79	32
.....	.....	53,136 36	56,857 95	33
.....	.....	7,832 92	10,346 31	34
.....	.....	73,250 70	84,153 93	35
.....	.....	3,331 55	3,331 55	36
.....	25,352 35	1,943,395 91	2,585,205 03	37
.....	3,645 50	1,202,828 85	1,590,017 75	38
.....	.....	270 44	270 44	39
.....	.....	20,356 37	24,537 05	40
.....	.....	.....	.....	41
.....	.....	.....	.....	42
.....	.....	.....	.....	43
.....	.....	.....	.....	44
.....	.....	.....	.....	45
.....	.....	.....	.....	46
.....	.....	.....	.....	47
.....	.....	.....	.....	48
.....	.....	.....	.....	49
.....	.....	.....	.....	50
.....	.....	.....	.....	51
.....	.....	.....	.....	52
.....	.....	.....	.....	53

*Freight Earnings.*

Freight earnings and total passenger and freight earnings, whole line—year ending June 30, 1899.

Name of Company.	Freight earnings.	Stock yards.
1 Abbotsford & Northeastern .....	\$16,566 50	
2 Ahnapee & Western .....	15,184 37	
3 Ashland Siskiwit .....		
4 Big Falls R'y Co. ....	7,612 73	
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer R'y .....	983 81	
7 Chicago, Milwaukee & St. Paul .....	28,778,222 43	\$40,877 74
8 Chicago & Northwestern .....	29,062,838 84	
9 Chicago, St. Paul, Minneapolis & Omaha .....	7,827,558 97	
10 Chicago, Burlington & Northern .....	1,517,709 06	
11 Chicago, Lake Shore & Eastern .....	1,516,219 89	
12 Chicago & Lake Superior .....	2,036 53	
13 Chicago, Madison & Northern .....	981,368 36	
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonic .....	27,907 26	
16 Drummond & South Western .....	15,948 19	
17 Duluth, South Shore & Atlantic .....	1,338,223 38	
18 Duluth Short Line .....		
19 Duluth, Superior & Western .....	116,021 96	
20 Dunbar & Wausaukee .....	26,618 89	
21 Eastern Railway Co. of Minnesota .....	2,666,548 92	
22 Fairchild & North Eastern .....	30,566 94	
23 Green Bay & Western .....	341,317 76	
24 Hazelhurst & South Eastern .....	17,764 61	
25 Iola & Northern .....	5,640 31	
26 Glenwood & Northeastern .....	185 00	
27 Kewaunee, Green Bay & Western .....	52,253 85	
28 Kickapoo Valley & Northern .....	26,503 31	
29 Lake Superior Terminal & Transfer R'y Co. ....	5,603 95	
30 Mattoon R'y Co. ....		
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....	31,395 62	
33 Marshfield & South Eastern .....	31,283 73	
34 Marinette, Tomahawk & Western .....	29,840 55	
35 Milwaukee & Wauwatosa .....		
36 Minnesota & Wisconsin .....	21,422 21	
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....	3,426,985 96	
39 Northern Pacific .....	19,162,419 32	
40 Northwestern Coal R'y Co. ....	27,482 69	
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonic .....	10,280 53	
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....	53,136 36	
46 West Range .....		
47 Winona Bridge R'y Co. ....	14,940 59	
48 Wisconsin & Michigan .....	97,305 80	
49 Whiteomb & Morris .....	3,331 55	
50 Wisconsin Central R. R. Co. ....	1,918,043 56	
51 Wisconsin Central Co. ....	1,199,183 35	
52 Hawthorn, Nebagamon & Superior .....	270 44	
53 St. Paul & Duluth .....	1,365,042 65	

*Freight Earnings.*

Freight earnings and total passenger and freight earnings, whole line—year ending June 30, 1899—Continued.

Elevators.	Other items.	Freight earnings.	Total passenger and freight earnings.	No.
		\$16,566 50	\$18,397 52	1
		15,184 37	34,227 68	2
		7,612 73	8,047 21	3
				4
	\$41 47	1,025 28	3,055 48	5
\$51,007 90		28,865,108 07	38,169,348 51	6
	35,737 28	29,088,576 12	38,949,347 66	7
	8,968 35	7,836,527 29	10,393,729 94	8
		1,517,709 06	1,982,517 68	9
		1,516,219 89	1,516,219 89	10
		2,036 53	3,282 21	11
	40 00	981,408 36	1,378,818 74	12
				13
		27,907 26	28,322 34	14
		15,948 19	15,948 19	15
7,873 49		1,346,096 87	1,989,570 88	16
				17
		116,021 96	116,021 96	18
		26,618 89	26,618 89	19
	956 68	2,667,505 60	3,030,265 73	20
		30,566 94	32,151 52	21
	2,401 09	343,718 85	454,493 02	22
		17,764 61	18,377 94	23
		5,640 81	6,684 10	24
		185 00	185 00	25
	436 98	52,690 83	72,129 33	26
		26,503 31	35,165 68	27
		5,603 95	5,892 65	28
				29
		31,395 62	33,663 92	30
	121 50	31,405 23	37,824 57	31
		29,840 55	33,951 97	32
				33
		21,422 21	24,999 74	34
				35
	2,200 57	3,429,186 53	4,322,227 05	36
	30,987 35	19,193,406 67	25,314,522 41	37
		27,482 69	27,482 69	38
				39
		10,380 53	12,187 79	40
				41
		53,136 36	56,857 95	42
				43
		14,940 59	19,734 66	44
		97,305 80	113,393 19	45
		3,331 55	3,331 55	46
25,352 35		1,943,395 91	2,585,205 03	47
	3,645 50	1,202,828 85	1,590,017 75	48
		270 44	270 44	49
		1,365,042 65	1,801,469 25	50
				51
				52
				53

## Other Earnings.

Earnings from operation other than passenger and freight, in Wisconsin, year ending June 30, 1899.

Name of Company.	Car mileage, balance.	Switching charges, balance.	Telegraph companies.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....			
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....			
7 Chicago, Milwaukee & St. Paul .....			\$9,458 13
8 Chicago & Northwestern .....			
9 Chicago, St. Paul, Minneapolis & Omaha .....		\$663 69	
10 Chicago, Burlington & Northern .....			1,600 00
11 Chicago, Lake Shore & Eastern .....		53,112 50	
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....			
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonee .....			
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....			86 42
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....		14,480 72	
22 Fairchild & North Eastern .....	\$343 18	30 00	
23 Green Bay & Western .....			
24 Hazelhurst & South Eastern .....			
25 Iola & Northern .....	22 28		
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....			
28 Kickapoo Valley & Northern .....			
29 Lake Superior Term. & Transfer R'y Co. ....	136 81		
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	171 00		
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	15 46		40 05
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....			
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....			4,295 28
39 Northern Pacific .....		60,537 39	2,544 31
40 Northwestern Coal R'y Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonee .....			
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....			
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....			121 32
51 Wisconsin Central Co. ....			
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....			

*Other Earnings.*

Earnings from operation other than passenger and freight, in Wisconsin, year ending June 30, 1899—Continued.

Rent from tracks, yards and terminals.	Other rentals.	Other sources.	Total gross earnings from operation.	No.
	\$1,642 86		\$20,040 33	1
			34,227 68	2
				3
			8,047 21	4
	19 00		3,074 48	5
	56,663 64		11,970,692 28	6
	10,447 34	\$18,434 29	12,484,772 56	7
	7,134 44		3,645,764 74	8
\$3,772 68	1,173 10		1,265,394 54	9
	11,911 50		65,024 00	10
			3,282 21	11
	40 00		98,132 77	12
				13
			28,322 34	14
			15,948 19	15
262 50	70 68	4 00	213,806 93	16
				17
			116,021 96	18
			27,303 39	19
13,766 70	518 05	373 18	520,971 05	20
			31,778 34	21
			454,493 02	22
			18,377 94	23
			6,706 38	24
			185 00	25
			72,129 33	26
		1,059 46	36,225 14	27
	818 70		58,691 25	28
				29
	96 00	267 00	35,008 71	30
			37,824 57	31
	1,170 22		35,177 70	32
				33
			24,999 74	34
				35
		1,078 83	1,374,673 93	36
9,260 80			417,840 47	37
8,526 00			36,008 69	38
				39
			12,187 79	40
				41
			56,857 95	42
				43
			10,346 31	44
	3,471 47		87,625 40	45
			3,331 55	46
2,855 38			2,588,211 73	47
842 12	1,699 44		1,592,509 81	48
			270 44	49
			24,537 05	50
				51
				52
				53



*Other Earnings.*

Earnings from operations other than passenger and freight—whole line—year  
ending June 30, 1899.

Name of Company.	Car mileage, balance.	Switching charges, balance.	Telegraph companies.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....			
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western ....			
6 Bayfield Transfer R'y .....			
7 Chicago, Milwaukee & St. Paul .....			\$32,694 47
8 Chicago & Northwestern .....			
9 Chicago, St. Paul, Minneapolis & Omaha	\$43,359 70		
10 Chicago, Burlington & Northern .....		\$2 019 00	6,453 31
11 Chicago, Lake Shore & Eastern .....	309,135 15	386,155 23	
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....		4,222 23	
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....			
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....			1,229 53
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern R'y Co. of Minnesota .....		15,592 72	3,223 41
22 Fairchild & North Eastern .....	343 18	30 00	
23 Green Bay & Western .....			
24 Hazelhurst & South Eastern .....			
25 Iola & Northern .....	22 28		
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....			
28 Kickapoo Valley & Northern .....			
29 Lake Sup. Terminal & Transfer R'y Co.	136 81		
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	171 00		
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	15 46		40 05
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....			
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie			25,966 63
39 Northern Pacific .....		275,746 53	51,644 81
40 Northwestern Coal R'y Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....			
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....			
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....			121 32
51 Wisconsin Central Co. ....			
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....			

*Other Earnings.*

Earnings from operations other than passenger and freight—whole line—year ending June 30, 1899—Continued.

Rents from tracks, yards and terminals	Other rentals.	Other sources.	Total gross earnings from operation.	No.
	\$1,642 86		\$20,040 38	1
			34,227 68	2
			8,047 21	3
			3,094 48	4
	19 00		38,310 632 49	5
	108,589 51		39,054 953 19	6
\$32,681 43	58,291 93	\$14,632 17	10,476 496 98	7
25,209 15	14,198 19		2,003,406 37	8
7,663 56	2,371 01	2,376 81	2,245,961 58	9
		33,854 31	3,222 21	10
	1,537 24		1,384,578 21	11
			28,322 34	12
			15,948 19	13
3,430 90	857 55	12,635 64	2,007,724 55	14
			116,021 96	15
			27,303 39	16
13,766 70	1,719 87	399 97	3,064 968 40	17
		373 18	31,778 34	18
			454 493 02	19
			18,377 94	20
			6,706 38	21
			155 00	22
			72 129 33	23
			36,225 14	24
	818 70		58,691 25	25
				26
	96 00	267 60	35,008 71	27
	1,170 22		37,825 57	28
			35,177 70	29
			24,999 74	30
		391 36	4,348 585 04	31
280,669 35	85,644 12	23,635 59	26,031 866 81	32
8,526 60			36,008 69	33
			12,187 79	34
			56,857 95	35
			10,346 31	36
		6,727 66	120 121 85	37
			3 331 55	38
2,855 38			2,588,211 78	39
7,936 24	2,642 88		2,525,339 61	40
			270 44	41
3,767 65		860 88	1,806,097 78	42
				43
				44
				45
				46
				47
				48
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				52
				53

## Gross Earnings.

Recapitulation of earnings, year ending June 30, 1899.

Name of Company.	Passenger earnings.	Freight earnings.	Other earnings.	Total gross.
1 Abbotsford & Northeastern	\$1,033 55	\$16,702 31	\$1,642 86	\$20,040 33
2 Ahnapee & Western	14,619 67	15,184 37	34,227 68	34,227 68
3 Ashland Siskwit				
4 Big Falls R'y Co.	214 30	7,612 73		8,047 21
5 Bayfield Harbor & G. W.				
6 Bayfield Transfer R'y	1,962 95	983 81	19 00	3,074 48
7 Chicago, Milwaukee & St. P.	3,118,956 67	18,785,673 84	66,121 77	11,970,692 28
8 Chicago & Northwestern	3,152,211 94	9,298,801 50	33,759 12	12,484,772 56
9 Chicago, St. P., M. & O.	985,028 54	2,652,938 07	7,798 13	3,645,764 74
10 Chicago, Burlington & Nor.	289,052 75	968,592 26	7,749 53	1,265,394 54
11 Chicago, L. S. & Eastern			65,024 00	65,024 00
12 Chicago & Lake Superior	1,245 68	2,036 53		3,282 21
13 Chicago, Madison & North'n	41,855 07	56,237 70	40 00	98,132 77
14 Chicago, Wis. & Minn.				
15 Chippewa Riv. & Menomonie	415 08	27,907 26		28,322 34
16 Drummond & South Western		15,948 19		15,948 19
17 Duluth, So. Shore & Atlantic	67,962 12	145,421 21	423 60	213,806 93
18 Duluth Short Line				
19 Duluth, Superior & Western		116,021 96		116,021 96
20 Dunbar & Wausaukee	684 50	26,618 89		27,303 39
21 Eastern R'y Co. of Minn.	37,405 60	454,799 98	28,765 47	520,971 05
22 Fairchild & North Eastern	1,584 58	30,566 94	373 18	31,778 34
23 Green Bay & Western	110,774 17	343,718 85		454,493 02
24 Hazelhurst & South Eastern	613 33	17,764 61		18,377 94
25 Iola & Northern	1,043 79	5,640 31	22 28	6,706 33
26 Glenwood & Northeastern		185 00		185 00
27 Kewaunee, Green Bay & W.	19,438 50	52,690 83		72,129 33
28 Kickapoo Valley & North'n	8,662 37	26,503 31	1,059 46	36,225 14
29 Lake Sup. T. & T. R'y Co.	288 70	5,603 95	955 51	6,848 16
30 Mattoon R'y Co.				
31 Milwaukee & L. Winnebago				
32 Milwaukee & Superior	3,346 09	31,395 62	267 00	35,008 71
33 Marshfield & South Eastern	6,419 34	31,405 23		37,824 57
34 Marinette, Tomahawk & W.	4,111 42	29,840 55	1,225 73	35,177 70
35 Milwaukee & Wauwatosa				
36 Minnesota & Wisconsin	3,577 53	21,422 21		24,999 74
37 Minneapolis, St. P. & Ash'd				
38 Minn., St. P. & S. Ste. M.	206,649 16	1,162,711 66	5,313 11	1,374,673 93
39 Northern Pacific	101,382 58	241,957 29	74,500 60	417,840 47
40 Northwestern Coal R'y Co.		27,482 69	8,526 00	36,008 69
41 Oshkosh Transportation Co.				
42 Packwaukee & Montello				
43 Rice L., Dallas & Menomonie	1,807 26	10,380 53		12,187 79
44 St. Cloud, Grantsburg & A.				
45 Wash'n, Bayfield & Iron R.	3,721 59	53,136 36		56,857 95
46 West Range				
47 Winona Bridge R'y Co.	2,513 39	7,832 92		10,346 31
48 Wisconsin & Michigan	10,903 23	73,250 70	3,471 47	87,625 40
49 Whitcomb & Morris		3,331 55		3,331 55
50 Wisconsin Cen. R. R. Co.	641,800 12	1,943,395 91	3,006 70	2,588,211 73
51 Wisconsin Central Co.	387,188 90	1,202,828 85	2,492 06	1,592,509 81
52 Hawth'n, Nebas'm'n & Sup.		270 44		270 44
53 St. Paul & Duluth	4,180 78	20,356 37		24,537 05

Gross Earnings.

Recapitulation of earnings, year ending June 30, 1899—Continued.

Passenger earnings.	Freight earnings.	Other earnings.	Total gross earnings.	No.
\$1,033 55	\$16,702 31	\$1,642 86	\$20,040 38	1
14,619 67	15,184 37		34,227 68	2
314 30	7,612 73		8,047 21	3
1,962 95	983 81		3,074 48	4
9,304,240 44	28,865,108 07	141,283 98	38,310,632 49	5
9,860,771 54	29,088,576 12	105,605 53	39,054,953 19	6
2,557,202 65	7,836,527 29	82,767 04	10,476,496 98	7
464,808 62	1,517,709 06	20,888 69	2,003,406 37	8
1,245 68	1,516,219 89	729,144 69	2,245,364 58	9
397,410 38	2,036 53		3,282 21	10
	981,408 36	5,759 47	1,384,578 21	11
415 08	27,907 26		28,322 34	12
	15,948 19		15,948 19	13
643,474 01	1,346,096 87	18,153 67	2,007,724 55	14
	116,021 96		116,021 96	15
884 50	26,618 89		27,303 39	16
362,760 13	2,667,505 60	34,702 67	3,064,968 40	17
1,584 88	30,566 94	373 18	3,177 34	18
110,774 17	343,718 85		454,493 02	19
613 33	17,764 61		18,377 94	20
1,043 79	5,640 31	22 28	6,706 38	21
	185 00		185 00	22
19,438 50	52,690 83		72,129 33	23
8,662 37	26,503 31	1,059 46	36,225 14	24
288 70	5,603 95	955 51	6,848 16	25
3,346 09	31,395 62	267 00	35,008 71	26
6,419 34	31,405 23		37,824 57	27
4,111 42	29,840 55	1,225 73	35,177 70	28
3,577 53	21,422 21		24,999 74	29
893,040 52	3,429,186 53	26,357 99	4,348,585 04	30
6,127,119 74	19,193,406 67	717,340 40	26,031,866 81	31
	27,482 69	8,526 00	36,008 69	32
1,807 26	10,380 53		12,187 79	33
3,721 59	53,136 36		56,857 95	34
4,794 07	14,940 59		19,734 66	35
16,087 39	97,305 80	6,727 66	120,121 85	36
	3,331 55		3,331 55	37
641,809 12	1,943,395 81	3,006 70	2,588,211 73	38
661,559 88	1,853,200 61	10,579 12	2,525,339 61	39
	270 44		270 44	40
436,426 60	1,365,042 65	4,628 53	1,806,097 78	41

## Bonds.

Bonds owned June 30, 1899—Wisconsin.

Name of Company.	Total par value.	Rate.	Income or dividend received.	Valuation.
Chicago, Milwaukee & St. Paul....	\$2,410,447 50	.....	\$7,831 01	\$2,409,971 11
Chicago & Northwestern .....	865,351 94	4%	281 31	.....
C., St. P., Minneapolis & Omaha..	50,000 00	.....	.....	50,000 00
Chicago, Burlington & Northern..	.....	.....	1,005 84	.....
Chicago, Wisconsin & Minnesota..	.....	.....	.....	.....
Eastern R'y Co. of Minnesota.....	.....	.....	.....	.....
Minn., St. P. & Sault Ste. Marie	.....	.....	.....	.....
Northern Pacific .....	.....	.....	.....	.....
Wisconsin Central R. R. Co. ....	3,000 00	.....	3,000 00	3,000 00
Wisconsin Central Co. ....	9,247,558 84	.....	425,580 88	490,905 00
Hawthorn, Nebagamon & Superior	.....	.....	.....	.....

Bonds owned June 30, 1899—Whole line.

Name of Company.	Total par value.	Rate.	Income or dividend received.	Valuation.
Chicago, Milwaukee & St. Paul....	\$8,987,500 00	.....	\$29,198 39	\$8,985,723 75
Chicago & Northwestern .....	2,707,000 00	4%	880 00	.....
C., St. P., Minneapolis & Omaha..	2,258,000 00	.....	5,650 00	2,258,000 00
Chicago, Burlington & Northern..	153,000 00	.....	50 00	127,300 00
Chicago, Wisconsin & Minnesota..	.....	.....	1,809 88	.....
Eastern R'y Co. of Minnesota.....	1,325,000 00	6%	14,340 00	1,225,000 00
Minn., St. P. & Sault Ste. Marie..	41,200 00	.....	.....	41,200 00
Northern Pacific .....	6,748,800 00	4%	110,368 33	4,044,727 30
Wisconsin Central R. R. Co. ....	3,000 00	.....	.....	3,000 00
Wisconsin Central Co. ....	9,350,000 00	.....	428,038 19	586,564 00
Hawthorn, Nebagamon & Superior	1,000 00	.....	70 00	1,000 00

*Stocks.*

Stocks owned June 30, 1899—Wisconsin.

Name of Company.	Total par value.	Rate.	Income or dividends received.	Valuation.
Bayfield Harbor & Gt. Western..				
Bayfield Transfer R'y .....	\$1,324,600 00			\$1,324,600 00
Chicago, Milwaukee & St. Paul ..	3,071,635 60		732 99	120,017 02
Chicago & Northwestern .....	17,775,288 60		399,490 50	
C., St. P., Minneapolis & Omaha	15,700 00			15,300 00
Chicago, Burlington & Northern ..				
Chicago, Madison & Northern .....				
Duluth, South Shore & Atlantic..				
Eastern R'y Co. of Minnesota .....				
Green Bay & Western .....	433,900 00			154,610 00
M., St. P., & Sault Ste. Marie .....				
Northern Pacific .....				
Wisconsin Central R. R. Co. ....				
Wisconsin Central Co. ....	11,993,287 00			392,157 17
St. Paul & Duluth .....	84,614 90			2 00

Stocks owned June 30, 1899—Whole line.

Name of Company.	Total par value.	Rate.	Income or dividend received.	Valuation.
Bayfield Harbor & Gt. Western..				
Bayfield Transfer R'y .....	\$1,324,600 00			\$1,324,600 00
Chicago, Milwaukee & St. Paul .....	11,452,786 00	6%	\$2,733 00	459,836 75
Chicago & Northwestern .....	55,604,782 61		1,249,689 00	
C., St. P., Minneapolis & Omaha ..	4,790,444 98		73,560 00	4,319,544 98
Chicago, Burlington & Northern ..	184,550 00		2,625 00	51,250 00
Chicago, Madison & Northern .....				40,000 00
Duluth, South Shore & Atlantic..	464,053 66			634,563 70
Eastern R'y Co. of Minnesota .....	575,700 00		3,000 00	565,701 00
Green Bay & Western .....	433,900 00			154,610 00
M., St. P., & Sault Ste. Marie .....	301,850 00		2,625 00	301,850 00
Northern Pacific .....	9,297,050 00	4%	95,642 00	1,880,025 50
Wisconsin Central R. R. Co. ....				
Wisconsin Central Co. ....	12,148,050 00			500,683 44
St. Paul & Duluth .....	1,640,460 00		10,125 00	209,599 00

*Rents.*

Rents received from lease of tracks, yards and terminals—Wisconsin.

Name of Company.	Tracks.	Yards.	Terminals.	Total.
Chicago, Milwaukee & St. Paul.....				\$63,650 61
Chicago & Northwestern .....	\$4,053 89	\$6,393 44		10,447 33
C., St. P., Minneapolis & Omaha .....				
Chicago, Burlington & Northern .....			262 50	262 50
Duluth, South Shore & Atlantic.....				
Eastern R'y Co. of Minnesota .....				
Northern Pacific .....	9,260 80			9,260 80
Northwestern Coal R'y Co. ....	8,517 00		9 00	8,526 00
Wisconsin Central R. R. Co. ....	76 32		45 00	121 32
Wisconsin Central Co. ....	773 36		68 76	842 12
Hawthorn, Nebagamon & Superior ..				

Rents received from lease of tracks, yards and terminals—Whole line.

Name of Company.	Tracks.	Yards.	Terminals.	Total.
Chicago, Milwaukee & St. Paul .....				\$216,057 75
Chicago & Northwestern .....	\$12,681 43	\$20,000 00		32,681 43
C., St. P., Minneapolis & Omaha .....	22,564 80		2,644 35	25,209 15
Chicago, Burlington & Northern .....				7,668 56
Duluth, South Shore & Atlantic .....	100 00	68 40	3,262 50	3,430 90
Eastern R'y Co. of Minnesota .....			13,766 70	13,766 70
Northern Pacific .....				280,669 35
Northwestern Coal R'y Co. ....	8,517 00		9 00	8,526 00
Wisconsin Central R. R. Co. ....	76 32		45 00	121 32
Wisconsin Central Co. ....	7,867 48		68 76	7,936 24
Hawthorn, Nebagamon & Superior ..	3,617 65		150 00	3,767 65

*Miscellaneous Income.*

Miscellaneous income June 30, 1899—Wisconsin.

Name of Company.	Gross income.	Less expenses.	Net miscellaneous income.
Chicago, Milwaukee & St. Paul .....			\$22,925 59
Chicago & Northwestern .....			40,876 28
Chicago, St. Paul, Minneapolis & Omaha .....	\$41,190 90	\$314 62	52,405 57
Chicago, Burlington & Northern .....			6,028 10
Chicago, Wisconsin & Minnesota .....	2,915 53		2,915 53
Duluth, South Shore & Atlantic .....	28 00		28 00
Duluth, Superior & Western .....			23 27
Dunbar & Wausaukee .....	27,303 39	5,549 46	21,753 93
Eastern R'y Co. of Minnesota .....			
Milwaukee & Lake Winnebago .....	1,230 45	251 32	979 13
Milwaukee & Superior .....	729 58		729 58
Northern Pacific .....			
Northwestern Coal R'y Co. ....	151,696 10	111,935 37	39,760 73
Wisconsin Central R. R. Co. ....	4,540 72		4,540 72
Wisconsin Central Co. ....	1,000 00		1,000 00
St. Paul & Duluth .....			

Miscellaneous income June 30, 1899—Whole line.

Name of Company.	Gross income.	Less expense.	Net miscellaneous income.
Chicago, Milwaukee & St. Paul .....			\$85,479 46
Chicago & Northwestern .....			127,869 48
Chicago, St. Paul, Minneapolis & Omaha .....	\$128,853 69	\$984 21	80,034 55
Chicago, Burlington & Northern .....			10,046 84
Chicago, Wisconsin & Minnesota .....	5,246 12		5,246 12
Duluth, South Shore & Atlantic .....	5,905 88	624 61	5,281 27
Duluth, Superior & Western .....			23 27
Dunbar & Wausaukee .....	27,303 39	5,549 46	21,753 93
Eastern R'y Co. of Minnesota .....			233,604 45
Milwaukee & Lake Winnebago .....	1,230 45	251 32	979 13
Milwaukee & Superior .....	729 58		729 58
Northern Pacific .....	795,596 67		795,596 67
Northwestern Coal R'y Co. ....	151,696 10	111,935 37	39,760 73
Wisconsin Central R. R. Co. ....	4,540 72		4,540 72
Wisconsin Central Co. ....	4,002 19		4,002 19
St. Paul & Duluth .....	203,525 13	41,057 90	167,467 23



*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899 — Conducting transportation.

Name of Company.	Switching charges, balance.	Car mileage balance-	Loss and damages.
1 Abbotsford & Northeastern .....	\$154 72	\$123 50	\$60 00
2 Ahnapee & Western .....			123 11
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western.....			
6 Bayfield Transfer R'y .....			
7 Chicago, Milwaukee & St. Paul .....	79,876 17	61,767 40	35,786 69
8 Chicago & Northwestern .....	63,807 07	78,403 07	49,806 55
9 Chicago, St. Paul, Minneapolis & Omaha	2,549 73		12,961 99
10 Chicago, Burlington & Northern .....	6,522 38	15,038 29	1,394 47
11 Chicago, Lake Shore & Eastern .....	270 00		
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....			
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonic .....			
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....	565 81	377 52	182 46
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			526 99
20 Dunbar & Wausaukee .....			
21 *Eastern Railway Co. of Minnesota .....			
22 Fairchild & North Eastern .....			18 31
23 Green Bay & Western .....	4,963 31	6,518 04	2,259 59
24 Hazelhurst & South Eastern .....			20 35
25 Iola & Northern .....			20 35
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	238 49	1,853 79	68 72
28 Kickapoo Valley & Northern .....		996 16	265 03
29 Lake Superior Term. & Trans. R'y Co. ....		12 04	5 00
30 Mattoon Railway Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....		339 96	10 00
33 Marshfield & South Eastern .....		279 35	90 00
34 Marinette, Tomahawk and Western .....			
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....		18 38	178 67
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie	3,469 54	12,246 54	4,580 38
39 Northern Pacific .....		886 39	208 47
40 Northwestern Coal R'y Co. ....			123 26
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonic .....		33 64	6 90
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	375 00		
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....	2,791 69	2,159 17	287 77
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....	4,360 60	10,412 76	10,224 52
51 Wisconsin Central Co. ....	23,160 05	6,484 16	8,742 09
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	1 02	197 46	148 27

\*Cannot give for Wisconsin.

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899 — Continued.

Injuries to persons.	Barges, floats, tugs, ferry boats, expenses of including wages, fuel and supplies.	Other expenses.	Total.	No.
		\$117 00	\$4,563 92	1
		1,622 64	9,951 01	2
				3
				4
		73 70	3,420 52	5
\$48,654 92		173,163 26	3,240,736 25	6
113,177 19	\$1,123 01	102,947 76	4,055,902 03	7
17,457 78		68,361 18	1,206,293 24	8
3,513 61		26,173 91	387,549 23	9
30 00		75 08	25,708 55	10
		47 84	2,820 50	11
		3,562 90	51,203 89	12
				13
5 00		4,660 38	9,511 50	14
		107 01	3,963 73	15
509 99		3,212 78	72,811 46	16
				17
4,671 95		4,084 58	27,238 68	18
		713 46	5,549 46	19
				20
250 00			9,106 89	21
1,242 35		2,955 96	124,999 26	22
		61 15	9,666 80	23
		7 00	3,737 65	24
25 00			7,733 56	25
		960 92	19,228 34	26
		421 21	14,084 72	27
1,772 75			34,120 97	28
				29
				30
		1,313 77	14,175 98	31
			8,362 87	32
		401 18	13,591 00	33
				34
			8,425 65	35
				36
4,045 60		49,990 00	362,381 98	37
2,363 62		18,141 30	104,375 94	38
		157 69	14,353 12	39
				40
80 00		873 82	5,578 59	41
		953 72	29,654 17	42
				43
			919 07	44
52 60		85 59	22,662 64	45
			1,335 25	46
7,743 10		14,395 09	764,784 01	47
18,537 06		12,236 36	613,599 53	48
				49
158 45		4,046 68	9,613 20	50
				51
				52
				53

## Operating Expenses.

Operating expenses, Wisconsin, year ending June 30, 1899 — Continued.

Name of Company.	Wages of engineers, firemen and roundhouse men.	Fuel for locomotives.	Water supply for locomotives.	All other supplies for locomotives.
1 Abbotsford & Northeastern	\$1,500 00	\$1,283 27	\$1 75	\$17 29
2 Ahnapee & Western	1,669 04	2,628 10		239 85
3 Ashland Siskiwit				
4 Big Falls R'y Co.				
5 Bayfield Harbor & G. W.]				
6 Bayfield Transfer R'y ...]	1,842 25	828 49	33 00	71 05
7 C., M. & St. P.	671,193 77	684,259 77	22,141 76	25,694 96
8 Chicago & Northwestern	915,285 98	805,089 62	39,960 93	41,430 91
9 C., St. P., M. & O.	253,071 06	301,609 83	13,436 28	12,174 47
10 Chicago, Burlington & Nor.	81,196 95	68,459 82	4,344 10	2,608 54
11 Chicago, Lake Shore & E. ...	7,467 25	7,307 91	30 00	312 35
12 Chicago & Lake Superior	600 00	760 58		
13 Chicago, Madison & North'n	14,167 53	7,876 13	981 05	483 00
14 Chicago, Wis. & Minn.				
15 Chippewa Riv. & Menomonie	2,644 37	1,384 35		109 69
16 Drummond & S. W.	1,219 21	1,823 76		175 07
17 Duluth, S. S. & Atlantic..	15,580 27	16,530 15	1,086 22	610 69
18 Duluth Short Line				
19 Duluth, Superior & Western	1,424 14	2,322 16	221 00	74 55
20 Dunbar & Wausaukee	1,420 00	900 00		
21 Eastern R'y Co. of Minn.				
22 Fairchild & North Eastern	4,230 00	2,079 06		183 52
23 Green Bay & Western	28,819 47	35,133 61	1,390 81	1,280 63
24 Hazelhurst & South Eastern	3,115 24	4,166 48		195 94
25 Iola & Northern	937 87	1,141 50		48 68
26 Glenwood & Northeastern	1,681 06	1,500 00		38 96
27 Kewaunee, Green Bay & W.	3,963 26	5,254 96	9 42	155 46
28 Kickapoo Valley & Northern	2,295 47	3,265 24	7 49	114 67
29 L. Superior T. & T. R'y Co.	6,945 71	5,777 34	274 79	516 31
30 Mattoon R'y Co.				
31 Milwaukee & L. Winnebago				
32 Milwaukee & Superior	2,777 26	3,824 63	300 00	
33 Marshfield & South Eastern	2,364 39	1,826 90	138 23	
34 Marinette, Tomahawk & W.	5,043 90	4,119 51	100 00	497 11
35 Milwaukee & Wauwatosa...				
36 Minnesota & Wisconsin.	1,940 80	2,235 66	48 16	94 85
37 Minneapolis, St. P. & Ashl'd				
38 M., St. P. & S. Ste. Marie	73,088 73	74,425 28	4,428 07	4,048 29
39 Northern Pacific	14,551 92	21,827 78	1,814 38	1,632 29
40 Northwestern Coal R'y Co.	3,132 36	2,479 44	230 97	141 92
41 Oshkosh Transportation Co.				
42 Pockwaukee & Montello				
43 Rice L. Dallas & Menomonie	1,303 51	845 87	108 00	31 04
44 St. Cloud, Grantsb. & Ashl'd				
45 Washburn, Bayfield & I. R.	7,888 70	11,029 66	175 00	210 00
46 West Range				
47 Winona Bridge R'y Co.	498 05	49 15		
48 Wisconsin & Michigan	4,997 85	6,066 38	181 22	607 26
49 Whitecomb & Morris	1,106 00	175 00		54 25
50 Wis., Cen. P. R. Co.	170,909 73	193,224 16	8,993 97	5,534 27
51 Wisconsin Central Co.	120,929 42	135,976 20	6,940 04	3,897 47
52 Trawth'n, Nebacam'n & Sup.				
53 St. Paul & Duluth	1,642 14	1,756 13	112 57	91 36

\*Cannot give for Wisconsin.

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899 — Continued.

Wages of other trainmen.	All other train supplies.	Wages of switchmen, flagmen and watchmen.	Expenses of telegraph including train dispatchers and operators.	Wages of station agents, clerks and laborers.	Station supplies.	No.
\$600 00	\$8 05			\$660 00	\$37 65	1
1,087 35	211 22	\$420 00	\$122 74	1,573 28	213 68	2
						3
						4
						5
528 00	44 03					6
532,973 00	65,119 33	221,829 80	153,664 59	417,521 81	47,084 12	7
660,353 22	108,825 41	310,686 59	174,853 36	540,328 63	49,818 73	8
187,807 37	32,843 09	67,894 53	51,828 47	166,156 83	18,240 69	9
63,415 57	21,720 28	28,423 02	18,812 25	44,948 50	3,983 04	10
	13 28	8,843 43		1,304 00	55 30	11
480 00		456 25		475 83		12
	10,806 13	1,016 09	2,318 84	7,945 58	745 46	13
	268 81	438 90				14
629 39	9 29					15
11,137 32	2,006 80	4,672 68	3,329 71	12,363 30	665 76	16
						17
283 43		2,237 35	417 57	10,717 85	267 11	18
516 00						19
						20
1,656 00				690 00		21
13,873 17	1,579 97	6,778 94	2,279 58	19,288 76	1,558 69	22
1,428 11	92 94			606 84	10	23
870 00	25 59	368 00		361 30	19 36	24
4,488 54						25
3,083 76	353 77	702 53	306 50	2,714 65	79 09	26
2,169 29	169 61			4,063 97	326 58	27
		14,397 54	102 00	3,601 77	714 72	28
						29
						30
2,705 94				2,904 42		31
1,964 00				1,700 00		32
2,170 62	2,165 85			992 83	200 00	33
						34
1,717 37		960 00		1,089 73	142 03	35
						36
64,951 00	16,532 03	3,503 73	17,711 20	56,767 21	4,081 25	37
10,971 26	2,570 09	9,871 26	5,487 48	13,010 44	2,029 96	38
		6,332 92			1,754 56	39
						40
						41
884 16	13 34	700 00	66 16	1,243 01	82 14	42
						43
6,589 83	50 00	300 00	697 26	1,350 00	35 00	44
						45
		371 87				46
3,410 60	282 96	55 21	159 80	1,781 50	143 04	47
						48
126,152 01	22,960 12	36,355 62	42,364 87	103,309 18	7,854 01	49
82,975 92	17,752 23	48,595 21	28,873 15	94,072 19	8,400 98	50
						51
1,120 67	346 39	663 56	274 26	1,320 35	104 50	52
						53

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899—Maintenance of equipment.

Name of Company.	Repairs and renewals of locomotives.	Repairs and renewals of passenger cars.	Repairs and renewals of freight cars.
1 Abbotsford & Northeastern .....	\$56 53		\$30 82
2 Ahnapee & Western .....	898 15	372 03	75 00
3 Ashland Siskiwit .....			
4 Big Falls Railway Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....	95 56	1 75	6 20
7 Chicago, Milwaukee & St. Paul .....	306,749 52	132,147 10	396,891 13
8 Chicago & Northwestern .....	604,844 88	178,423 71	656,412 76
9 Chicago, St. Paul, Minneapolis & Omaha .....	204,231 70	101,754 81	201,216 68
10 Chicago, Burlington & Northern .....	39,059 00	22,135 59	42,830 06
11 Chicago, Lake Shore & Eastern .....	2,741 19		3,135 22
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....	5,513 90	1,369 24	3,146 31
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonee .....	887 05		973 05
16 Drummond & South Western .....	398 09		592 23
17 Duluth, South Shore & Atlantic .....	5,314 83	2,447 29	8,141 84
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....	401 68		130 40
20 Dunbar & Wausaukee .....			
21 *Eastern Railway Co. of Minnesota .....			
22 Fairchild & North Eastern .....	716 84	17 28	414 54
23 Green Bay & Western .....	40,529 25	16,165 61	9,868 87
24 Hazelhurst & South Eastern .....	270 26	34 00	1,439 00
25 Iola & Northern .....	921 89	167 21	27 09
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	1,249 63	398 30	482 65
28 Kickapoo Valley & Northern .....	3,534 31	98 45	304 37
29 Lake Superior Term. & Trans. R'y Co. ....	2,523 91		875 47
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....			
33 Marshfield & South Eastern .....	101 53		458 04
34 Marinette, Tomahawk & Western .....	3,501 00	638 34	391 45
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	40 14	1 60	15 25
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	44,848 01	14,578 66	88,152 79
39 Northern Pacific .....	7,850 72	3,010 35	10,722 83
40 Northwestern Coal R'y Co. ....	447 66		
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonee .....	59 63	10 71	90
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	6,270 91	150 00	2,745 00
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....	4,743 39	677 00	4,399 84
49 Whitcomb & Morris .....	56 50		
50 Wisconsin Central R. R. Co. ....	78,511 95	31,742 66	81,009 09
51 Wisconsin Central Co. ....	55,146 51	26,437 48	56,585 99
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	809 40	395 89	1,225 06

\*Cannot give for Wisconsin.

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899—Continued.

Repairs and renewals of ferry boats, tugs, floats and barges.	Shop machinery, tools, etc.	Other expenses.	Total.	No.
		\$31 18	\$118 53	1
		297 97	1,643 15	2
				3
				4
				5
	\$1 25	1 00	105 76	6
\$8,929 20	22,474 50	84,278 00	951,469 45	7
81 27	35,507 43	174,138 59	1,649,408 64	8
10,921 27	20,972 39	40,622 90	579,719 75	9
1,949 92	2,693 53	9,737 17	118,405 27	10
			5,876 41	11
			74 15	12
914 97	425 31	413 59	11,783 32	13
				14
		1,502 98	3,363 08	15
	396 48		1,386 80	16
	556 49	2,170 18	18,630 63	17
				18
			532 08	19
			2,000 00	20
				21
1,640 84	3,064 63	8,614 74	1,148 66	22
			79,883 94	23
			1,743 26	24
			1,106 19	25
			717 87	26
		600 00	2,730 58	27
	421 53	552 81	4,911 57	28
		86 69	3,486 07	29
				30
			2,289 53	31
	85 07	649 32	1,294 86	32
	93 97		4,674 76	33
				34
			57 00	35
				36
	6,017 69	4,808 89	158,401 04	37
	428 99		22,012 89	38
			447 66	39
				40
	1 65		72 89	41
				42
		1,399 63	10,665 54	43
				44
				45
				46
	109 03	30 57	9,959 83	47
	78 40		134 90	48
	5,229 74	5,023 97	201,517 41	49
	3,558 92	3,376 39	145,105 29	50
				51
83 65	123 25	87 24	2,724 49	52
				53

*Operating Expenses.*

Operating expenses, Wisconsin, June 30, 1899—Apportioned between passenger and freight traffic.

Name of Company.	Repairs of roadway.	Renewals of rails.	Renewals of ties.	Repairs of bridges and culverts.
1 Abbotsford & Northeastern.....	\$1,886 28	\$733 28	\$1,078 92	\$12 33
2 Ahnapee & Western .....	4,233 64		1,709 73	212 57
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ]				9 00
6 Bayfield Transfer R'y .....	511 63			
7 Chicago, Milwaukee & St. P.	660,269 71	152,899 55	201,630 12	260,619 31
8 Chicago & Northwestern....	834,863 84	96,094 25	146,897 28	168,579 23
9 C., St. P., M. & O. ....	439,683 88	31,653 12	77,964 74	133,462 84
10 Chicago, Burlington & N....	66,588 92	10,908 91	17,761 61	21,209 00
11 Chicago, Lake Shore & E....	3,868 97	183 42	584 45	
12 Chicago & Lake Superior .....				
13 Chicago, Madison & North'n	17,494 01	83 03	5,610 41	16,323 18
14 Chicago, Wis. & Minn. ....				
15 Chippewa Riv. & Menomoneie	5,265 66			35 06
16 Drummond & S. W. ....	3,811 39	1,920 50		
17 Duluth, So. Sh. & Atlantic	27,601 97		5,502 97	5,282 36
18 Duluth Short Line .....				
19 Duluth, Superior & Western	2,397 46	323 82	1,452 04	18,753 36
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....				
22 Fairchild & North Eastern..	4,083 68			
23 Green Bay & Western .....	52,609 35	37,997 84	17,863 26	
24 Hazelhurst & S. E. ....	966 65			
25 Iola & Northern .....	353 65		41 65	
26 Glenwood & Northeastern ..		600 00	434 53	
27 Kewaunee, Green Bay & W.	6,643 05		1,683 10	528 98
28 Kickapoo Valley & Northern	11,453 49	284 33	2,911 69	2,253 66
29 Lake Sup. T. & T. R'y Co.	3,221 25	12 05	692 59	389 20
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago				
32 Milwaukee & Superior .....				
33 Marshfield & South Eastern	205 07		587 21	380 01
34 Marquette, Tomahawk & W.	7,072 25			910 45
35 Milwaukee & Wauwatosa....				
36 Minnesota & Wisconsin .....	3,157 98		1,757 81	190 41
37 Minneapolis, St. P. & Ashl'd				
38 M., St. P. & S. Ste. Marie ..	95,521 25	884 98	31,940 37	30,914 52
39 Northern Pacific .....	29,395 74	1,764 03	7,886 11	3,783 36
40 Northwestern Coal R'y Co. ..	2,396 74			307 01
41 Oshkosh Transportation Co.				
42 Oshkosh & Montello .....				
43 Rice Lake, Dallas & Menom.	1,387 86	148 25	486 71	
44 St. Cloud, Grantsb. & Ashl'd				
45 Washburn, Bayfield & I. R.	26,472 25	3,838 85	412 06	
46 West Range .....				
47 Winona Bridge R'y Co. ....	5,545 92		231 78	
48 Wisconsin & Michigan .....	6,975 54	1,216 48		
49 Whitcomb & Morris .....	1,000 00		100 00	
50 Wis. Cen. R. R. Co. ....	149,442 47	26,447 96	35,504 36	44,972 16
51 Wisconsin Central Co. ....	96,689 65	17,365 53	23,397 36	26,648 23
52 Hawth'n, Nebagam'n & Sup.				
53 St. Paul & Duluth .....	1,836 96	12 55	382 40	313 83

*Operating Expenses.*

Operating expenses, Wisconsin, June 30, 1899—Continued.

Repairs of fences, road crossings, signs and cattle guards.	Repairs of buildings.	Repairs of docks and wharves.	Repairs of telegraphs.	Other expenses.	Total.	No.
	\$8 51			\$20 73	\$3,740 05	1
					6,155 94	2
						3
						4
						5
	47 43			2 75	571 11	6
\$62,139 00	137,715 09		\$10,924 54	567,369 05	2,053,567 37	7
55,213 69	180,003 98	\$21,621 51	6,386 34	6,546 57	1,516,206 65	8
12,363 43	72,510 04	3,800 19	6,930 39	309,040 00	778,678 08	9
3,023 55	13,991 15		1,614 26	107 27	135,144 68	10
14 27	2,104 65		45 00	9 78	6,443 70	11
					1,029 36	12
1,717 47	3,880 95		199 93	176 20	45,487 18	13
						14
				393 55	5,659 21	15
				1,236 67	7,003 62	16
251 85	1,586 26	1,158 89	303 28	101 39	41,638 97	17
						18
4 47	691 68	40,550 71	28 65		64,202 19	19
					2,000 00	20
						21
					4,683 68	22
426 41	11,269 64	87 69	665 88		137,663 35	23
	14 35				981 00	24
					395 30	25
77 40					1,111 93	26
78 53	134 76	430 19	15 98		9,514 59	27
259 92	1,176 07			9 50	18,348 68	28
26 62	438 78				4,780 49	29
						30
						31
					3,837 71	32
72 67	12 38			5,220 90	6,478 24	33
					7,982 70	34
						35
207 00	36 81		63	25 02	5,375 66	36
						37
1,651 95	16,252 48	873 80	2,025 18		180,064 54	38
105 84	2,218 58	3,181 88	423 42	1,696 83	46,927 73	39
	79 52				2,783 27	40
						41
21 13	23 57			1 50	2,069 32	42
						43
184 00			5 00		30,912 16	44
						45
					5,777 70	46
3 24	1,017 36		261 49		9,474 11	47
					1,100 00	48
5,531 10	22,779 66	2,058 05	5,150 06	9,135 18	301,103 00	49
3,066 71	17,349 42	1,412 30	4,174 44	5,064 29	195,167 93	50
						51
50 77	493 12	38 65	39 77	4 69	3,172 74	52
						53



## Operating Expenses.

Operating expenses, Wisconsin, year ending June 30, 1899—General expenses.

Name of Company.	Salaries of officers.	Salaries of clerks.	General office expenses and supplies	Agencies, including salaries and rent.
1 Abbotsford & Northeastern.	\$720 00		\$6 38	
2 Ahnapee & Western	1,200 00	\$12 00	25 00	
3 Ashland Siskiwt				
4 Big Falls R'y Co.				
5 Bayfield Harbor & Gt. W'n]				
6 Bayfield Transfer R'y	466 66	73 00	193 59	
7 Chicago, Milwaukee & St. P.	71,064 85	60,600 13	13,423 54	91,897 62
8 Chicago & Northwestern	46,807 96	106,599 26	28,465 11	101,980 77
9 C., St. P., Minn. & Omaha	34,070 43	28,564 99	5,403 73	29,370 42
10 Chicago, Burlington & N'n	14,519 06	15,129 55	2,240 89	21,595 13
11 Chicago, L. Shore & East'n	1,061 73	1,061 54	72 96	
12 Chicago & L. Superior				
13 Chicago, Madison & North'n	1,112 61	1,445 07	522 53	2,928 86
14 Chicago, Wisconsin & Minn.				
15 Chippewa River & Menom.	1,600 00	274 60	154 37	
16 Drummond & South West'n		211 99	15 18	
17 Duluth, So. Shore & Atl.	2,501 04	2,946 62	296 69	1,891 57
18 Duluth Short Line				
19 Duluth, Sup. & Western	3,013 55	760 00	34 52	
20 Dunbar & Wausaukee				
21 East'n R'y Co. of Minnesota	1,000 00	150 00	26 50	
22 Fairchild & North East'n.	10,200 00	5,820 00	653 64	1,681 06
23 Green Bay & Western				
24 Hazelhurst & So. Eastern				
25 Iola & Northern				
26 Glenwood & Northeastern				
27 Kewaunee, G. Bay & West'n	600 00			
28 Kickapoo Valley & North'n	18,800 00	1,800 00	225 78	
29 Lake Sup. T. & T. R'y Co.	3,060 00	1,860 00	7 50	
30 Mattoon R'y Co.				
31 Milwaukee & L. Winnebago	1,380 00	226 00		
32 Milwaukee & Superior	1,800 00		1,500 00	
33 Marshfield & South Eastern	1,750 00		765 98	
34 Marinette, Tom. & Western				
35 Milwaukee & Wauwatosa	1,800 00	915 00	680 54	
36 Minnesota & Wisconsin				
37 Minn., St. Paul & Ash'l'd.	7,178 16	12,220 18	3,942 19	
38 M., St. P., & Sault St. Marie	3,401 22	2,972 44	582 78	3,858 99
39 Northern Pacific	4,308 37	2,487 58	166 98	
40 Northwestern Coal R'y Co.				
41 Oshkosh Transportation Co.				
42 Jackwaukee & Montello	1,675 00			
43 Rice Lake, Dallas & Menom.				
44 St. Cloud, G'tsburg & Ash'l'd	1,441 13	794 20	11 00	
45 Wash'n. Bayfield & I. Riv.				
46 West Range	377 47	36 83		
47 Winona Bridge R'y Co.	3,065 07	1,644 82	148 45	123 84
48 Wisconsin & Michigan				
49 Whitcomb & Morris				
50 Wisconsin Central R. R. Co.	36,954 35	38,105 80	12,488 61	52,304 40
51 Wisconsin Central Co.	23,987 30	24,783 47	8,061 71	33,638 18
52 Hawthorn, Nebag. & Sup.				
53 St. Paul & Duluth	475 32	271 45	67 16	

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899—Continued.

Advertising.	Commissions.	Insurance.	Expenses of fast freight lines.	Expenses of traffic associations.	Expenses of stock yards and elevators.	No.
.....		\$26 25				1
.....						2
.....						3
.....						4
.....						5
\$25 70						6
18,090 41		28,371 92			\$12,407 19	7
34,791 78	\$127,618 95	750 07		\$21,506 21		8
3,874 60	5,998 66	4,268 38		9,629 08	35,923 03	9
3,368 24		5,773 92				10
.....						11
.....	242 65	670 10				12
.....		95 00				13
.....						14
.....						15
252 69		377 94				16
.....						17
.....		1,243 45				18
.....						19
.....						20
.....						21
363 05		1,881 73				22
.....		97 63				23
.....		29 75				24
.....						25
15 65		423 60				26
.....		92 40				27
.....		147 50		39 75		28
.....						29
.....						30
.....		239 60				31
.....		104 68				32
.....						33
.....		185 50			100 70	34
.....						35
3,619 91		4,297 04				36
1,339 36	506 25	1,425 03		1,620 35	65	37
.....		1,013 63				38
.....						39
5 95						40
.....						41
4 00		228 22				42
.....						43
.....		31 45				44
28 38	121 77	307 06				45
.....						46
8,534 29		6,833 53				47
5,353 27		4,752 62				48
.....						49
.....		85 91				50
.....						51
.....						52
.....						53

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899—Continued.

Name of Company.	Rentals of tracks, yards and terminals.	Rentals not otherwise provided for.	Legal expenses.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....			\$296 75
3 Ashland Siskiwi .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....			
7 Chicago, Milwaukee & St. Paul .....	\$61,464 02	\$22,909 50	4,894 24
8 Chicago & Northwestern .....	27,291 95	4,873 68	53,919 33
9 Chicago, St. Paul, Minneapolis & Omaha .....	51,971 54	2,713 68	6,523 27
10 Chicago, Burlington & Northern .....	22,599 52		5,946 36
11 Chicago, Lake Shore & Eastern .....			1,016 28
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....			1,059 94
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....			
16 Drummond & Southwestern .....			
17 Duluth, South Shore & Atlantic .....	14,042 56	531 24	1,331 58
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....		196 00	10 00
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....			
22 Fairchild & North Eastern .....			
23 Green Bay & Western .....	4,709 62		215 77
24 Hazelhurst & South Eastern .....	720 46		
25 Iola & Northern .....			54 45
26 Glenwood & Northeastern .....	773 36	2,383 26	
27 Kewaunee, Green Bay & Western .....		108 00	30 00
28 Kickapoo Valley & Northern .....			692 99
29 Lake Superior Ter. & Transfer R'y Co. ....	1,664 00	804 46	517 89
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....			
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....			
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	57 30		250 00
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....			3,946 50
39 Northern Pacific .....		185 88	3,355 48
40 Northwestern Coal R'y Co. ....			15 00
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....			20 75
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			2,592 90
46 West Range .....			
47 Winona Bridge R'y Co. ....		9 14	
48 Wisconsin & Michigan .....	5,388 04	260 40	356 07
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....	83,771 76	6,185 70	7,580 80
51 Wisconsin Central Co. ....	2,758 82	4,740 54	6,211 92
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....			98 43

*Operating Expenses.*

Operating expenses, Wisconsin, year ending June 30, 1899—Continued.

Stationery and printing.	Other general expenses.	Total.	Percentage of operating expenses to earnings.	Mileage upon which based.	No.
\$25 86	\$2 50	\$754 74	45.79	15.16	1
75 00	129 81	1,764 81		34	2
				21	3
					4
					5
29 00		787 95	168.89	9.86	6
40,336 81	38,773 79	494,234 02	56.05	1,650.46	7
6,951 16	4,261 11	565,817 34	62.37	1,625.73	8
3,228 69	11,139 08	232,679 48	76.73	621.66	9
1,338 75	1,769 55	94,280 97	61.18	223.10	10
206 02	249 81	3,668 34	64.13	17.33	11
		145 67			12
1,535 93		10,094 81	123.68	91.31	13
	407 73	2,531 70	74.37	24	14
	141 16	368 33			15
1,606 09	407 97	26,185 99	74.51	111.95	16
					17
103 25	90 00	5,450 77	83.97	6.16	18
			120.32	13.50	19
			43.02	38.15	20
189 67	521 49	1,887 66	50.50	27	21
2,314 61	3,567 61	31,412 09	82.28	225	22
31 85	2 50	852 44	72	17	23
3 00		87 20	79.42	4.70	24
		3,156 62		14.15	25
257 11	4,074 23	5,508 59	51.27	36.70	26
72 85	1,089 82	5,773 84	150	51.68	27
426 49	104 03	8,325 35		15.70	28
					29
	993 39	2,599 39	65	25.04	30
324 59	72 02	3,936 26		33	31
390 69		3,011 35	86.18	33.30	32
					33
125 99	47 54	4,162 57		21	34
					35
5,113 88	1,818 39	42,136 18	54.05	271.42	36
1,574 62	1,904 98	22,728 03	46.92	87.37	37
703 64	1,123 86	9,819 04	76.10	12.82	38
					39
203 69	42 94	1,948 33	79.34	7.52	40
					41
58 67	406 02	5,536 14	135	34	42
					43
7 46	33 22	495 57	69.05	54	44
376 29	599 83	12,420 02	62	40.12	45
				6	46
15,865 70	6,023 65	274,648 59	59.58	581.80	47
10,428 39	3,935 71	128,641 92	68.29	292.36	48
					49
25 38	70 74	1,094 39	67.98	13.75	50
					51
					52
					53

*Operating Expenses.*

Recapitulation of operating expenses, year ending June 30, 1899, apportioned between passenger and freight traffic.

Name of Company.	MAINTENANCE OF WAYS AND STRUCTURES.		MAINTENANCE OF EQUIPMENT.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbottsford & Northeastern.	\$3,740 05	\$3,740 05	\$118 53	\$118 53
2 Ahnapee & Western .....	6,155 94	6,155 94	1,643 15	1,643 15
3 Ashland Siskiwi				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ]				
6 Bayfield Transfer R'y ....	571 11	571 11	105 71	105 71
7 Chicago, Milwaukee & St. P.	2,053,567 37	6,970,697 14	951,469 45	3,229,699 43
8 Chicago & Northwestern....	1,516,206 65	4,743,008 31	1,649,408 64	5,159,691 72
9 C., St. P. Minn. & Omaha..	778,678 03	1,757,738 21	579,719 75	1,308,622 47
10 Chicago, Burlington & N'n..	135,144 68	225,241 14	118,406 27	197,842 12
11 Chicago, L. Shore & East'n	6,443 70	81,102 88	5,876 41	175,328 83
12 Chicago & Lake Superior...	1,029 36	1,029 36	74 15	74 15
12 Chicago, Madison & N'n....	45,487 18	185,266 27	13,036 81	115,351 44
14 Chicago, Wisconsin & Minn.				
15 Chippewa River & Menom....	5,659 21	5,659 21	3,363 08	3,363 08
16 Drummond & South West..	7,003 62	7,003 62	1,386 80	1,386 80
17 Duluth, So. Shore & Atl..	41,688 97	373,085 74	18,630 63	166,730 50
18 Duluth Short Line .....				
19 Duluth, Superior & Western	64,202 19	64,202 19	532 08	532 08
20 Dunbar & Wausaukee .....			1,000 00	1,000 00
21 Eastern R'y Co. of Minn....	83,993 96	286,957 23	30,655 08	159,246 09
22 Fairchild & North Eastern.	4,083 68	4,083 68	1,148 66	1,148 66
23 Green Bay & Western .....	137,663 35	137,663 35	79,883 94	79,883 94
24 Hazelhurst & South Eastern	981 00	981 00	1,743 26	1,743 26
25 Iola & Northern .....	395 30	395 30	1,106 19	1,106 19
26 Glenwood & Northeastern..	1,111 93	1,111 93	717 87	717 87
27 Kewaunee, Green Bay & W.	9,514 59	9,514 59	2,730 58	2,730 58
28 Kickapoo Valley & North'n	18,348 66	18,348 66	4,911 47	4,911 47
29 Lake Sup. T. & T. R'y Co.	4,002 09	4,002 09	3,486 07	3,486 07
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago				
32 Milwaukee & Superior .....	3,837 71	3,837 71	2,289 53	2,289 53
33 Marshfield & South Eastern	6,478 24	6,478 24	1,294 86	1,294 86
34 Marinette, Tom. & Western	7,982 70	7,982 70	4,674 76	4,674 76
35 Milwaukee & Wauwatosa..				
36 Minnesota & Wisconsin .....	5,375 66	5,375 66	57 00	57 00
37 Minn., St. Paul & Ash'd..				
38 M., St. P., & Sault St. Marie	180,064 54	536,003 12	158,401 04	461,553 91
39 Northern Pacific .....	46,927 73	3,548,793 26	22,012 89	1,914,597 03
40 Northwestern Coal R'y Co.	2,783 27	2,783 27	447 66	447 66
41 Oshkosh Transportation Co.				
42 Packwaukee & Montello....				
43 Rice Lake, Dallas & Menom.	2,069 32	2,069 32	72 89	72 89
44 St. Cloud, G'tsb'g & Ash'd.				
45 Washb'n, Bayfield & I. Riv.	30,912 16	30,912 16	10,665 54	10,665 54
46 West Range .....				
47 Winona Bridge R'y Co.....	5,777 70	11,020 53		
48 Wisconsin & Michigan.....	9,474 11	16,616 53	9,959 83	15,814 22
49 Whitcomb & Morris .....	1,100 00	1,100 00	134 90	134 90
50 Wisconsin Central R. R. Co.	301,103 00	301,103 00	201,517 41	201,517 41
51 Wisconsin Central Co. ....	195,167 93	281,953 08	145,105 29	209,629 13
52 Hawth'n, Nebagamon & Su.				
53 St. Paul & Duluth.....	3,172 74	233,288 67	2,800 24	205,899 76



*Rentals.*

Rentals paid according to the report of June 30, 1899. A. Rentals paid for lease of roads.

Name of Company.	Interest on bonds guaranteed.	Dividends on stocks guaranteed.	Cash.	Total.
Chicago & Northwestern .....			\$6,815 25	\$6,815 25
Duluth, Superior & Western .....			3,186 72	3,186 72
Eastern R'y Co. of Minnesota .....			6,381 39	6,381 39
Wisconsin Central R. R. Co. ..			217,699 57	217,699 57
Wisconsin Central Co. ....			69,646 56	69,646 56
St. Paul & Duluth .....	\$2,464 79			2,464 79

Rentals paid according to the report of June 30, 1899. A. Rentals paid for lease of roads—Continued.

Name of Company.	Interest on bonds guaranteed.	Interest on stocks guaranteed.	Cash.	Total
Chicago & Northwestern .....			\$21,319 52	\$21,319 52
Chicago, Burlington & Northern .....				145,231 89
Duluth, Superior & Western ..			3,186 72	3,186 72
Eastern R'y Co. of Minnesota ..			91,133 16	91,133 16
Northern Pacific .....	\$61,520 00	\$61,520 00		61,520 00
Wisconsin Central R. R. Co. ...			217,699 57	217,699 57
Wisconsin Central Co. ....			303,719 55	303,719 55
St. Paul & Duluth .....	37,600 00		48,700 59	86,300 59

Rentals.

Rentals paid according to report of June 30, 1899. B. Rents paid for lease of other property.

NAME OF COMPANY.	WISCONSIN.			
	Tracks.	Yards.	Terminals.	Total.
Chicago, Milwaukee & St. Paul				\$125,114 63
Chicago & Northwestern	\$6,111 11	\$3,836 06	\$17,344 76	34,107 18
Duluth, South Shore & Atlantic	13,017 74		1,024 82	14,042 56
Eastern R'y Co. of Minnesota	9,283 13		2,939 90	12,223 03
Green Bay & Western	1,200 00		3,509 62	4,709 62
Hazelhurst & South Eastern	720 46			720 46
Milwaukee & Lake Winnebago	5,190 60			5,190 60
Milwaukee & Superior			120 00	120 00
Minnesota & Wisconsin			57 30	57 30
Northern Pacific	9,997 76			9,997 76
Wisconsin & Michigan	4,469 19			4,469 19
Wisconsin Central R. R. Co.	56,360 91		27,410 85	83,771 76
Wisconsin Central Co.	2,383 82	375 00		2,758 82
St. Paul & Duluth			176 50	176 50

Rentals paid according to report of June 30, 1899. B. Rents paid for lease of other property—Continued.

NAME OF COMPANY.	WHOLE LINE.			
	Tracks.	Yards.	Terminals.	Total.
Chicago, Milwaukee & St. Paul				\$424,693 25
Chicago & Northwestern	\$12,000 00	\$19,116 87	\$54,258 00	106,694 89
C., St. P., M. & O.	62,591 05		54,726 19	117,317 24
Chicago, Lake Shore & Eastern	215,565 25			215,565 25
Duluth, South Shore & Atlantic	23,298 29	475 00	8,507 12	32,280 41
Eastern R'y Co. of Minnesota	42,987 80		62,081 04	105,068 84
Green Bay & Western	1,200 00		3,509 62	4,709 62
Hazelhurst & South Eastern	720 46			720 46
Milwaukee & Lake Winnebago	5,190 60			5,190 60
Milwaukee & Superior			120 00	120 00
Minnesota & Wisconsin			57 30	57 30
M., St. P. & S. Ste. Marie	38,587 08		87,702 07	126,289 15
Northern Pacific	*246,493 51			196,498 63
Wisconsin & Michigan	7,980 70			7,980 70
Wisconsin Central R. R. Co.	56,360 91		27,410 85	56,360 91
Wisconsin Central Co.	59,257 08	375 00	222,918 77	282,550 85
St. Paul & Duluth	13,457 88		34,524 38	47,982 26

\*Less amount collected from other companies.



*Employes and Salaries.*

Employes and salaries, year ending June 30, 1899—Wisconsin.

NAME OF COMPANY.	GENERAL OFFICERS.			OTHER OFFICERS AND GENERAL OFFICER'S CLERKS.		
	No	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.
1 Abbotsford & Northeastern	4			2	\$4 00	\$720 00
2 Ahnapeen & Western	2	\$4 00	\$1,200 00	1	1 00	12,012 00
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield Harbor & G. W.						
6 Bayfield Transfer R'y	1	1 28	466 66	1	1 00	73 00
7 C., M. & St. P.	9	20 65	71,064 85	103	2 21	60,600 13
8 Chicago & Northwestern	3	10 65	9,999 96	18	3 83	21,587 09
9 C., St. P., M. & O.	3	8 80	9,633 33	6	2 46	5,384 64
10 Chicago, Burlington & N.						
11 Chicago, Lake Shore & E.	1	1 92	600 00			
12 Chicago & Lake Superior						
13 Chicago, Madison & N.						
14 Chicago, Wis. & Minn.						
15 Chippewa Riv. & Menom.	2	3 41	1,600 00	1	1 38	274 60
16 Drummond & S. W.	5			1	80	250 00
17 Duluth, S. S. & Atlantic						
18 Duluth Short Line	3					
19 Duluth, Superior & W.	1	9 68	2,574 97	2		1,032 25
20 Dunbar & Wausaukee						
21 Eastern Ry. Co. of Minn.	1	9 03	2,368 48			
22 Fairchild & North Eastern	4			1		
23 Green Bay & Western	5	6 54	10,200 00	10		7,740 00
24 Hazelhurst & South East'n	5					
25 Iola & Northern						
26 Glenwood & Northeastern						
27 Kewaunee, G. B. & W.	6	2 18	4,300 00	1	1 87	600 00
28 Kickapoo Valley & North'n	1	5 75	1,800 00	3	1 92	1,800 00
29 Lake Sup. T. & T. R'y Co.	1	6 58	2,400 00	2	2 55	1,860 00
30 Mattoon R'y Co.						
31 Milwaukee & L. Winn'bag						
32 Milwaukee & Superior	7	4 09	1,898 33		78	226 00
33 Marshfield & South East'n	1	5 77	1,800 00	1	2 88	900 00
34 Marinette, Tomah'k & W.	1			1	1 15	420 00
35 Milwaukee & Wauwatosa						
36 Minnesota & Wisconsin						
37 Minneapolis, St. P. & A.						
38 M., St. P. & S. Ste. M.	2	7 22	5,267 48	29	1 98	20,921 87
39 Northern Pacific						
40 Northwestern Coal R'y Co.	2	7 55	4,308 37	5	2 58	2,487 53
41 Oshkosh Transportat'n Co.						
42 Packwaukee & Montello	2		2,160 00			
43 Rice L., Dallas & Menom.	2					
44 St. Cloud, Grantsb'g Ashl'd	3					
45 Wash'n, Bayfield & I. R.	4	4 43	3,164 06	4	2 13	1,200 05
46 West Range						
47 Winona Bridge R'y Co.	1	81	300 00	1	1 15	420 00
48 Wisconsin & Michigan						
49 Whitecomb & Morris			200 00			
50 Wisconsin Cen. R. R. Co.						
51 Wisconsin Central Co.	20	11 60	84,712 60	230	2 18	174,722 87
52 Hawthorn, Nebag. & Sup.						
53 St. Paul & Duluth	11	10 89	594 66	60	2 39	711 23
Total	111		\$222,613 75	483		\$315,943 36

*Employes and Salaries.*

Employes and salaries, year ending June 30, 1899, Wisconsin—Continued.

STATION AGENTS.			OTHER STATION MEN.			ENGINEMEN.			No.
No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	
1	\$2 12	\$669 00				1	\$2 88	\$900 00	1
3	1 68	1,573 28				1	3 61	1,128 75	2
									3
									4
									5
						1	2 60	949 50	6
265	1 73	142,830 13	821	\$1 52	\$391,291 18	280	3 73	327,002 36	7
237	2 09	155,469 50	712	1 57	339,058 33	477	5 56	480,619 93	8
68	2 19	46,519 92	86	1 31	43,468 37	195	4 09	134,424 62	9
29	1 59	16,860 00	22	1 42	9,780 00	51	3 14	58,536 00	10
1	2 31	860 00	2	1 33	564 00	5	2 67	4,790 45	11
									12
15	1 66	8,600 00	3	1 15	1,080 00	6	3 28	6,114 79	13
									14
						2	2 35	940 00	15
						2	2 86	616 31	16
8	2 29	5,263 55	6	1 88	3,726 20	5	3 64	4,935 84	17
									18
1	3 22	860 83	56	1 72	10,716 17				19
									20
5	2 43	3,821 16	51	1 80	23,274 30	1	2 89	900 00	21
2						3	3 84	11,652 94	22
31	1 53	14,796 00	13	1 23	4,992 76	15	3 50	17,767 90	23
2	2 16	560 04				2	2 47	1,659 23	24
1	2 12	660 00	1	1 10	31 20	1	3 00	937 87	25
									26
4	1 58	1,620 00	2	1 15	840 00	3	3 00	2,645 51	27
12	1 38	4,052 65				2	3 50	1,113 99	28
1	3 29	1,200 00	4	1 64	2,401 77	3	3 50	3,937 57	29
									30
									31
6	1 21	2,796 15				3	2 24	1,413 92	32
3	1 92	1,700 00				2	3 50	1,204 86	33
1	1 48	540 00	2	1 20	720 00	4	2 30	2,920 00	34
									35
									36
									37
34	1 40	18,657 61	5	1 31	2,389 30	37	5 19	70,127 59	38
6	2 50	5,321 93	13	1 72	8,087 06	5	4 13	8,156 65	39
3	2 24	1,241 37	2	1 80	505 67	3	3 32	1,921 53	40
									41
									42
2	1 00	720 00	1	1 00	360 00	1	2 00	730 00	43
									44
2	33	100 00				11	2 93	3,845 38	45
									46
						2	1 96	950 00	47
									48
						1		626 00	49
									50
104	1 67	63,580 76	139	1 74	79,459 84	158	3 59	168,277 05	51
									52
2	2 87	2,098 13	3	2 06	2,259 67	1	3 80	875 18	53
									54
849		\$502,962 41	1,944		\$825,005 82	1,197		\$1,322,621 72	

*Emploees and Salaries.*

Emploees and salaries, year ending June 30, 1899, Wisconsin—Continued.

NAME OF COMPANY.	FIREMEN.			CONDUCTORS.		
	No.	Daily compensation	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.
1 Abbotsford & Northeastern	1	\$1 92	\$600 00	1	\$1 92	\$600 00
2 Ahnapee & Western	1	1 73	540 29	1	1 87	586 67
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield Harbor & G. W.						
6 Bayfield Transfer R'y	1	1 27	465 00	1	1 44	528 00
7 Chicago, Mil. & St. Paul	278	2 26	196,910 70	230	3 54	254,392 67
8 Chicago & Northwestern	514	2 21	323,195 20	294	3 37	273,994 56
9 C., St. P., M. & O.	105	2 52	82,748 03	76	3 58	85,266 32
10 Chicago, Burlington & N.	50	1 86	33,924 00	45	2 84	46,596 00
11 Chicago, L. Shore & East.	4	1 90	2,052 07			
12 Chicago & Lake Sup.						
13 Chicago, Madison & North.	6	1 91	3,560 88	6	3 40	4,505 59
14 Chicago, Wisconsin & Minn.						
15 Chippewa Riv. & Menom.	2	1 55	620 00			
16 Drummond & South West'n	2	1 62	333 59			
17 Duluth, So. Shore & Atl.	5	2 22	3,010 32	5	3 03	4,108 68
18 Duluth Short Line						
19 Duluth, Sup. & Western						
20 Dunbar & Wausaukee	1	1 63	520 00	1	1 92	600 00
21 Eastern R'y Co. of Minn.	3	2 25	6,821 23	20	3 20	6,694 92
22 Fairchild & Northeastern	3	1 50		1	2 33 1-3	
23 Green Bay & Western	15	2 10	11,051 57	12	2 60	9,794 33
24 Hazelhurst & So. Eastern	2	1 63	1,159 90	1	2 48	898 87
25 Iola & Northern	1	1 17	366 00			
26 Glenwood & Northeastern						
27 Kewaunee, Green Bay & W.	2	2 00	1,322 75	2	2 40	1,440 00
28 Kickapoo Val. & Northern	2	2 12	717 79	2	2 87	921 14
29 L. Superior T. & T. R'y Co.	3	2 10	2,355 80			
30 Mattoon R'y Co.						
31 Milwaukee & L. Winnebago						
32 Milwaukee & Superior	3	1 71	1,002 50	3	1 95	1,156 57
33 Marshfield & So. Eastern	2	1 81	602 53	1	2 88	914 37
34 Marinette, Tom. & West.	4	1 70	2,160 00	3	2 17	2,100 00
35 Milwaukee & Wauwautosa						
36 Minnesota & Wisconsin						
37 Minn., St. Paul & Ashl'd.						
38 M., St. P. & S't St. Marie				23	3 26	27,370 78
39 Northern Pacific	5	2 32	4,588 11	7	3 26	8,653 30
40 Northwestern Coal R'y Co.	4	1 76	1,511 73			
41 Oshkosh Transportation Co.						
42 Packwaukee & Montello						
43 Rice L., Dallas & Menom.	1	1 16	425 83	1	2 16	790 83
44 St. Cloud, G'ts'bg & Ashl'd						
45 Wash'n, Bayfield & I. Riv.	14	1 58	2,297 04	12	2 14	3,000 94
46 West Range						
47 Winona Bridge R'y Co.						
48 Wisconsin & Michigan						
49 Whitcomb & Morris	1		480 00			
50 Wisconsin Cent. R. R. Co.						
51 Wisconsin Central Co.	159	2 19	101,650 13	98	3 28	96,764 64
52 Hawth'n, Nebagamon & S.						
53 St. Paul & Duluth	1	2 20	506 74	1	3 24	509 55
Totals	1,195		\$787,499 73	847		\$832,188 73

*Emploees and Salaries.*

Emploees and salaries, year ending June 30, 1899, Wisconsin—Continued.

OTHER TRAINMEN.			MACHINISTS.			CARPENTERS.			No.
No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	
1	\$1 60	\$500 68				1	\$1 67	\$215 60	1
									2
									3
									4
									5
									6
354	2 08	231,083 13	94	\$2 48	\$73,609 90	182	1 93	110,361 04	7
609	2 02	345,162 63	162	2 04	97,119 44	297	2 10	180,335 20	8
169	2 14	113,162 78	71	1 83	40,584 46	180	1 71	47,680 17	9
56	1 70	34,668 00	25	1 95	15,240 00	46	1 76	25,384 00	10
						9	2 37	6,068 10	11
									12
11	2 01	4,515 75				15	2 07	6,482 11	13
									14
4	1 48	1,084 37	2	2 12	887 05	2	1 62	405 24	15
4	1 65	629 39	1	3 00	707 42	1	1 75	218 75	16
10	1 85	5,017 20				7	2 18	4,818 45	17
									18
									19
									20
43	2 08	8,558 12	30	2 91	14,842 50				21
3	1 50		1	3 85					22
20	1 65	9,578 84	13	2 50	11,834 12	12	1 90	8,015 60	23
1	1 66	617 20							24
1	1 54	480 65							25
									26
4	1 50	1,598 76							27
3	1 92	1,242 40	1	2 84	641 06	4	2 05	1,844 09	28
			1	2 66	400 00				29
									30
									31
6	1 58	1,595 48	3	2 01	843 22	5	1 82	817 52	32
2	1 73	1,049 63	2	1 31	577 00				33
1	72	180 00				2	2 04	1,260 00	34
									35
									36
									37
	1 55	36,850 68				52	1 95	31,347 57	38
14	2 03	10,447 87				3	2 37	2,310 48	39
									40
									41
									42
1	1	365 00							43
									44
22	1 63	3,566 28	3	2 23	1,206 99	4	2 10	1,141 51	45
									46
									47
									48
									49
									50
205	1 97	121,277 54	89	1 88	51,724 54	115	1 98	66,878 98	51
									52
2	1 77	689 45	1	2 42	410 02	1	2 46	393 76	53
1,546		\$933,921 83	499		\$310,633 31	1,036		\$495,978 17	

*Emploees and Salaries.*

Emploees and salaries, year ending June 30, 1899, Wisconsin—Continued.

NAME OF COMPANY.	OTHER SHOPMEN			SECTION FOREMEN.		
	No.	Daily compensation.	Yearly compensation.	No.	Daily compensation.	Yearly compensation.
1 Abbotstord & Northeastern				1	\$1 34	\$407 49
2 Ahnapee & Western				4	1 46	1,386 04
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield Harbor & G. W.						
6 Bayfield Transfer R'y	1	\$1 17	\$427 75	1	1 50	468 00
7 Chicago, M.L. & St. Paul	545	1 73	294,696 83	280	1 74	152,421 71
8 Chicago & Northwestern	598	1 68	291,581 19	282	1 75	154,560 01
9 Chicago, St. P., M. & O.	89	1 71	47,624 00	109	1 79	61,173 45
10 Chicago, Burlington & Nor.	147	1 55	71,424 00	39	1 50	21,420 00
11 Chicago, L. Shore & East'n	1	1 83	578 00	1	2 00	720 00
12 Chicago & Lake Superior						
13 Chicago, Madison & North.				17	1 65	7,438 00
14 Chicago, Wisconsin & Minn.						
15 Chippewa Riv. & Menom.	2	1 91	567 81	1	1 75	547 75
16 Drummond & South West'n	1	1 25	257 50	1	1 54	455 38
17 Duluth, So. Shore & Atl.	5	1 68	2,398 36	20	1 65	11,880 60
18 Duluth Short Line						
19 Duluth, Sup. & West. Ter.				2	1 45	386 15
20 Dunbar & Wausaukee						
21 Eastern R'y Co. of Minn.	318	1 75	61,896 38	5	1 57	3,157 98
22 Fairchild & North Eastern				2	1 50	
23 Green Bay & Western	33	1 58	19,802 35	37	1 50	17,760 00
24 Hazelhurst & South East'n				1	1 57	455 38
25 Iola & Northern				1	1 10	343 20
26 Glenwood & Northeastern						
27 Kewaunee, G. Bay & West.	1	1 50	480 00	16	1 50	2,700 00
28 Kickapoo Val. & Northern	2	1 76	818 96	7	1 56	3,496 50
29 Lake Sup. T. & T. R'y Co.	4	1 63	2,710 16	1	1 97	720 00
30 Mattoon R'y Co.						
31 Milwaukee & L. Winnebago						
32 Milwaukee & Superior	3	1 54	1,221 12	3	1 93	1,057 34
33 Marshfield & So. Eastern				5	1 54	2,390 00
34 Marinette, Tom. & Western	1	2 10	420 00	4	1 80	2,240 00
35 Milwaukee & Wauwatosa						
36 Minnesota & Wisconsin						
37 Minneapolis, St. P. & A.						
38 M., St. P. & Sault St. Marie	1	1 36	417 77	40	1 48	21,610 00
39 Northern Pacific		2 27	58 90	16	1 52	8,690 42
40 Northwestern Coal R'y Co.				1	1 93	600 00
41 Oshkosh Transportation Co.						
42 Packwaukee & Montello						
43 Rice L., Dallas & Menom.				1	1 67	600 00
44 St. Cloud, G'tsb'g & Ashl'd						
45 Wash'n. Bayfield & I. Riv.	26	1 68	5,988 12	5	1 54	1,209 79
46 West Range						
47 Winona Bridge R'y Co.						
48 Wisconsin & Michigan						
49 Whitcomb & Morris				1		325 00
50 Wisconsin Cent. R. R. Co.						
51 Wisconsin Central Co.	281	1 86	143,084 85	120	1 49	66,321 02
52 Hawth'n., Nebagamon & S.						
53 St. Paul & Duluth	2	1 96	1,051 34	2	1 52	1,152 00
Totals	2,063		\$947,561 56	1,026		\$548,093 21

*Emploees and Salaries.*

Emploees and salaries, year ending June 30, 1899, Wisconsin — Continued.

OTHER TRACKMEN.			SWITCHMEN, FLAGMEN, WATCHMEN.			TELEGRAPH OPERATORS AND DISPATCHERS.			No.
No.	Daily compensa- tion.	Yearly compensa- tion.	No.	Daily compensa- tion.	Yearly compensa- tion.	No.	Daily compensa- tion.	Yearly compensa- tion.	
5	\$1 15	\$1,431 75							1
8	1 15	2,681 27	1	\$1 15	\$420 00				2
									3
									4
									5
									6
9	1 50	1,119 00							7
1,119	1 24	434,530 07	327	2 01	205,781 99	249	2 11	164,010 93	8
2,432	1 33	571,238 46	411	1 34	257,262 21	239	1 73	133,607 84	9
355	1 28	142,924 69	48	2 15	32,325 07	75	1 92	45,026 56	10
179	99	55,656 00	32	1 35	15,816 00	15	2 15	11,760 00	11
15	1 13	4,022 55	12	2 11	8,327 28				12
3	1 25	1,029 36	1	1 25	456 25				13
64	1 08	9,220 78				3	1 99	1,452 36	14
									15
21	1 34	4,717 91	1	1 20	438 90				16
9	1 22	3,162 13	2	1 11	269 34				17
62	1 31	25,117 39	1	1 26	97 92	11	1 60	4,889 05	18
									19
10	1 50	1,307 26	6	1 71	1,231 92	2	80	429 48	20
									21
57	1 54	61,391 10	49	2 57	46,169 65	1	2 41	6,568 00	22
10	1 35								23
90	1 10	26,039 81	16	1 50	6,778 94	4	2 60	2,850 00	24
2	1 35	469 69	1	1 35	178 78				25
									26
									27
14	1 40	3,116 72	1	1 45	465 00	1	1 75	400 00	28
97	1 17	7,176 68	3	1 26	660 18				29
9	1 27	2,418 21	16	2 24	13,984 41				30
									31
									32
15	1 22	2,725 04							33
12	1 13	2,839 90							34
12	1 40	5,040 00	2	1 04	763 25				35
									36
									37
250	1 17	89,977 33	4	2 79	3,435 18	25	1 66	15,153 49	38
88	1 37	37,676 10	9	2 67	8,614 27		1 85	4,252 22	39
5	1 30	827 34	13	2 24	6,354 32				40
									41
									42
2	1 25								43
									44
46	1 34	6,686 55	1	1 65	300 00	1	1 60	336 29	45
			2	1 45					46
									47
									48
1		325 00							49
									50
935	1 21	207,039 02	130	1 97	64,508 85	76	1 78	49,814 74	51
5	1 10	1,724 66	1	1 16	60 00	1	1 50	547 66	52
									53
5,941		\$1,713,642 27	1,690		\$674,699 68	703		\$441,098 62	

*Emploves and Salaries.*

Emploves and salaries, year ending June 30, 1899 — Wisconsin.

NAME OF COMPANY.	EMPLOYEES' ACCOUNT, FLOATING EQUIPMENT.			ALL OTHER EMPLOYEES AND LABORERS.		
	No.	Daily compens- ation.	Yearly compens- ation.	No.	Daily compens- ation.	Yearly compens- ation.
1 Abbotsford & Northeastern						
2 Ahnapee & Western						
3 Ashland Siskiwi						
4 Big Falls R'y Co.						
5 Bayfield Harbor & G. W.						
6 Bayfield Transfer R'y						
7 Chicago, Mil. & St. Paul				1,235	\$2 28	\$879,858 57
8 Chicago & Northwestern				1,124	1 80	541,041 81
9 C. St. P., M. & O.				340	1 74	185,286 55
10 Chicago, Burlington & N.				11	2 09	7,200 00
11 Chicago, Lake Shore & E.				1	1 68	616 03
12 Chicago & Lake Superior						
12 Chicago, Madison & North				11	2 04	8,608 55
14 Chicago, Wisconsin & Minn.						
15 Chippewa Riv. & Menom.				30	1 33	4,575 44
16 Drummond & South West.						
17 Duluth, So. Shore & Atl.				5	1 56	2,846 79
18 Duluth Short Line						
19 Duluth, Sup. & Western				3	1 13	297 62
20 Dunbar & Wausaukee						
21 Eastern R'y Co. of Minn.				120	2 03	58,580 50
22 Fairchild & North Eastern						
22 Green Bay & Western	15	\$1 25	\$6,890 27	14	1 06	5,039 02
24 Hazelhurst & South East'n						
25 Iola & Northern						
26 Glenwood & Northeastern						
27 Kewaunee, G. Bay & West.	4	1 25	1,658 70	3	1 00	753 00
28 Kickapoo Val. & Northern				8	1 09	692 02
29 Lake Sup. T. & T. R'y Co.				1	1 20	166 64
30 Mattoon R'y Co.						
31 Milwaukee & L. Winnebago						
32 Milwaukee & Superior				1	2 19	320 12
33 Marshfield & South East.						
34 Marinette, Tom. & West'n.						
35 Milwaukee & Wauwatosa						
36 Minnesota & Wisconsin						
37 Minn., St. Paul & Ashl'd.						
38 M., St. P. & Sault St. Marie				78	1 34	32,892 09
39 Northern Pacific				11	1 89	6,593 92
40 Northwestern Coal R'y Co.						
41 Oshkosh Transportation Co.						
42 Packwaukee & Montello						
43 Rice L., Dallas & Menom.						
44 St. Cloud, G'tsb'g & Ashl'd.						
45 Wash'n. Bayfield & I. Riv.				147	1 30	21,092 95
46 West Range						
47 Winona Bridge R'y Co.						
48 Wisconsin & Michigan						
49 Whitcomb & Morris						
50 Wisconsin Cent. R. R. Co.				384	1 55	126,613 70
51 Wisconsin Central Co.						
52 Hawthorn, Nebagamon & S.						
53 S. Paul & Duluth				2	1 85	1,223 13
Totals	19		\$8,548 97	3,534		\$1,884,298 46

*Employes and Salaries.*

Employes and salaries, year ending June 30, 1899, Wisconsin — Continued.

DISTRIBUTION OF FOREGOING EMPLOYES.				TOTAL, EXCLUDING "GENERAL OFFICERS"			No
General administration. No.	Maintenance of ways and structures. No.	Maintenance of equip- ment. No.	Conducting transporta- tion. No.	No.	Daily compensa- tion.	Yearly compensa- tion.	
6	3	3	4	12	\$1 79	\$5,319 24	1
3	13		8	22	1 51	9,044 58	2
							3
							4
							5
2	10		4	15	1 55	4,030 25	6
112	2,091	975	3,193	6,362	2 00	3,976,477 82	7
4	3,939	443	4,023	8,409	1 93	4,175,853 36	8
				1,882	1 98	1,165,910 92	9
	268	175	304	747	1 70	424,264 00	10
1	16	10	25	52	1 94	29,198 48	11
	3		5	8	1 34	3,041 44	12
1	100	3	53	157	1 78	61,578 81	13
							14
3	22	6	29	68	1 46	15,059 07	15
6	10	3	10	24	1 43	6,899 78	16
	89	5	56	150	1 70	78,110 35	17
							18
3	12		68	82	1 67	16,267 68	19
			3			2,020 00	20
1	62	348	295	706	1 99	315,797 86	21
							22
6	154	60	135	350	1 64	180,731 51	23
5	3		9	12	1 91	5,919 09	24
4	1		5	6	1 50	2,818 92	25
							26
6	24	4	20	49	1 54	20,241 24	27
4	119	3	21	146	1 47	25,177 46	28
6	10	5	27	46	2 21	34,554 56	29
							30
5	4			5	4 24	5,675 00	31
				51	1 52	15,174 98	32
2	17	2	10	30	1 67	12,149 29	33
2	16	3	17	37	1 64	18,763 25	34
							35
							36
							37
35	392	31	198	654	1 79	388,140 72	38
1	117	3	62	183	1 83	113,451 23	39
				36	2 21	15,449 54	40
							41
							42
							43
							44
6	176	33	87	298	1 52	51,972 29	45
							46
1	5		5	5	1 55	2,079 33	47
						1,756 00	48
							49
257	1,680	244	1,069	3,230	1 89	1,598,333 03	50
				85	1 84	14,212 57	51
							52
							53
482	9,347	2,359	9,755	23,919		\$12,795,473 60	



*Passenger Traffic.*

Passenger train mileage, Wisconsin, 1899 -- Passenger traffic.

Name of Company.	Number of passengers carried earning re- venue.	Number of passengers carried one mile.	Average distance carried.	Total passenger revenue.
1 Abbotsford & Northeastern . . . . .	1,750	26,750	14.90	\$1,033 55
2 Ahnapee & Western . . . . .	18,563			14,619 67
3 Ashland Siskiwit . . . . .				
4 Big Falls R'y Co. . . . .				
5 Bayfield Harbor & G. W. . . . .				
6 Bayfield Transfer R'y . . . . .	17,764	68,569	3.86	1,962 95
7 Chicago, Mil. & St. Paul . . . . .				2,244,668 81
8 Chicago & Northwestern . . . . .	4,892,106	134,426,921	274.78	2,622,248 09
9 C., St. P., M. & O. . . . .	692,453	35,225,724	50.87	810,543 92
10 Chicago, Burlington & N. . . . .	128,999	11,351,893	88.00	240,773 64
11 Chicago, Lake Shore & E. . . . .				
12 Chicago & Lake Superior . . . . .	7,597	22,791	3	1,007 45
13 Chicago Madison & Northn . . . . .	68,979	1,140,557	16.53	29,738 67
14 Chicago, Wis. & Minn. . . . .				
15 Chippewa Riv. & Menom. . . . .	830	19,920	24	415 08
16 Drummond & S. W. . . . .				
17 Duluth, S. S. & Atlantic . . . . .	50,206	2,342,594	46.66	54,151 20
18 Duluth Short Line . . . . .				
19 Duluth, Superior & Western . . . . .				
20 Dunbar & Wausaukee . . . . .				
21 Eastern R'y Co. of Minn. . . . .	89,414	1,587,175	17.75	32,972 82
22 Fairchild & N. E. . . . .	1,747	335,821	21	1,395 25
23 Green Bay & Western . . . . .	131,114	3,304,041	25.20	85,834 62
24 Hazelhurst & South Eastern . . . . .	1,437	13,270	9.23	517 24
25 Iola & Northern . . . . .	4,278	20,107	4.7	804 18
26 Glenwood & Northeastern . . . . .				
27 Kewaunee, Green Bay & W. . . . .	25,589	533,679	25.86	16,010 88
28 Kickapoo Valley & Northern . . . . .	1,111,830	214,619	18.1	5,950 70
29 Lake Sup. T. & T. R'y Co. . . . .				
30 Mattoon R'y Co. . . . .				
31 Milwaukee & Lake Win'bage . . . . .				
32 Milwaukee & Superior . . . . .	8,812	71,753	8.	2,268 30
33 Marshfield & South Eastern . . . . .				
34 Marinette, Tomahawk & W. . . . .	11,622	89,445	7.7	3,659 20
35 Milwaukee & Wauwatosa . . . . .				
36 Minnesota & Wisconsin . . . . .				
37 Minneapolis, St. P. & Ashl'd . . . . .				
38 M., St. P. & S. Ste. Marie . . . . .	126,548	8,396,775	66.35	147,225 08
39 Northern Pacific . . . . .	115,999	3,571,912	30.79	87,300 84
40 Northwestern Coal R'y Co. . . . .				
41 Oshkosh Transportation Co. . . . .				
42 Packwaukee & Montello . . . . .				
43 Rice Lake, Dallas & Menom. . . . .	3,904		7.52	
44 St. Cloud, Grantsb. & Ashl'd . . . . .				
45 Washburn, Bayfield & I. R. . . . .	6,206	130,327	21.	3,721 59
46 West Range . . . . .				
47 Winona Bridge R'y Co. . . . .	19,176			4,794 07
48 Wisconsin & Michigan . . . . .				
49 Whitcomb & Morris . . . . .				
50 Wisconsin Central R. R. Co. . . . .				
51 Wisconsin Central Co. . . . .	771,130	39,273,713	50.93	836,054 39
52 Hawthorn, Nebag. & Sup. . . . .				
53 St. Paul & Duluth . . . . .	25,222	126,671	5.02	3,276 77

Passenger Traffic.

Passenger train mileage, Wisconsin, 1899 — Passenger traffic—Continued.

Average amount received from each passenger.	Average receipts per passenger per mile.	Estimated cost of carrying each passenger one mile.	Total passenger earnings.	Passenger earnings per mile of road.	Passenger earnings per train mile.	No.
cts. mills. \$0 59.060	cts. mills. \$0 03.964	cts. mills	\$1,831 02	\$120 78	cts. mills. \$0 73.240	1
78.757	02.316		19,043 31	560 10	44.736	2
						3
						4
11.050	02.862		2,020 20	205 90	16.172	5
			3,118,956 67	1,839 75	1 11.693	6
5.360	01.951	\$0 02.111	9,860,771 54	1,938 95	92.087	7
\$1 17.054	02.301		985,028 54	1,584 51	88.085	8
1 88.353	02.121		289,052 75	1,295 62		9
						10
13.261	04.420		1,245 68	415 23		11
43.011	02.607		41,855 07	458 38	57.057	12
						13
50	02.083	01.549	415 08	13,609 18	01.837	14
						15
1 07.858	02.312		67,962 12	607 08	89.577	16
						17
						18
						19
36.877	02.077		37,405 60	1,346 01	85.119	20
79.8	03.9	.012	1,395 25	51 67.5		21
65.466	02.598		110,774 17	492 33	71.209	22
35.994	03.898		613 33	36 08	09.608	23
18.8	04		1,043 79	222 08	11.826	24
						25
62.567	03		19,438 50	529 66	94.097	26
50.307	02.772		8,662 37	168 85.711	1 12.192	27
						28
						29
						30
25.741	03.161		3,346 09	133 62		31
			6,419 34	194 52.544		32
31.485	04.091	09.097	4,111 42	123 46.6	38.812	33
						34
						35
						36
1 16.339	01.753		206,649 16	761 36	88.994	37
75.259	02.444		101,382 58	1,160 38	1 36.343	38
						39
						40
						41
						42
						43
59	02.8	02.4	3,721 59	109 45	17	44
						45
25	24		4,794 07	4,654 43		46
						47
						48
						49
1 08.289	02.129		1,028,998 02	1,272 33	71.634	50
						51
12.992	02.587		4,180 68	304 05	56.086	52
						53

## Freight Traffic.

## Freight Train Mileage, Wisconsin, 1899.

Name of Company.	Number of tons carried of freight earning revenue.	Number of tons carried one mile.	Average distance haul of one ton.	Total freight revenue.
1 Abbottsford & Northeastern.	29,121	407,694	14.00	\$16,566 50
2 Ahnapee & Western .....	22,736			15,184 37
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ... ]				
6 Bayfield Transfer R'y .....	5,418	37,143	6.85	983 81
7 Chicago, Mil. & St. Paul.....				8,737,196 33
8 Chicago & Northwestern .....	6,898,292	1,058,055,272	154.	9,287,377 29
9 C., St. P., M. & O. ....	1,605,158	273,541,059	170.41	2,650,612 87
10 Chicago, Burlington & N. ...	724,994	144,998,841	200	968,592 26
11 Chicago, L. Shore & East. ....				
12 Chicago & Lake Superior....	4,819	14,457	3	2,036 53
13 Chicago, Madison & North. ...	112,499	3,435,048	30.53	56,237 70
14 Chicago, Wisconsin & Minn. ...				
15 Chippewa River & Menom. ...	85,000	2,040,000	24	27,907 26
16 Drummond & South West. ...	50,970	509,700	10	15,948 19
17 Duluth, S. S. & Atlantic ...	232,521	16,129,727	69.37	144,997 71
18 Duluth Short Line .....				
19 Duluth, Superior & West. ...	580,105			116,020 96
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....	3,877,117	70,897,048	18.29	454,669 38
22 Fairchild & North Eastern. ...	71,177	732,596	11	30,566 94
23 Green Bay & Western .....	349,365	35,907,050	102.78	341,317 76
24 Hazelhurst & South East. ...	100,556	954,824	9.49	17,764 61
25 Iola & Northern .....	14,938	70,209	4.7	5,640 31
26 Glenwood & Northeastern .....				
27 Kewaunee, G. Bay & West. ...	121,589	3,667,959	30.16	52,253 85
28 Kickapoo Val. & North. ....	36,684	1,263,951	34.4	26,503 31
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago. ...				
32 Milwaukee & Superior .....	113,929			31,395 62
33 Marshfield & South Eastern ...				31,404 83
34 Marinette, Tom. & West. ...	69,333	935,995	13.50	30,288 37
35 Milwaukee & Wauwatosa. ...				
36 Minnesota & Wisconsin .....				
37 Minneapolis, St. P. & Ashl'd				
38 M., St. P., & Sault St. Marie	1,732,514	263,404,981	152.03	1,161,942 74
39 Northern Pacific .....	1,134,234	20,890,476	18.42	241,096 80
40 Northwestern Coal R'y Co. ....	455,716	1,595,006	3.5	27,482 69
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....	22,637			
43 Rice L., Dallas & Menom. ...				
44 St. Cloud, G'tsb'g & Ashl'd				
45 Washburn, Bayfield & I. R. ...	186,614	3,732,280	20	53,136 36
46 West Range .....				14,940 59
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Cent. R. R. Co. ....				
51 Wisconsin Central Co. ....	3,486,660	433,982,796	124.47	3,117,226 91
52 Hawthorn, Nebagamon & S. ...				
53 St. Paul & Duluth .....	317,411	767,972	2.42	20,356 37

*Freight Traffic.*

Freight Train Mileage, Wisconsin, 1899.

Average amount received for each ton freight.	Average receipts per ton per mile.	Estimated cost of carrying one ton one mile.	Total freight earnings.	Freight earnings per mile of road.	Freight earnings per train mile.	No.
\$0 56.888	\$0 04.063	\$0 02.226	\$16,566 50	\$1,092 78	\$2 07.081	1
			15,184 36	446 60	35.671	2
						3
						4
18.158	02.649		1,025 28	103 98	08.167	5
			8,785,613 84	5,323 13	1 96.620	6
1 34.809	00.878	00.467	9,298,801 50	5,719 77	1 86.700	7
1 65.131	969		2,652,938 07	4,267 51	1 84.583	8
1 33.006	00.668		968,592 26	4,341 51		9
						10
46.260	14.087		2,336 53	678 84		11
49.990	01.637		56,237 70	615 90	74.975	12
						13
32.832	01.368	01.017	27,907 26	914 99	1 23.483	14
31	03.100	02.500				15
62.359	00.899		145,421 21	1,298 98	1 21.570	16
						17
20			116,020 96	18,834 73		18
						19
11.727	00.641		454,799 98	16,365 59	3 74.845	20
42.9	03.9	01.3	30,596 94	1,132 11		21
97.697	00.951		343,718 85	1,527 64	1 45.087	22
17.666	01.861		17,764 61	1,044 97	92.756	23
37.758	08.034		5,640 31	1,200 06	63.906	24
						25
42.976	01.425		52,690 83	1,435 72	2 56.703	26
72.248	02.097		26,563 31	516 63	1 29.851	27
						28
						29
						30
27.557			31,395 62	1,253 81,869		31
				951 66,303		32
45.121	03.342	02.297	29,840 55	896 14.264	89.775	33
						34
						35
						36
67.066	00.441		1,162,711 66	4,283 81	1 93.364	37
2 12.564	01.154		241,957 29	2,769 34	2 62.247	38
06.031	01.723		27,482 69			39
						40
						41
						42
						43
28	01.4	01.97	53,136 36	1,562 83	1 37	44
			14,940 59	14,505 42		45
						46
						47
						48
						49
89.40	00.718		3,146,224 76	3,890 23	1 80.802	50
						51
06.413	02.651		20,356 37	1,480 46	1 90.246	52
						53

## Train Mileage.

Passenger and freight and train mileage, Wisconsin, 1899—Passenger and freight.

Name of Company.	Passenger and freight revenue.	Passenger and freight revenue per mile of road.	Passenger and freight earnings.	Passenger and freight earnings per mile of road.
1 Abbotsford & Northeastern.	\$17,600 05	\$1,160 95	\$18,397 52	\$1,213 56
2 Ahnapee & Western .....	29,804 04	876 58	34,227 68	1,006 70
3 Ashland Siskiwit .....	.....	.....	.....	.....
4 Big Falls R'y Co. ....	.....	.....	.....	.....
5 Bayfield Harbor & G. W. ...]	.....	.....	.....	.....
6 Bayfield Transfer R'y .....	2,946 76	298 86	3,055 48	309 88
7 Chicago, Mil. & St. Paul....	10,981,865 74	6,653 82	11,904,570 51	7,212 88
8 Chicago & Northwestern....	11,909,625 38	7,325 71	12,451,013 44	7,658 72
9 C., St. Paul, M. & O. ....	3,461 156 79	5,567 60	3,637,966 61	5,852 02
10 Chicago, Burlington & North.	1,209,365 90	5,420 73	1,237,645 01	5,637 13
11 Chicago, Lake Shore & East.	.....	.....	.....	.....
12 Chicago & Lake Superior....	3,043 98	1,014 66	3,282 21	1,094 07
13 Chicago, Madison & North...	85,976 37	941 58	98,092 77	1,074 23
14 Chicago, Wis. & Minn. ....	.....	.....	.....	.....
15 Chippewa Riv. & Menom. ....	28,322 34	928 60	28,322 34	928 60
16 Drummond & South Western ..	.....	.....	.....	.....
17 Duluth, S. S. & Atlantic ....	199,148 91	1,778 91	213,383 33	1,906 06
18 Duluth Short Line .....	.....	.....	.....	.....
19 Duluth, Superior & Western ..	.....	.....	.....	.....
20 Dunbar & Wausaukee .....	.....	.....	.....	.....
21 Eastern R'y Co. of Minn. ....	487,642 20	17,547 39	492,205 58	17,711 60
22 Fairchild & North Eastern ..	32,151 52	1,183 78	32,151 52	1,183 78
23 Green Bay & Western .....	427,152 38	1,898 46	454,493 02	2,019 97
24 Hazelhurst & S. E. ....	18,281 85	1,075 40	18,377 94	1,081 06
25 Iola & Northern .....	6,444 49	1,371 17	6,634 10	1,422 15
26 Glenwood & Northeastern ..	.....	.....	.....	.....
27 Kewaunee, Green Bay & W. ....	63,264 23	1,860 06	72,129 33	1,965 33
28 Kickapoo Valley & Northern ..	32,454 01	632 63	35,165 68	685 49
29 Lake Sup. T. & T. R'y Co. ....	.....	.....	.....	.....
30 Mattoon Railway Co. ....	.....	.....	.....	.....
31 Milwaukee & Lake Win'ago ..	.....	.....	.....	.....
32 Milwaukee & Superior .....	33,633 92	1,344 40	34,741 71	1,387 44
33 Marshfield & South Eastern ..	37,824 22	1,146 18	.....	.....
34 Marinette, Tomahawk & W. ....	33,947 57	1,019 44	33,951 97	1,019 57
35 Milwaukee & Wauwatosa .....	.....	.....	.....	.....
36 Minnesota & Wisconsin .....	.....	.....	.....	.....
37 Minneapolis, St. P. & Ashl'd ..	.....	.....	.....	.....
38 M., St. P., & S. Ste. M. ....	4,048,778 91	3,181 58	4,322,227 05	3,396 45
39 Northern Pacific .....	328,397 64	3,758 70	343,339 87	3,929 72
40 Northwestern Coal R'y Co. ....	27,482 69	2,143 74	27,482 69	2,143 74
41 Oshkosh Transportation Co. ....	.....	.....	.....	.....
42 Packwaukee & Montello .....	.....	.....	.....	.....
43 Rice Lake, Dallas & Menom. ....	.....	.....	.....	.....
44 St. Cloud, Grantsb. & Ashl'd ..	.....	.....	.....	.....
45 Washburn, Bayfield & I. R. ....	56,857 95	1,672 29	56,857 95	1,672 29
46 West Range .....	.....	.....	.....	.....
47 Winona Bridge R'y Co. ....	19,346 31	5,424 24	10,346 31	5,424 24
48 Wisconsin & Michigan .....	.....	.....	.....	.....
49 Whitcomb & Morris .....	.....	.....	.....	.....
50 Wisconsin Central R. R. Co. ....	.....	.....	.....	.....
51 Wisconsin Central Co. ....	3,953,281 30	4,888 14	4,175,222 78	5,162 56
52 Hawthorn, Nebag. & Sup. ....	.....	.....	.....	.....
53 St. Paul & Duluth .....	23,633 14	1,718 77	24,537 05	1,784 51



*Train Mileage.*

Passenger and freight and train mileage, Wisconsin, 1899.—Train mileage.

Name of Company.	Miles run by passenger trains.	Miles run by freight trains.
1 Abbotsford & Northeastern .....		500
2 Ahnapee & Western .....	425.68	42,568
3 Ashland Siskiwit .....		
4 Big Falls Railway Co. ....		
5 Bayfield Harbor & Great Western .....		
6 Bayfield Transfer Railway .....		
7 Chicago, Milwaukee & St. Paul .....	2,689,545	4,159,875
8 Chicago & Northwestern .....	3,339,541	4,729,926
9 Chicago, St. Paul, Minneapolis & Omaha .....	1,100,202	1,383,037
10 Chicago, Burlington & Northern .....		
11 Chicago, Lake Shore & Eastern .....		
12 Chicago, & Lake Superior .....	73,357	75,009
13 Chicago, Madison & Northern .....		
14 Chicago, Wisconsin & Minnesota .....		
15 Chippewa River & Menomonie .....	22,600	
16 Drummond & South Western .....		
17 Duluth, South Shore & Atlantic .....	75,702	119,115
18 Duluth Short Line .....		
19 Duluth, Superior & Western .....		
20 Dunbar & Wausaukee .....	43,945	121,330
21 Eastern Railway Co. of Minnesota .....		
22 Fairchild & North Eastern .....	133,964	172,114
23 Green Bay & Western .....		
24 Hazelhurst & South Eastern .....		
25 Iola & Northern .....		
26 Glenwood & Northeastern .....		
27 Kewaunee, Green Bay & Western .....	22,912	24,780
28 Kickapoo Valley & Northern .....	420	146
29 Lake Superior Terminal & Transfer R'y Co. ....		
30 Mattoon Railway Co. ....		
31 Milwaukee & Lake Winnebago .....		
32 Milwaukee & Superior .....		
33 Marshfield & South Eastern .....		
34 Marinette, Tomahawk and Western .....		1,460
35 Milwaukee & Wauwatosa .....		
36 Minnesota & Wisconsin .....		
37 Minneapolis, St. Paul & Ashland .....		
38 Minneapolis, St. Paul & Sault Ste. Marie .....	904,662	1,634,114
39 Northern Pacific .....	74,358	92,263
40 Northwestern Coal Railway Co. ....		
41 Oshkosh Transportation Co. ....		
42 Packwaukee & Montello .....		
43 Rice Lake, Dallas & Menomonie .....		
44 St. Cloud, Grantsburg & Ashland .....		
45 Washburn, Bayfield & Iron River .....	21,892	38,520
46 West Range .....		
47 Winona Bridge Railway Co. ....		
48 Wisconsin & Michigan .....		
49 Whitcomb & Morris .....		
50 Wisconsin Central R. R. Co. ....		
51 Wisconsin Central Co. ....	1,424,092	1,703,045
52 Hawthorn, Nebagamou & Superior .....		
53 St. Paul & Duluth .....	4,802	2,744

*Train Mileage.*

Passenger and freight and train mileage, Wisconsin, 1899.—Train mileage—

Miles run by mixed trains.	Total mileage trains earning revenue.	Miles run by switching engines.	Miles run by construction and other trains.	Grand total train mileage.	No.
9,500	10,000	500	100	10,600	1
				42,568	2
					3
					4
					5
12,554	12,554			12,554	6
411,537	7,260,757				7
334,105	8,403,662	2,636,752	489,289	11,529,703	8
72,296	2,555,535	456,406	129,701	3,141,642	9
	121,931				10
	148,366	10,372	5,851	164,589	11
	22,600			22,600	12
	195,489		6,952	202,441	13
672					14
	165,275		24,132	189,407	15
					16
86,588	392,466	66,900	18,116	477,482	17
	25,536	14,400		39,936	18
	8,826			8,826	19
	47,692			47,692	20
29,206	29,772		400	30,172	21
					22
					23
					24
					25
					26
					27
					28
					29
					30
					31
					32
42,372		4,760	2,600	55,630	33
					34
					35
					36
382,328	2,921,104	399,974	117,668	3,438,746	37
	166,621		4,674	171,295	38
					39
					40
					41
					42
					43
	60,412			60,412	44
					45
					46
					47
					48
					49
49,474	3,176,611	481,044	347,148	4,004,803	50
					51
10,608	18,154	12,184		30,338	52
					53



*Train Mileage.*

Passenger and freight train mileage, Wisconsin, 1899.—Mileage of cars and average of loads.

Name of Company.	Mileage of loaded freight cars north or east.	Mileage of loaded freight cars south or west.	Mileage of empty freight cars north or east.	Mileage of empty freight cars south or west.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....				
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ....				
6 Bayfield Transfer R'y .....	25,108	12,554	12,554	12,554
7 Chicago, Milwaukee & St. P. ....				
8 Chicago & Northwestern .....	41,859,843	42,422,778	16,075,543	13,757,204
9 C., St. P., M. & O. ....				
10 Chicago, Burlington & N. ....				
11 Chicago, Lake Shore & E. ....				
12 Chicago & Lake Superior .....				
13 Chicago, Madison & North'n .....	246,797	321,871	116,331	80,296
14 Chicago, Wis. & Minn. ....				
15 Chippewa River & Menom. ....		11,300	11,300	
16 Drummond & South Western .....				
17 Duluth, So. Shore & Atl. ....	818,616	378,513	124,233	603,134
18 Duluth Short Line .....				
19 Duluth, Superior & Western .....				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....	1,636,108	1,893,280	697,358	451,526
22 Fairchild & North Eastern .....				
23 Green Bay & Western .....	1,309,739	1,199,840	289,052	518,503
24 Hazelhurst & South Eastern .....	11,180	108,866	108,866	11,180
25 Iola & Northern .....				
26 Glenwood & Northeastern .....				
27 Kewaunee, Green Bay & W. ....	137,562	133,508	53,399	36,450
28 Kickapoo Valley & Northern .....				
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon R'y Co. ....				
31 Milwaukee & Lake Win'ago .....				
32 Milwaukee & Superior .....				
33 Marshfield & South Eastern .....				
34 Marinette, Tomahawk & W. ....	55,630	4,660	2,082	57,930
35 Milwaukee & Wauwatosa .....				
36 Minnesota & Wisconsin .....				
37 Minneapolis, St. P. & Ash'l'd .....				
38 M., St. P. & S. Ste. M. ....	7,962,698	8,495,605	1,096,226	1,241,553
39 Northern Pacific .....	998,423	647,608	225,942	523,462
40 Northwestern Coal R'y Co. ....	34,344	34,344	34,344	
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....				
43 Rice Lake, Dallas & Menom. ....				
44 St. Cloud, Grantsb. & Ash'l'd .....				
45 Washburn, Bafield & R. ....	357,221	31,062	24,406	305,081
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. ....				
51 Wisconsin Central Co. ....	15,911,631	17,009,878	7,456,788	5,701,318
52 Hawthorn, Nebagm. & Sup. ....				
53 St. Paul & Duluth .....	28,225	40,588	16,855	5,901

*Train Mileage.*

Passenger and freight train mileage, Wisconsin, 1899.—Mileage of cars and average of loads—Continued.

Average number of freight cars in train.	Average number of loaded cars in train.	Average number of empty cars in train.	Average number of tons of freight in train.	Average number of tons of freight each loaded train.	Mileage upon which based.	No.
					15.16	1
					34	2
						3
						4
						5
5	3	2	3	1	9.86	6
22.54	16.64	5.90	208.93	12.55	1,625.73	7
						8
						9
						10
						11
10.20	7.53	2.62	45.80	6.4	91.31	12
15	15	15	180	12	24	13
						14
23	14	9	175.62	12.53	111.95	15
						16
						17
						18
						19
33.56	29.9	9.47	584.33	20.9	27.79	20
						21
25	18	7	144	8	225	22
16	8	8	62	8	17	23
						24
						25
9	7	2	98	14	36.70	26
						27
						28
						29
						30
						31
						32
4.1	2.3	1.8	32.5	16¼	33.30	33
						34
						35
						36
27	23	4	377	16.4	271.42	37
26.31	17.84	8.47	226.42	12.69	87.37	38
				23.22	12.82	39
						40
						41
						42
						43
18	10	8	165	16	34	44
						45
						46
						47
						48
						49
26	18	8	250	14	808.75	50
						51
6.86	5.15	1.71	57.52	11.16	13.75	52
						53

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded).

NAME OF COMPANY .	PRODUCTS OF AGRICULTURE.			
	Grain.	Flour.	Other mill products.	Hay.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western .....	4,028	258		1,877
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & Gt. West.				
6 Bayfield Transfer R'y .....	103			104
7 Chicago, Mil. & St. Paul ...	453,393	81,142	30,448	21,936
8 Chicago & Northwestern .....	442,756	117,697	46,996	33,042
9 Chicago, St. P., M. & O. ....	146,978	31,591	14,538	42,298
10 Chicago, Burlington & N. ....				
11 Chicago, L. Shore & Eastern .....				
12 Chicago & Lake Superior .....				
13 Chicago, Madison & North. ....	9,939	2,569	1,006	93
14 Chicgo, Wisconsin & Minn. ....				
15 Chippewa Riv. & Menom. ....				
16 Drummond & South Western .....				
17 Duluth, South Shore & Atl. ....	38,250	33,344	9,458	5,169
18 Duluth Short Line .....				
19 Duluth, Superior & West. ....				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....				
22 Fairchild & North Eastern. ....	761	187		78
23 Green Bay & Western .....	68,364	28,763		8,510
24 Hazelhurst & South East. ....	193	58	70	275
25 Iola & Northern .....	223	188		305
26 Glenwood & Northeastern .....				
27 Kewaunee, G. Bay & West. ....	27,433	13,499		3,282
28 Kickapoo Val. & Northern. ....	1,511.8	108.4	16.1	
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago. ....				
32 Milwaukee & Superior .....	4,369	241	679	134
33 Marshfield & South Eastern. ....				
34 Marinette, Tom. & Western .....	304	554	386	1,210
35 Milwaukee & Wauwatosa .....				
36 Minnesota & Wisconsin .....	3,726	537	385	619
37 Minn., St. Paul & Ashland. ....				
38 M., St. P. & Sault St. Marie .....	135,804	324,818	19,529	8,958
39 Northern Pacific .....	724,026	26,109	4,518	7,396
40 Northwestern Coal R'y Co. ....				
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....				
43 Rice L., Dallas & Menom. ....	466		146	490
44 St. Claud, G'tsb'g & Ash'd. ....				
45 Washburn, Bayfield & I. R. ....	52			175
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....	3,288	857	643	328
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. ....				
51 Wisconsin Central Co. ....	107,271	190,793	58,628	15,757
52 Hawthorn, Nebagamon & S. ....				
53 St. Paul & Duluth .....	135,464	1,133	7,551	1,873

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded).—Continued.

PRODUCTS OF AGRICULTURE.			Freight originating on road in Wisconsin Whole tons.	Freight received from this road or originating outside of Wisconsin and all other freight received from connecting roads and carriers, whole ton.	TOTAL FREIGHT TONNAGE.	
Tobacco.	Cotton.	Fruit and vegetables			Whole ton.	Per cent.
		1,945	7,172	936	8,108	177.16
			207		207	3.82
28,481	*20,937	71,847	433,572	342,533	608,384	14,720
8,147	125	127,342	227,635	35,354	786,105	13.91
3,052		24,542			252,999	18.53
65		1,546	7,459	7,909	14,268	13.51
		1,088	59,457	27,852	87,309	37.54
		311	1,272	65	1,337	1.877
		59,818	91,260	74,220	165,460	47.35
1		108		705	705	.71
		9,108	9,354	542	9,896	66.24
		3,834	11,434	36,614	48,048	39.51
476.4		317.8	2,297.5	133	2,430.5	6.63
2	†182	509	4,391	1,725	6,116	5.35
2		79	461	2,074	2,535	3.66
1		21	4,387	902	5,289	11.5
	‡734	10,847	494,722	5,968	500,690	23.91
	§155	5,246	8,858	758,592	767,450	67.65
		185	8 24	453	1,297	5.68
				227	227	.200
		50	217	4,949	5,166	4.10
1,233	†149,871	11,649	239,227	295,960	535,187	15.32
		6,157	13,512	138,666	152,178	47.98

\*Other agricultural products.  
 †Potatoes.  
 ‡Other products.  
 §Hops.

## Freight Traffic.

Freight traffic movement, Wisconsin, 1899, (company's material excluded).—Continued.

NAME OF COMPANY.	PRODUCTS OF ANIMALS.				
	Live stock.	Dressed meats.	Other packing house products.	Poultry, game and fish.	Wool.
1 Abbotsford & Northeast.....					
2 Ahnapee & Western.....	716			385	9
3 Ashland Siskiwt.....					
4 Big Falls R'y Co.....					
5 Bayfield Harb. & G. W.)					
6 Bayfield Transfer R'y.)	41			35	
7 Chicago, Mil. & St. P..	135,226	25,474	9,164	2,943	2,185
8 Chicago & Northwestern	139,276	4,361	79,903	4,933	1,029
9 C., St. P., M. & O.....	22,925	1,250	1,456	998	227
10 Chicago, Bur. & North.....					
11 Chicago, L. S. & Eastern					
12 Chicago & Lake Sup.....					
13 Chicago, Madison & N...	12,436		67	190	117
14 Chicago, Wis. & Minn...					
15 Chippewa Riv. & Menom.					
16 Drummond & So. West...					
17 Duluth, So. Shore & At.	1,098	1,922	251		755
18 Duluth Short Line.....					
19 Duluth, Sup. & Western					
20 Dunbar & Wausaukee...					
21 East R'y Co. of Minn...					
22 Fairchild & North East...	283				
23 Green Bay & Western...	10,261			308	
24 Hazelhurst & So. East...	4	203	44	1	
25 Iola & Northern.....	20				
26 Glenwood & Northeast...					
27 Kewaunee, G. B. & W.	2,368			597	
28 Kickapoo Val. & North.	4,286.7			20	62.6
29 L. S. T. & T. R'y Co.....					
30 Mattoon R'y Co.....					
31 Mil. & L. Winnebago...					
32 Mil. & Superior.....	451		1		
33 Marshfield & So. Eastern					
34 Marinette, Tom. & West.	44	50	4		
35 Milwaukee & Wauwatosa					
36 Minnesota & Wisconsin.	1,216	1		10	37
37 Minn., St. P. & Ashland					
38 M., St. P. & Sault S. M.	2,156	2,980		2,627	2,394
39 Northern Pacific.....	1,660	60	460	6,325	1,273
40 Northwest Coal R'y Co...					
41 Oshkosh Transport. Co...					
42 Packwaukee & Montello					
43 Rice L., Dallas & Men.	30				
44 St. Cloud, G'tsb'g & A.					
45 Wash'b'n, Bayf'd & I. R.	4	10			
46 West Range.....					
47 Winona Bridge R'y Co...					
48 Wisconsin & Michigan...			126		
49 Whitcomb & Morris.....					
50 Wisconsin Cen. R. R. Co.					
51 Wisconsin Central Co...	21,429	2,433	5,187	1,637	1,007
52 Haw., Nebagamon & S...					
53 St. Paul & Duluth.....	617	386	220		

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded).—Continued.

PRODUCTS OF ANIMALS.		Freight originating on road in Wisconsin. Whole tons.	Freight received from this road originating outside of Wisconsin and all other freight received from connecting roads and other carriers. Whole tons.	TOTAL FREIGHT TONNAGE.		No.
Hides and leather.	All other.			Whole tons.	Per cent.	
		1,004	106	1,110	48.81	1
23,957						2
		76		76	1.40	3
12,509	37,367			224,869	4.681	4
23,957	223,604	223,604	22,015	255,519	4.55	5
97		18,785	8,178	25,953	1.90	6
						7
290		12,254	846	13,100	11.63	8
						9
12		214	3,824	4,038	.74	10
						11
		273	10	283	.397	12
		10,141	428	10,569	3.3	13
2		3	251	254	.24	14
			20	20	.13	15
		2,434	531	2,965	2.44	16
	37	4,401.3	5	4,406.3	12	17
						18
		421	31	452	.40	19
		14	84	98	.14	20
6		1,270		1,270	2.90	21
963		8,678	2,442	11,120	.65	22
40		89	9,729	9,818	.86	23
						24
		30		30	.13	25
			14	14	.2	26
			126	126	.1	27
18,175		31,785	18,083	49,868	1.43	28
		461	762	1,223	.38	29
						30
						31
						32
						33
						34
						35
						36
						37
						38
						39
						40
						41
						42
						43
						44
						45
						46
						47
						48
						49
						50
						51
						52
						53

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded)—  
Product of mines.

Name of Company.	Coal, anthracite.	Coal, bituminous.	Coke.	Ores.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western.....		100		
3 Ashland Siskiwit.....				
4 Big Falls Railway Co.....				
5 Bayfield Harbor & G. W.....				
6 Bayfield Trasfer Railway.....	53			
7 Chicago, Milwaukee & St. P.....	302,463	246,923	4,356	63,962
8 Chicago & Northwestern.....	365,055	310,001	5,300	283,755
9 C., St. P., M. & O.....	127,495	228,443	317	3,324
10 Chicago, Burlington & N.....				
11 Chicago, Lake Shore & E.....				
12 Chicago & Lake Superior.....				
13 Chicago, Madison & North'n.....	4,549	12,530	160	95
14 Chicago, Wis. & Minn.....				
15 Chippewa River & Menom.....				
16 Drummond & South Western.....				217
17 Duluth, South Shore & Atl.....	725	188		
18 Duluth Short Line.....				580,105
19 Duluth, Superior & Western.....				
20 Dunbar & Wausaukee.....				
21 Eastern R'y Co. of Minn.....				
22 Fairchild & North Eastern.....		680		
23 Green Bay & Western.....	3,395	11,631		
24 Hazelhurst & South Eastern.....	21	16		
25 Iola & Northern.....	26			
26 Glenwood & Northeastern.....				
27 Kewaunee, Green Bay & W.....	429	35,699		
28 Kickapoo Valley & Northern.....	102.7			
29 Lake Sup. T. & T. R'y Co.....				
30 Mattoon Railway Co.....				
31 Milwaukee & Lake Win'bago.....		2,310	77	
32 Milwaukee & Superior.....	1,191			
33 Marshfield & South Eastern.....		224	35	
34 Marinette, Tomahawk & W.....	350			
35 Milwaukee & Wauwatosa.....		758	766	
36 Minnesota & Wisconsin.....				
37 Minneapolis, St. P. & Ash'l'd.....		72,177		278,040
38 M., St. P. & S. Ste. M.....	36,516	44,204	20,060	9,421
39 Northern Pacific.....	52,591	380,751	911	
40 Northwestern Coal R'y Co.....	74,053			
41 Oshkosh Transportation Co.....				
42 Packwaukee & Montello.....		20		
43 Rice Lake, Dallas & Menom.....	65			
44 St. Cloud, Grantsb. & Ash'l'd.....				
45 Washburn, Bayfield & I. R.....				
46 West Range.....				
47 Winona Brlge R'y Co.....			100	
48 Wisconsin & Michigan.....				
49 Whitcomb & Morris.....				
50 Wisconsin Central R. R. Co.....				
51 Wisconsin Central Co.....	46,544	187,324	3,926	1,339,769
52 Hawthorn, Nebag. & Sup.....				
53 St. Paul & Duluth.....	57,530	53,147	243	

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded)—  
Product of mines—Continued.

Stone, sand and other like articles.	Originating on this road in Wisconsin. Whole tons.	Freight received from the road originating outside of Wisconsin, all other freight received from connecting roads and carriers.	Whole tons.	Per cent.	No.
					1
20		120	120	5.26	2
					3
					4
					5
	53		53		6
178,441			796,145	16.544	7
166,807	1,039,535	103,383	1,130,918	20.28	8
15,937	371,123	4,393	375,816	26.46	9
					10
					11
227	223	17,333	17,561	23.6	12
					13
					14
					15
1,616	931	1,815	2,746	1.17	16
					17
			580,105	100	18
					19
					20
		680	680	.955	21
3,219	8,195	10,060	18,245	5.22	22
	37		37	.2	23
		26	26	.17	24
					25
316	36,368	76	36,444	29.97	26
	102.7		102.7	2.73	27
					28
					29
82,176	81,783	3,947	85,754	75.31	30
					31
239	225	623	848	1.21	32
					33
189		1,713	1,713	3.91	34
					35
6,061	637,348	392,446	392,794	22.63	36
986	817	126,445	137,262	11.28	37
	455,715		455,715	100	38
					39
					40
		85	85	.36	41
					42
					43
					44
					45
1,197	1,197	100	1,297	1.3	46
					47
59,415	422,327	1,164,651	1,586,978	45.52	48
					49
5,813	118,790	2,943	121,733	38.44	50
					51
					52
					53



*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899. (company's material excluded)—  
Product of the forest.

Name of Company.	Lumber.	Other forest products.	Freight originating on line in Wisconsin. Whole tons.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....	6,284	797	5,998
3 Ashland Siskiwit .....			
4 Big Falls Railway Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....	666	4,037	4,703
7 Chicago, Milwaukee & St. Paul .....		1,678,840	
8 Chicago & Northwestern .....	1,622,577		1,445,413
9 Chi., St. P., Minn. & Omaha .....	379,141		353,674
10 Chicago, Burlington & Northern .....			
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....			
13 Chicago, Madis. & Northern .....	25,934		1,702
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....	85,000		85,000
16 Drummond & South Western .....	50,590		50,590
17 Duluth, South Shore & Atlantic .....	55,347	47,231	73,700
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....			
22 Fairchild & North Eastern .....	19,932	46,490	66,169
23 Green Bay & Western .....	83,415		53,938
24 Hazelhurst & South Eastern .....	23,376	75,773	119,147
25 Iola & Northern .....	3,423		3,381
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	14,095		5,343
28 Kickanoo Valley & Northern .....	6,928	16,885	21,448
29 Lake Superior Term. & Transfer R'y Co. ....			
30 Mattoon Railway Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	3,364	166	275
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	46,108	17,460	19,616
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	6,666	25,389	31,123
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	667,026	28	637,569
39 Northern Pacific .....	41,394	72,664	85,161
40 Northwestern Coal Railway Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....	18,177	1,800	19,860
44 St. Cloud, Grandburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	43	185,347	185,347
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....	37,546	66,118	103,664
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....			
51 Wisconsin Central Co. ....	348,838	360,233	586,846
52 Hawthorn, Nebasamon & Superior .....			
53 St. Paul & Duluth .....	8,177	14,733	16,397

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded)—  
Product of the forest.

Name of Company.	Other freight received from connecting roads. Whole tons.	Total freight tonnage. Whole tons.	Per cent.
1 Abbotsford & Northeastern .....			95
2 Ahnapee & Western .....	1,083	7,081	31
3 Ashland Siskiwit .....			
4 Big Falls Railway Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer Railway .....		4,703	86.8
7 Chicago, Milwaukee & St. Paul .....		1,678,840	34.882
8 Chicago & Northwestern .....	177,164	1,622,577	29.9
9 Chicago, St. P., Minneapolis & Omaha .....	25,467	379,141	26.7
10 Chicago, Burlington & Northern .....			
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....	24,332	25,934	23.6
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....		85,000	
16 Drummond & South Western .....		50,590	
17 Duluth, outh Shore & Atlantic .....	28,874	102,578	44.12
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....			
22 Fairchild & North Eastern .....	253	66,422	95.377
23 Green Bay & Western .....	29,477	83,415	23.88
24 Hazelhurst & South Eastern .....	2	119,149	98.6
25 Iola & Northern .....	42	3,423	22.92
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	8,752	14,095	11.59
28 Kickapoo Valley & Northern .....	2,366	23,814	64.92
29 Lake Superior Term. & Trans. R'y Co. ....			
30 Mattoon Railway Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	3,250	3,530	3.9
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	43,952	63,568	91.7
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	932	32,055	73.2
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & S. Ste. Marie .....	29,485	667,054	38.5
39 Northern Pacific .....	28,897	114,058	10.6
40 Northwestern Coal R'y Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....	117	19,977	88.25
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	43	185,390	.2
46 West Range .....			
47 Winona Bridge Railway Co. ....			
48 Wisconsin & Michigan .....		103,664	82.26
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....			
51 Wisconsin Central Co. ....	122,225	709,071	20.34
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	6,513	22,910	7.22

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899, (company's material excluded)—  
Manufactures.

Name of Company.	Petroleum and other oils.	Sugar.	Naval stores.	Iron pig and blown.
1 Abbottsford & Northeastern .....				
2 Ahnapée & Western .....				
3 Ashland Siskiwi .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ....				
6 Bayfield Transfer Railway .....				
7 Chicago, Milwaukee & St. P. ....	2,641			171,711
8 Chicago & Northwestern ..	11,137	13,573	176	50,148
9 C., St. P., M. & O. ....	3,575	1,978	17	1,959
10 Chicago, Burlington & Nor. ....				
11 Chicago, Lake Shore & E. ....				
12 Chicago & Lake Superior ..				
13 Chicago, Madison & North'n ..	822	481		41
14 Chicago, Wis. & Minn. ....				
15 Chippewa River & Menom. ....				
16 Drummond & South Western ..				
17 Duluth, So. Shore & Atlantic ..	251	1,551		574
18 Duluth Short Line .....				
19 Duluth, Superior & Western ..				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....				
22 Fairchild & North Eastern ..	86	60		
23 Green Bay & Western .....	523	416		
24 Hazelhurst & S. E. ....	40	31		
25 Iola & Northern .....	60			
26 Glenwood & Northeastern ..				
27 Kewaunee, Green Bay & W. ....	93	1,251		
28 Kickapoo Valley & Northern ..	25			
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon Railway Co. ....				
31 Milwaukee & Lake Win'bage ..				
32 Milwaukee & Superior .....	16	4		44
33 Marshfield & South Eastern ..				
34 Marinette, Tomahawk & W. ....	5	48		98
35 Milwaukee & Wauwatosa ..				
36 Minnesota & Wisconsin .....	141			
37 Minneapolis, St. P. & Ashl'd ..				
38 M., St. P. & S. Ste. M. ....	7,394	7,915		14,331
39 Northern Pacific .....	10,127	3,288		21,778
40 Northwestern Coal R'y Co. ....				
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....				
43 Rice Lake, Dallas & Menom. ....	24	41		
44 St. Cloud, Grantsb. & Ashl'd ..				
45 Washburn, Bayfield & I. R. ....				
46 West Range .....				
47 Winona Bridge Railway Co. ....				
48 Wisconsin & Michigan .....				
49 Whitecomb & Morris .....				
50 Wisconsin Central R. R. Co. ....				
51 Wisconsin Central Co. ....	22,186	4,574		15,120
52 Hawthorn, Nebag. & Sup. ....				
53 St. Paul & Duluth .....	3,563			394

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899. (company's material excluded)—  
Manufactures—Continued.

Iron and steel rails.	Other castings and machinery.	Bar and sheet metal.	Cement, brick and lime.	Agricultural implements.	Wagons, carriages, tools, etc.	No.
	190	109	50	211	97	1
						2
						3
						4
						5
			55			6
32,357	42,652	38	109,346	44,422	21,772	7
23,424	50,890	83,111	139,028	33,247	40,334	8
9,552	6,949	3,152	17,864	4,379	1,912	9
						10
						11
	1,018	829	1,065	671	248	12
						13
						14
						15
2,544	3,251	373	2,136	44	104	16
						17
						18
						19
						20
			220		20	21
	1,672	3,626	3,747	1,442	215	22
	44	25	31		7	23
	21	44	307	91	10	24
						25
	417	807	1,326	249	97	26
	85		203	258	32	27
						28
						29
						30
	155	13	1,128	.52	30	31
						32
128	125		317	.08	17	33
						34
	246		720	.95	19	35
						36
12,826	12,830	14,797	7,532	1,337	841	37
6,249	996	1,991	15,787	102	251	38
						39
						40
						41
	23	91	124	116	41	42
						43
	12					44
						45
						46
1,134	983		654	516	151	47
						48
						49
16,672	23,220	18,915	30,005	5,973	11,391	50
						51
21	3,327	32	963	238		52
						53

## Freight Traffic.

Freight traffic movement, Wisconsin, 1899—Merchandise and miscellaneous products, (company's material excluded).

NAME OF COMPANY.	Merchandise.	Miscellaneous other commodities not mentioned heretofore.	Freight originating on this line in Wisconsin. Whole tons.	Freight received from this road and other freight from connections. Whole tons.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western .....	3,626	1,663	2,557	2,740
3 Ashland Siskiwiw .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & Gt. W. ....				
6 Bayfield Transfer R'y .....	324		324	
7 Chicago, Milwaukee & St. P. ....	482,304	246,178		
8 Chicago & Northwestern ...	476,475	643,163	904,585	214,993
9 Chicago, St. P., M. & O. ....	74,168	237,113	237,067	74,219
10 Chicago, Burlington & North.				
11 Chicago, L. Shore & East. ....				
12 Chicago & Lake Superior.....				
13 Chicago, Madison & North. ....	4,638	29,299	23,305	10,632
14 Chicago, Wisconsin & Minn. ....				
15 Chippewa Riv. & Menom. ....			85,000	
16 Drummond & South Western .....	380			
17 Duluth, So. Shore & Atl. ....	24,292			
18 Duluth Short Line .....				
19 Duluth, Superior & West. ....				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....				
22 Fairchild & North East. ....	1,040	990	1,638	842
23 Green Bay & Western .....	22,163	33,344	32,467	23,640
24 Hazelhurst & South Eastern .....	102	67	25	144
25 Iola & Northern .....	861	147	185	833
26 Glenwood & Northeastern.....				
27 Kewaunee, Green Bay & W. ....	9,201	5,897	8,004	7,094
28 Kickapoo Val. & Northern. ....	3,753	424	168	2,927
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago. ....				
32 Milwaukee & Superior .....	498	15,990	13,765	2,225
33 Marshfield & South Eastern .....				
34 Marinette, Tom. & West. ....	912	469	606	775
35 Milwaukee & Wauwatosa .....				
36 Minnesota & Wisconsin .....	1,415	453	642	1,226
37 Minn., St. Paul & Ashl'd. ....				
38 M., St. P. & Sault St. Marie .....	37,317	38,877	19,781	56,413
39 Northern Pacific .....		51,549	18,953	32,536
40 Northwestern Coal R'y Co. ....				
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....				
43 Rice L., Dallas & Menom. ....	563	171	113	621
44 St. Cloud, G'tsb'g & Ashl'd. ....				
45 Washburn, Bayfield & I. R. ....	817	154	77	894
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....	5,531	6,449	11,174	804
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. ....				
51 Wisconsin Central Co. ....	258,667	170,209	263,113	165,763
52 Hawthorn, Nebagam & S. ....				
53 St. Paul & Duluth .....		10,183	3,517	6,666

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899—Merchandise and miscellaneous products, (company's material excluded).

Total freight tonnage.	Per cent.	Grand total freight originating on road named in Wisconsin. Whole tons.	Grand total freight received from this road originating outside of Wisconsin and all other freight received from connecting roads and carriers. Whole tons.	GRAND TOTAL FREIGHT TONNAGE.		No.
				Whole tons	Per cent.	
5,204		28,031	1,090	29,121		1
		16,281	5,915	22,736	100	2
						3
						4
324		5,418		5,418	100	5
728,482	15.136			4,812,771	100	6
1,149,578	11.53	4,663,514	914,760	5,576,274	100	7
311,286	16.69	1,234,017	186,067	1,420,084	100	8
						9
						10
33,937	26.6	46,446	66,054	112,499	100	11
						12
		85,000				13
		50,970		50,970		14
		144,696	87,825	232,521	100	15
						16
				580,105	100	17
						18
2,030		69,912	2,265	71,177		19
56,107	16.6	204,238	145,127	349,365	100	20
169	.17	99,204	1,352	100,556	100	21
1,008	6.74	12,942	1,996	14,938	100	22
						23
15,098	12.42	67,723	53,866	121,589	100	24
4,177	2.25	29,640	7,043	36,684	100	25
						26
						27
						28
						29
15,990	14.4	101,698	12,231	113,929	100	30
						31
1,381	1.99	20,986	48,347	69,333	100	32
						33
1,868	3.25	37,522	6,373	43,895	100	34
						35
76,194	4.39	1,196,312	526,292	1,722,604	100	36
51,549	4.55	127,592	1,006,642	1,134,244	100	37
		455,715		455,715	100	38
						39
						40
734	3.24	21,003	1,634	22,637	100	41
						42
971	50.60	185,424	1,190	186,614	100	43
						44
						45
11,980	9.51	117,813	8,196	126,009	100	46
						47
428,876	12.30	1,606,340	1,880,320	3,486,660	100	48
						49
10,183	3.20	458,791	158,620	317,411	100	50
						51
						52
						53

*Freight Traffic.*

Freight traffic movement, Wisconsin, 1899—Manufactures (company's material excluded).

Name of Company.	Wines, liquor and beer.	Household goods and furniture.	Freight originating on this road in Wisconsin. Whole tons.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....	239	127	90
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....			55
7 Chicago, Milwaukee & St. Paul .....	231,775	19,338	
8 Chicago & Northwestern .....	157,776	72,733	616,905
9 Chicago, St. Paul, Minn. & O. ....	6,907	5,945	25,723
10 Chicago, Burlington & Northern .....			
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....		510	1,502
13 Chicago, Madison & Northern .....	1,004		
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....			
16 Drummond & South Western .....		264	2,571
17 Duluth, South Shore & Atlantic .....	466		
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern R'y Co. of Minnesota .....			
22 Fairchild & North Eastern .....		39	10
23 Green Bay & Western .....	2,535	1,393	8,237
24 Hazelhurst & South Eastern .....	36	28	29
25 Iola & Northern .....		32	32
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	496	203	4,140
28 Kickapoo Valley & Northern .....		245	340
29 Lake Sup. Ter. and Trans. R'y Co. ....			
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	35	112	999
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	76	81	64
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	330	149	100
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault St. Marie .....	3,150	1,709	35,156
39 Northern Pacific .....	2,179	1,349	13,714
40 Northwestern Coal R'y Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....		64	176
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....	199	51	1,569
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....			
51 Wisconsin Central Co. ....	17,481	11,143	63,042
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	276	370	6,014

*Freight Traffic.*Freight traffic movement, 1899--Manufactures (company's material excluded)--  
Continued.

Name of Company.	All other freight received from connecting roads and carriers. Whole tons.	Total freight tonnage. Whole tons.	Total freight tonnage. Whole tons.
1 Abbotsford & Northeastern .....			
2 Ahnaupsee & Western .....	933	1,023	39.48
3 Ashland Siskiwt .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....		55	1.2
7 Chicago, Milwaukee & St. Paul .....		676,352	13,992
8 Chicago & Northwestern .....	57,582	675,537	12
9 Chicago, St. Paul, Minneapolis & Omaha .....	47,566	64,189	4.52
10 Chicago, Burlington & Northern .....			
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....	5,197	6,799	5.99
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....			
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....	8,987	11,558	4.98
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern R'y Co. of Minnesota .....			
22 Fairchild & North Eastern .....	415	425	.594
23 Green Bay & Western .....	7,332	15,569	4.6
24 Hazelhurst & South Eastern .....	213	242	.25
25 Iola & Northern .....	533	565	3.8
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	799	4,939	3.95
28 Kickapoo Valley & Northern .....	587	1,048	3.2
29 Lake Sup. Terminal & Transfer R'y Co. ....			
30 Mattoon Railway Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....	590	1,589	1.38
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	849	903	1.3
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	1,600	1,700	3.87
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	49,448	84,642	4.88
39 Northern Pacific .....	50,383	64,097	5.65
40 Northwestern Coal Railway Co. ....			
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....	348	524	2.34
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....	12	12	.1
46 West Range .....			
47 Winona Bridge Railway Co. ....			
48 Wisconsin & Michigan .....	2,407	3,776	3
49 Whitcomb & Morris .....			
50 Wisconsin Central R. R. Co. ....			
51 Wisconsin Central Co. ....	113,754	176,796	5.7
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	3,070	9,184	2.88



## Equipment.

Description of equipment — Whole line, 1899 — Locomotives.

NAME OF COMPANY.	PASSENGER.		FREIGHT.		SWITCHING.		LEASED.	
	N'mb'r added during year.	Total num'b'r at end of year.	N'mb'r added during year.	Total num'b'r at end of year.	N'mb'r added during year.	Total num'b'r at end of year.	N'mb'r added during year.	Total num'b'r at end of year.
1 Abbotts'd & North'n.....			1					
2 Ahnapee & Western.....	1	2						
3 Ashland Siskiwit.....								
4 Big Falls R'y Co.....								
5 Bayfield H. & G. W. J.....								
6 Bayfield Trans. R'y.....				1				
7 Chicago, M. & St. P.....	2	212	*15	486	11	115		
8 Chicago & N. W.....		218		657		135		
9 Chi. St. P. M. & O.....		58		171		40		
10 Chicago, B. & N.....		12		38		8		
11 Chicago, L. S. & E.....						10		47
12 Chicago & Lake Sup.....		1						
13 Chicago, Mad. & N.....		5		10				
14 Chicago, Wis. & M.....				3				
15 Chippewa River & M.....				3				
16 Drummond & S. W.....				3				
17 Duluth S. S. & A.....		29		46		18		
18 Duluth Short Line.....								
19 Duluth, Sap. & W.....								
20 Dunbar & W'usa'kee.....								
21 East'n R'y Co. of M.....	4	22	14	45	5	11		
22 Fairchild & N. E.....	1	4						
23 Green Bay & West'n.....	2	7		16		2		
24 Hazelhurst & S. E.....				1		1		
25 Iola & Northern.....				1				
26 Glenwood & North'n.....				1				
27 Kewaunee, G. B. & W.....		1		1				
28 Kickapoo V. & N.....		3						
29 L. S. T. & T. R'y Co.....						7		
30 Mattoon R'y Co.....								
31 Milwaukee & Lake W.....		2		2		1		
32 Milwaukee & -up'or.....	1	1	1	2	1	1		
33 Marshfield & S. E.....	1	2		1				
34 Marinette, T. and W.....			2	3	3	3		
35 Milw. & Wauwatosa.....								
36 Minnesota & Wis.....								
37 Min'ap'lis, St. P. & A.....								
38 M., St. P. & S. Ste. M.....		23		69		10		
39 Northern Pacific.....	4	78	22	409	2	86		
40 Northw'n C. R'y Co.....				1		1		
41 Oshkosh Transp. Co.....								
42 Packwaukee & M.....								
43 Rice Lake, D. & M.....		1						
44 St. Cloud, G. & A.....								
45 Washburn, B. & I. R.....		1		6				
46 West Range.....								
47 Winona B. R'y Co.....								
48 Wisconsin & Mich.....		2		3		1		
49 Whitcomb & Morris.....								
50 Wis. Cent. R. R. Co.....			4	4				
51 Wisconsin Cent. Co.....		5	3	4		4		71
52 Hawthorn, N. & S.....								
53 St. Paul & Duluth.....		21	71	23	72	9		

\* Condemned.

† Sold.

Equipment.

Description of equipment — Whole line, 1893 — Locomotives — Continued.

TOTAL.		EQUIPPED WITH TRAIN BRAKE.		FITTED WITH AUTOMATIC COUPLERS.		No.
N'mb'r added during year.	Total num'b'r at end of year.	Total number.	Kind.	Total number.	Kind.	
1						1
1	2	1	Westinghaus			2
						3
						4
						5
	1	1	New York			6
*2	813	748	Westinghaus	40		7
	1,010	1,008	Westinghaus	421	Chicago	8
	209	209	Various kinds	180	Chicago	9
	58	58	Westinghaus	52	M. C. B.	10
	57	52	Westinghaus and American.	32	Tower	11
	1					12
	15	15	Westinghaus			13
	3					14
	3					15
	93	63	Westinghaus			16
						17
						18
						19
23	81	81	Westinghaus, etc.			20
1	4	2	Westinghaus			21
2	25	25	Westinghaus	4	Trojan	22
	2	1	Westinghaus			23
	1	1	Westinghaus			24
						25
	2	2	Westinghaus	2	Trojan	26
	3	3	Westinghaus	3	Hein	27
	7	7	Westinghaus & Am. Steam			28
						29
	5	5	Westinghaus			30
3	4	4	Westinghaus			31
1	3	2	Westinghaus			32
5	6	3	Westinghaus, etc.			33
						34
						35
						36
	102	102	Westinghaus, etc.	99	Washburn & Trojan	37
28	570	567	Westinghaus	61	Tower	38
	2	2				39
						40
	1	1	Westinghaus			41
						42
	7	7	Westinghaus			43
						44
						45
	6	6	Westinghaus			46
	1					47
4	4	4	Westinghaus			48
3	109	109	Westinghaus			49
						50
†3	59	55	Westinghaus, etc.	3	M. C. B.	51
						52
						53

\* Minus.

† Sold.

### Equipment.

Description of equipment, whole line, 1899—Cars in passenger service.

NAME OF COMPANY.	FIRST CLASS.		SECOND CLASS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & Northeastern .....		1		
2 Ahnapee & Western .....				
3 Ashland Siskiwit .....				
4 Big Falls Railway Co. ....				
5 Bayfield Harbor & G. W. . . .				
6 Bayfield Transfer Railway ]				
7 Chicago, Mil. & St. Paul . . .	6	173	*7	217
8 Chicago & Northwestern . . .	2	483		44
9 C. St. P. M. & O. ....		78		17
10 Chicago, Burlington & Nor. ....		20		
11 Chicago, Lake Shore & E. . . .				
12 Chicago & Lake Superior . . .				
13 Chicago, Madison & North'n . . .				
14 Chicago, Wis. & Minn. ....		7		4
15 Chippewa River & Menom. ....				
16 Drummond & South Western . . .				
17 Duluth, South Shore & Atl. . . .		15		8
18 Duluth Short Line .....				
19 Duluth, Superior & Western . . .				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. . . .	1	9		
22 Fairchild & North Eastern . . .				
23 Green Bay & Western .....		6		6
24 Hazelhurst & S. E. ....				
25 Iola & Northern .....				
26 Glenwood & Northeastern . . .				
27 Kewaunee, Green Bay & W. . . .		2		
28 Kickapoo Valley & Northern . . .		1		
29 Lake Sup. T. & T. R'y Co. . . .				
30 Mattoon Railway Co. ....				
31 Milwaukee & Lake Win' bago . . .		1		2
32 Milwaukee & Superior . . .	1	1		
33 Marshfield & South Eastern . . .				
34 Marinette, Tomahawk & W. . . .	1	1		
35 Milwaukee & Wauwatosa . . .				
36 Minnesota & Wisconsin . . .				
37 Minneapolis, St. P. & Ashl'd . . .				
38 M., St. P. & S. Ste. M. ....		15		14
39 Northern Pacific .....	15	85	13	83
40 Northwestern Coal R'y Co. . . .				
41 Oshkosh Transportation Co. . . .				
42 Packwaukee & Montello . . .				
43 Rice Lake, Dallas & Menom. . . .				
44 St. Cloud, Grautsb. & Ashl'd . . .				
45 Washburn, Bayfield & I. R. . . .		1		
46 West Range .....				
47 Winona Bridge Railway Co. . . .				
48 Wisconsin & Michigan . . .				1
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. . . .				6
51 Wisconsin Central Co. ....		9		
52 Hawthorn, Nebagm'n & Sup. . . .				
53 St. Paul & Duluth .....		17		17

\*Sold

*Equipment.*

Description of equipment, whole line, 1899—Cars in passenger service—Continued.

COMBINATION.		EMIGRANT.		DINING CARS.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
	1					1
						2
						3
						4
						5
	1					6
	14				8	7
9	115				9	8
	25				1	9
	2				2	10
						11
	1					12
	1					13
	1					14
						15
	8					16
						17
						18
						19
						20
1	7					21
	1					22
2	3					23
	1					24
	1					25
						26
	2					27
	2					28
						29
						30
						31
1	1					32
1	2					33
1	2					34
						35
						36
						37
	6		20		3	38
	25		58		25	39
						40
						41
						42
	1					43
						44
						45
						46
						47
	1					48
						49
	2					50
						51
						52
	14					53

## Equipment.

Description of equipment, whole line, 1899—Cars in passenger service—Continued.

NAME OF COMPANY.	PARLOR CARS.		SLEEPING CARS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....				
3 Ashland Siskiwit .....				
4 Big Falls Railway Co. ....				
5 Bayfield Harbor & G. W. . .				
6 Bayfield Transfer Railway ] .....				
7 Chicago, Mil. & St. Paul ..	*1	15		53
8 Chicago & Northwestern .....		22		
9 C. St. P. M. & O. ....		9		
10 Chicago, Burlington & Nor. ....		2		
11 Chicago, Lake Shore & E. . .				
12 Chicago & Lake Superior .....				
13 Chicago, Madison & North'n ..				
14 Chicago, Wis. & Minn. ....				
15 Chippewa River & Menom. . .				
16 Drummond & South Western ..				
17 Duluth, South Shore & Atl. . .				
18 Duluth Short Line .....				
19 Duluth, Superior & Western ..				
20 Dunbar & Wausaukee .....				
21 Eastern R'y of Minn. ....		3		20
22 Fairchild & North Eastern . .				
23 Green Bay & Western .....				
24 Hazelhurst & S. E. ....				
25 Iola & Northern .....				
26 Glenwood & Northeastern . .				
27 Kewaunee, Green Bay & W. . .				
28 Kickapoo Valley & Northern ..				
29 Lake Sup. T. & T. R'y Co. . .				
30 Mattoon Railway Co. ....				
31 Milwaukee & Lake Win'ago . .				
32 Milwaukee & Superior .....				
33 Marshfield & South Eastern ..				
34 Marinette, Tomahawk & W. . .			1	1
35 Milwaukee & Wauwatosa . . .				
36 Minnesota & Wisconsin .....				
37 Minneapolis, St. P. & Ash'l'd ..				
38 M., St. P. & S. Ste. M. ....				8
39 Northern Pacific .....				50
40 Northwestern Coal R'y Co. . .				
41 Oshkosh Transportation Co. . .				
42 Packwaukee & Montello . . .				
43 Rice Lake, Dallas & Menom. . .				
44 St. Cloud, Grantsb. & Ash'l'd ..				
45 Washburn, Bayfield & I. R. . .				
46 West Range .....				
47 Winona Bridge Railway Co. . .				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. . .				
51 Wisconsin Central Co. ....				
52 Hawthorn, Nebaem'n & Sup. . .				
53 St. Paul & Duluth .....		5		7

\*Sold.

*Equipment.*

Description of equipment, whole line, 1899—Cars in passenger service—Continued.

BAGGAGE, EXPRESS, POSTAL		OTHER CARS.		TOTAL.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
	1				3	1
						2
						3
						4
					1	5
6	295		2	4	777	6
7	193			18	866	7
	71				201	8
	10				36	9
						10
					1	11
	4				16	12
					1	13
	12		2		49	14
						15
	4			2	43	16
					1	17
	7			2	22	18
					1	19
					1	20
	1				5	21
					3	22
	2				6	23
				2	2	24
				1	2	25
				3	4	26
						27
	18				84	28
14	139	1	8	43	473	29
						30
						31
			1		2	32
						33
					1	34
						35
						36
						37
						38
						39
						40
						41
						42
						43
						44
						45
						46
						47
						48
						49
						50
	2				8	51
					11	52
	10		2		72	53

## Equipment.

Description of equipment — Whole line, 1899 — Cars equipped with train brake and automatic couplers — Passenger and freight service.

NAME OF COMPANY.	CARS IN PASSENGER SERVICE.			
	Equipped with Train Brakes.		Equipped with Automatic Couplers.	
	Number.	Kind.	Number.	Kind.
1 Abbotsford & N'th'rn	3	Westinghouse	3	Miller
2 Ahnapee & Western				
3 Ashland & Sickiwit.				
4 Big Falls R'y Co.				
5 Bayfield H. & G. W.				
6 Bayfield Transf. R'y				
7 Chicago, M. & St. P.	772	Westinghouse	759	Various
8 Chicago & N. W.	886	Westinghouse	886	Chicago & Miller
9 Chi., St. P. M. & O.	201	Westinghouse	201	Miller
10 Chicago, B. & N.	36	Westinghouse	36	M. C. B.
11 Chicago, L. S. & E.				
12 Chicago & Lake Sup.				
13 Chicago, Mad. & N.				
14 Chicago, Wis. & Minn.	16	Westinghouse	16	Miller
15 Chippewa R. & M.				
16 Drummond & S. W.				
17 Duluth, S. S. & A.	49	Westinghouse	49	Miller
18 Duluth Short Line				
19 Duluth, Sup. & W.				
20 Dunbar & Wausaukee				
21 East. R'y Co. of Minn.	43	Westinghouse & N. Y.	43	Janey & Standard
22 Fairchild & N. E.	1	Westinghouse	1	Miller
23 Green Bay & Western.	22	Westinghouse	22	Miller
24 Hazelhurst & S. E.	1	Westinghouse		
25 Iola & Northern	1	Westinghouse	1	Miller
26 Glenwood & N. E.				
27 Kewaunee, G. B. & W.	5	Westinghouse	5	Miller
28 Kickapoo V. & N.	3	Westinghouse	3	Hein
29 L. S. T. & T. R'y Co.				
30 Mattoon R'y Co.				
31 Milwaukee & Lake W.	6	Westinghouse	6	Miller
32 Milwaukee & Superior	2	Westinghouse		
33 Marshfield & S. E.				
34 Marinette, T. & W.				
35 Milwaukee & W.				
36 Minnesota & Wis.				
37 Minn'polis, St. P. & A.				
38 Min'is, St. P. & S. S. M.	84	Westinghouse	84	Washburn & Trojan
39 Northern Pacific	473	Westinghouse	464½	Various
40 Northw. Coal R'y Co.				
41 Oshkosh Transp. Co.				
42 Packwaukee & M.				
43 Rice Lake, D. & M.	2	Westinghaus	2	Janey & Trojan
44 St. Cloud, G. & A.				
45 Washburn, B. & I. R.	1	Westinghouse	1	M. C. B.
46 West Range				
47 Winona B. R'y Co.				
48 Wisconsin & Michigan			2	Janey
49 Whitcomb & Morris				
50 Wisconsin C. R. R. Co.	8	Westinghouse	8	Miller
51 Wisconsin Cent. Co.	11	Westinghouse	11	Miller
52 Hawthorn, N. & S.				
53 St. Paul & Duluth	72	Westinghouse	72	Miller

*Equipment.*

Description of equipment — Whole line, 1899 — Cars equipped with train brakes and automatic couplers — Passenger and freight service — Continued.

CARS IN FREIGHT SERVICE.				Total passenger cars.	Total freight cars.	No.
Equipped with Freight Brake.		Equipped with Automatic Couplers.				
Number.	Kind.	Number.	Kind.			
3	Westinghouse			3	46	1
						2
						3
						4
						5
				1	19	6
22,761	Westinghouse	33,098	M. C. B	777	33,524	7
27,730	Westinghouse	36,568	Various	886	36,587	8
7,991	Westinghouse	9,745	Chicago, M. C. B, Janey	201	9,775	9
772	Westinghouse	3,129	M. C. B	36	3,350	10
1,272	Westinghouse	2,817	Tower	1	3,031	11
						12
						13
1	Westinghouse	21	Janey, Chicago & Tower	16	142	14
					95	15
					78	16
713	Westinghouse	1,191	Various	49	2,743	17
						18
						19
						20
4,236	Various	4,191	Various	43	4,490	21
4	Westinghouse	4	Hein	1	64	22
		316	Trojan	22	300	23
				1	53	24
				1	4	25
				5		26
2	Westinghouse	2	Hein	3	2	27
						28
						29
						30
		7	Janey	6	11	31
		11	Janey	2	150	32
				2	42	33
		5	Washburn	4	46	34
						35
						36
						37
987	Westinghouse	1,399	Washburn & Janey	19	1,479	38
17,333	Westinghouse & N. Y.	18,676	Various	473	20,585	39
						40
						41
				2		42
						43
				1	316	44
						45
						46
10	Westinghouse	579	Chicago	2	579	47
						48
1,512	Westinghouse	1,527	Various	8	1,552	49
2,468	Westinghouse	2,472	Various	11	2,487	50
						51
1,672	Westinghouse & N. Y.	1,746	M. C. B	72	2,593	52
						53



## Equipment.

Description of equipment, whole line, 1899—Cars in freight service.

NAME OF COMPANY.	BOX CARS.		FLAT CARS.		STOCK CARS.		COAL CARS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & N. E.				4				
2 Ahnapee & Western		1		5				
3 Ashland Siskiwit								
4 Big Falls R'y Co.								
5 B. H. & G. W.]								
6 Bayfield Tr. R'y				19				
7 C. M. & St. P.	3,423	23,676	598	6,162	*132	2,726		
8 C. & N. W.	500	20,273	250	3,895		2,881	750	4,500
9 C. St. P. M. & O.	1,000	7,104		1,134		393		932
10 Chicago, Bur. & N.		2,450		100		300		500
11 Chicago L. S. & E.		2,045		340		28		395
12 Chicago & L. Sup.								
13 Chicago, Mad. & N.		126						
14 Ch. Wis. & Minn.		126		5		6		3
15 Chip. R. & Menom.								
16 Drummond & S. W.				31				
17 D. S. S. & A.		1,106		450				32
18 Duluth Short Line								
19 Duluth, Sup. & W.								
20 Dunb'r & Waus'kee								
21 E. R'y Co. of Minn.	1,001	2,498	29	322	750	750		
22 Fairchild & N. E.		4	10	55				
23 Green Bay & W.	379	300	67					
24 Hazelhurst & S. E.								
25 Iola & Northern		1		3				
26 Glenwood & N. E.								
27 K. G. B. & W.								
28 Kickapoo Val. & N.		2						
29 L. S. T. & T. R. Co.								
30 Mattoon R'y Co.								
31 Mil. & Lake Win.		2		6				3
32 Milwaukee & Sup.	79	79	40	60			11	11
33 Marshfield & S. E.				35				
34 Marinette, T. & W.	10	10						
35 Mil. & Wauwatosa								
36 Minn. & Wis.								
37 M. St. P. & A.								
38 M. St. P. & S. & E. M.	100	1,249		149		22		11
39 Northern Pacific	1,520	12,183	264	4,205	*20	879	*144	2,328
40 N. W. Coal R'y Co.								
41 Oshkosh Trans. Co.								
42 Peckwan. & Men.								
43 Rice Lake, D. & M.								
44 St. Cloud, G. & A.								
45 W. B. & I. R.		2		207				7
46 West Range								
47 Winona R. R'y Co.								
48 Wis. & Mich.		469		110				
49 Whitcomb & Morris		3						
50 Wis. Cen. R. R. Co.	660	1,196	150	281			45	68
51 Wisconsin Cen. Co.	440	1,300	100	135			30	42
52 Northwestern, N. & S.								
53 St. Paul & Duluth	455	2,199	*16	330	*4	10		23

\*Sold.

*Equipment.*

Description of equipment, whole line, 1899—Cars in freight service—Continued.

TANK CARS.		REFRIGERATOR CARS.		OTHER CARS.		TOTAL.	TOTAL.	No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Total num- added dur- ing year.	Total num- ber box cars in freight ser- vice at end of year.	
							4	1
							6	2
								3
								4
							19	5
		*9	715	*65	245	3,815	33,524	6
			646		4,392	1,500	36,587	7
			85		127	1,000	9,775	8
							7,350	9
					223		3,031	10
								11
								12.
							142	13
	2			5	95	5	95	14
					75		78	15
		3	12	400	1,143	403	2,743	16
								17
								18
			10		910	1,780	4,490	19
			1		4	11	64	20
		1				451	300	21
		5					53	22
					53		53	23
					53		54	24
								25
								26
							2	27
								28
								29
								30
							11	31
						130	150	32
							42	33
				36	36	46	46	34
								35
								36
		4	8	4	40	108	1,479	37
	9	*1	263	487	716	2,106	20,585	38
								39
								40
								41
								42
								43
							316	44
								45
								46
								47
					4		579	48
							7	49
						855	1,552	50
	1				1,009	570	2,487	51
								52
		9	17		14	444	2,593	53

*Equipment.*

Description of equipment, whole line, June 30, 1899—Cars in company's service; cars contributed to fast freight line service, cars leased.

NAME OF COMPANY.	GRAVEL CARS.		DERRICK CARS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....				
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. } .....				
6 Bayfield Transfer R'y } .....				
7 Chicago, Milwaukee & St. P. ....			*15	11
8 Chicago & Northwestern .....				22
9 Chicago, St. P., M. & O. ....				1
10 Chicago, Burlington & N. ....				
11 Chicago, L. Shore & East. ....				
12 Chicago & Lake Superior .....				
13 †Chicago, Madison & North. ....				
14 Chicago, Wisconsin & Minn. ....				1
15 Chippewa Riv. & Menomonie .....				
16 Drummond & South West. ....				3
17 Duluth, So. Shore & Atl. ....	62			
18 Duluth Short Line .....				
19 Duluth, Superior & Western .....				
20 Dunbar & Wausaukee .....			1	3
21 Eastern Railway Co. of M. ....				
22 Fairchild & Northeastern .....			1	
23 Green Bay & Western .....				
24 Hazelhurst & South Eastern .....				
25 Iola & Northern .....				
26 Glenwood & Northeastern .....				
27 Kewaukee, G. Bay & West. ....				
28 Kickapoo Val. & Northern. ....	29			
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago. ....				
32 Milwaukee & Superior .....				
33 Marshfield & South East. ....				
34 Marinette, Tom. & Western. ....			1	1
35 Milwaukee & Wauwatosa. ....				
36 Minnesota & Wisconsin .....				
37 Minn. St. Paul & Ashland .....				
38 M. St. P. & Sault Ste. Marie .....	51			3
39 Northern Pacific .....	2		1	11
40 Northwestern Coal R'y Co. ....				
42 Packwaukee & Montello .....				
43 Rice Lake, Dallas & Men. ....				
44 St. Cloud, Grantsburg & A. ....				
45 Washburn, Bayfield & I. R. ....				
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Cen. R. R. Co. ....				1
51 Wisconsin Central Co. ....				
52 Hawthorn, Nebagamon & S. ....				
53 St. Paul & Duluth .....				3

\*Sold.

†Not given.

*Equipment.*

Description of Equipment, whole line, June 30, 1899—Cars in company's service, cars contributed to fast freight line service, cars leased—Continued.

CABOOSE CARS.		OTHER ROAD CARS.		TOTAL.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
	1				1	1
		1	1	1	1	2
						3
						4
		3	3	3	3	5
15	498	10	83	25	591	6
	546	17	61	2	629	7
	127		107		243	8
	29		3		33	9
						10
						11
						12
	7				7	13
	2		3		6	14
	1				1	15
	33		54		152	16
						17
						18
16	36	23	44	40	83	19
						20
12		12	1	25	1	21
	1				1	22
						23
						24
						25
						26
	2		2		33	27
			1		1	28
			3			29
	3					30
						31
1	1			2	2	32
						33
						34
						35
						36
	68		10		132	37
7	299	317	2,217	311	2,529	38
			1			39
						40
						41
						42
						43
	3				3	44
						45
	2		4		6	46
						47
	13	1	8	1	22	48
1	27		2	1	29	49
						50
3	22	4	44	7	69	51
						52
						53

## Equipment.

Description of Equipment, whole line, June 30, 1899—Cars in company's service, cars contributed to fast freight line service, cars leased—Continued.

NAME OF COMPANY.	FAST FREIGHT LINE.		TOTAL OWNED.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & Northeastern.....				10
2 Ahnapee & Western.....				
3 Ashland Siskiwit.....				
4 Big Falls R'y Co.....				
5 Bayfield Harbor & G. W.....			3	23
6 Bayfield Transfer R'y.....				34,892
7 Chicago, Milwaukee & St. P.....			3,844	38,082
8 Chicago & Northwestern.....			1,520	10,219
9 Chicago, St. P. M. & O.....			1,000	3,477
10 Chicago, Burlington & Nor.h.....				122
11 Chicago, Lake Shore & East.....				2
12 Chicago & Lake Superior.....				
13 Chicago, Madison & North.....				167
14 Chicago, Wisconsin & Minn.....				102
15 Chippewa River & Menom.....				79
16 Drummond & South West.....				2,944
17 Duluth, South Shore & At.....		160	403	
18 Duluth Short Line.....				
19 Duluth, Superior & Western.....				
20 Dunbar & Wausaukee.....				
21 Eastern R'y Co. of Minn.....			1,822	4,616
22 Fairchild & North Eastern.....			11	64
23 Green Bay & Western.....			498	323
24 Hazelhurst & South East.....				55
25 Iola & Northern.....				5
26 Glenwood & Northeastern.....				5
27 Kewaunee, Green Bay & W.....				38
28 Kickapoo Val. & Northern.....				8
29 Lake Sup. T. & T. R'y Co.....				
30 Mattoon R'y Co.....				20
31 Milwaukee & L. Winnebago.....				152
32 Milwaukee & Superior.....			132	44
33 Marshfield & South Eastern.....				52
34 Marinette, Tom. & Western.....			51	
35 Milwaukee & Wauwatosa.....				
36 Minnesota & Wisconsin.....				
37 Minneapolis, St. Paul & Ash.....				4,600
38 M., St. P. & Sault St. Marie.....		471	503	23,587
39 Northern Pacific.....			2,460	1
40 Northwestern Coal R'y Co.....				
41 Oshkosh Transportation Co.....				
42 Packwaukee & Montello.....				2
43 Rice Lake, Dallas & Menom.....				
44 St. Cloud, Grantsburg & A.....				320
45 Washburn, Bayfield & I. R.....				
46 West Range.....				
47 Winona Bridge R'y Co.....				587
48 Wisconsin & Michigan.....				8
49 Whitcomb & Morris.....				1,582
50 Wisconsin Central R. R. Co.....			869	2,527
51 Wisconsin Central Co.....			571	
52 Hawthorn, Nebagamon & S.....				
53 St. Paul & Duluth.....			451	2,734

*Equipment.*

Description of equipment, whole line, June 30, 1899—Cars in company's service, cars contributed to fast freight line service, cars leased—Continued.

CARS LEASED.		GRAND TOTAL.		GRAND TOTAL.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
			5			1
			10	3	3	2
						3
						4
		3	23	1		5
		3,844	34,892	23,563	34,434	6
		1,520	38,082	28,659	38,057	7
		1,000	10,219	8,195	10,178	8
			3,477	869	3,245	9
			122	56	56	10
			2			11
			165			12
			102	20	40	13
			79			14
		403	2,944	891	1,305	15
						16
						17
						18
						19
		1,822	4,616	4,286	4,246	20
		11	65	5	5	21
		498	323	47	343	22
			55	2		23
			5	1	1	24
						25
			5	5	5	26
			38	7	7	27
			8			28
						29
			20	7	13	30
		132	152	6	11	31
			44	2		32
		56	58	3		33
						34
						35
						36
						37
	2,420	503	7,020	4,678	6,592	38
		2,460	23,587	18,146	19,196½	39
			1	1	1	40
						41
			2	2	2	42
						43
			320	8	1	44
						45
			587	16	583	46
			8			47
	2,488	860	1,582	1,525	1,541½	48
		571	5,015	3,708	3,838	49
500	500	*49	2,234	1,254	1,328	50
						51
						52
						53

\*Sold.

## Equipment.

Description of equipment, whole line, 1899.

Name of Company.	Locomotives of all kinds.	Cars in passenger service of all kinds.	Cars in freight service all kinds.	Cars of all kinds in company's service.
1 Abbot'sford & Northeastern . . . . .	1		4	1
2 Ahnapee & Western . . . . .	2	3	9	10
3 Ashland Siskiwit . . . . .				
4 Big Falls R'y Co. . . . .				
5 Bayfield Harbor & G. W. . . . .				
6 Bayfield Transfer R'y . . . . .	1	1	19	3
7 Chicago, M.I. & St. Paul . . . . .	813	777	33,524	591
8 Chicago & Northwestern . . . . .	1,010	866	36,587	629
9 Chicago, St. Paul, M. & O. . . . .	269	201	9,775	243
10 Chicago, Burlington & Nor. . . . .	58	36	3,350	33
11 Chicago, Lake Shore & E. . . . .	57		3,031	3,045
12 Chicago & Lake Superior . . . . .	1	1		
13 Chicago, Madison & North'n . . . . .				
14 Chicago, Wis. & Minn. . . . .	15	16	142	7
15 Chippewa River & Menom. . . . .	3	1	95	6
16 Drummond & S. W. . . . .	3		78	1
17 Duluth, South Shore & Atl. . . . .	93	49	2,743	152
18 Duluth Short Line . . . . .				
19 Duluth, Superior & Western . . . . .				
20 Danbar & Wausaukee . . . . .				
21 Eastern R'y Co. of Minn. . . . .	81	43	4,490	83
22 Fairchild & North Eastern . . . . .	4	1	64	
23 Green Bay & Western . . . . .	25	22	300	1
24 Hazelhurst & S. E. . . . .	2	1	53	1
25 Iola & Northern . . . . .	1	1	4	
26 Glenwood & Northeastern . . . . .				
27 Kewaukee, Green Bay & W. . . . .	2	5		
28 Kickapoo Valley & Northern . . . . .	3	3	2	33
29 Lake Sup. T. & T. R'y Co. . . . .	7			1
30 Mattoon R'y Co. . . . .				
31 Milwaukee & Lake Win'ago . . . . .	5	6	11	3
32 Milwaukee & Superior . . . . .	4	2	150	
33 Marshfield & South Eastern . . . . .	3	2	42	
34 Marinette, Tomahawk & W. . . . .	6	4	46	2
35 Milwaukee & Wauwatosa . . . . .				
36 Minnesota & Wisconsin . . . . .				
37 Minneapolis, St. P. & Ashl'd . . . . .				
38 M. St. P. & S. Ste. M. . . . .	102	84	6,804	132
39 Northern Pacific . . . . .	570	473	20,585	2,529
40 Northwestern Coal R'y Co. . . . .	2			1
41 Oshkosh Transportation Co. . . . .				
42 Packwaukee & Montello . . . . .				
43 Rice Lake, Dallas & Menom. . . . .	1	2		
44 t. Cloud, Grants. & Ashl'd . . . . .				
45 Washburn, Bayfield & I. R. . . . .	7	1	316	3
46 West Range . . . . .				
47 Winona Bridge R'y Co. . . . .		2	570	6
48 Wisconsin & Michigan . . . . .	6		7	
49 Whitcomb & Morris . . . . .	1			
50 Wisconsin Central R. R. Co. . . . .	4	8	1,552	22
51 Wisconsin Central Co. . . . .	109	11	2,487	29
52 Hawthorn, Nebagm'n & Sup. . . . .				
53 St. Paul & Duluth . . . . .	59	72	2,593	69

*Equipment.*

Description of equipment, whole line, 1899—Continued.

Name of Company.	Cars contributed to fast freight line service.	Total owned.	Grand total.	Cars leased.
1 Abbottsford & Northeastern		5	5	
2 Ahnapee & Western		10	10	
3 Ashland Siskiwt				
4 Big Falls R'y Co.				
5 Bayfield Harbor & G. W.				
6 Bayfield Transfer R'y		23	23	
7 Chicago, Mil. & St. Paul		34,892	34,892	
8 Chicago & Northwestern		38,082	38,082	
9 Chicago, St. P., M. & O.		10,219	10,219	
10 Chicago, Burlington & Nor.		3,477	3,477	
11 Chicago, Lake Shore & E.		3,045	3,045	
12 Chicago & Lake Superior		2	2	
13 Chicago, Madison & North'n				
14 Chicago, Wis. & Minn.		165	165	
15 Chippewa River & Menom.		102	102	
16 Drummond & South Western		79	79	
17 Duluth, South Shore & Atl.	100	2,944	2,944	
18 Duluth Short Line				
19 Duluth, Superior & Western				
20 Dunbar & Wausaukee				
21 Eastern R'y Co. of Minn.		4,616	4,616	
22 Fairchild & North Eastern		65	65	
23 Green Bay & Western		323	323	
24 Hazelhurst & South Eastern		55	55	
25 Iola & Northern		5	5	
26 Glenwood & Northeastern				
27 Kewaunee, Green Bay & W.		5	5	
28 Kickapoo Valley & Northern		38	38	
29 Lake Sup. T. & T. R'y Co.		8	8	
30 Mattoon R'y Co.				
31 Milwaukee & Lake Win'ago		20	20	
32 Milwaukee & Superior		152	152	
33 Marshfield & South Eastern		47	47	
34 Marinette, Tomahawk & W.		58	58	
35 Milwaukee & Wauwatosa				
36 Minnesota & Wisconsin				
37 Minneapolis, St. P. & Ash'l'd				
38 M., St. P. & S. Ste. M.	471	4,600	7,020	2,420
39 Northern Pacific		23,587	23,587	
40 Northwestern Coal R'y Co.		1	1	
41 Oshkosh Transportation Co.				
42 Packwaukee & Montello				
43 Rice Lake, Dallas & Menom.		2	2	
44 St. Cloud, Grantsb. & Ash'l'd				1
45 Washburn, Bayfield & I. R.		320	320	
46 West Range				
47 Winona Bridge R'y Co.				
48 Wisconsin & Michigan		587	587	
49 Whitcomb & Morris		8	8	
50 Wisconsin Central R. R. Co.		1,582	1,582	
51 Wisconsin Central Co.		2,527	6,015	2,488
52 Hawthorn, Nebagm'n & Sup.				
53 St. Paul & Duluth		2,734	2,234	500



*Mileage.*

Mileage, Wisconsin, 1899—Mileage of road operated.

NAME OF COMPANY.	LINE IN USE.		LINE IN USE.			
	Miles of single track.	Miles of second track.	Miles of third track.	Miles of fourth track.	Miles of yard track and sidings.	Total mileage operated (all tracks).
1 Abbotsford & Nor'east'n	15.16				.58	15.74
2 Ahnapee & Western	34				2	
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield Har. & G. W.]						
6 Bayfield Transfer R'y]	3.86				.66	4.52
7 C., M. & St. P.	1,648.81	48.52	1.62	9.78	584.13	2,308.58
8 Chicago & Northwestern	953.85	108.81			*	1,734.04
9 C., St. P., M. & O.	620.07	3.19			182.95	807.80
10 Chicago, Bur. & Nor.	222.42	6.13			33.67	262.90
11 Chicago, Lake Sh. & E.	10.40	5.85				18.96
12 Chicago & L. Superior.	3					
13 Chicago, Madison & N.	91.31				11.05	102.36
14 Chicago, Wis. & Minn.						36
15 Chippewa R. & Menom.	26.5				10	31.72
16 Drummond & S. W.	21.72				13	124.95
17 Duluth, So. Sh. & Atl.	106.53					
18 Duluth Short Line					5.24	11.40
19 Duluth, Superior & W.	.91					
20 Dunbar & Wausaukee					48.73	95.43
21 East'n R'y Co. of Minn.	32.46	8.55				
22 Fairchild & N. E.					20.5	247.7
23 Green Bay & Western	212.5				1	17
24 Hazelhurst & S. E.	13					4.7
25 Iola & Northern	4.7					
26 Glenwood & Northeast'n					7.94	46.39
27 Kewaunee, G. B. & W.	36.7				3.87	55.55
28 Kickapoo Valley & Nor.	51.68				15.7	15.7
29 L. Sup. T. & T. R'y Co.						
30 Mattoon R'y Co.						
31 Milw. & L. Winnebago						25.04
32 Milwaukee & Superior	20.16					
33 Marshfield & S. E.						33.3
34 Marinette, T. & W.	33.3					
35 Milwaukee & Wau'tosa						21
36 Minnesota & Wisconsin	21					
37 M., St. P. & A.						271.42
38 M., St. P. & S. Ste. M.	262.8				29.27	133.37
39 Northern Pacific	87.04	.85			6.15	19.61
40 Northw'n Coal R'y Co.	12.82	.64				
41 Oshkosh Trans. Co.						
42 Packwaukee & Montello						
43 Rice L., Dallas & Men.	6.52				1	7.52
44 St. Cloud, G. & A.						
45 Washb., Bay'd & I. R.						
46 West Range	7					
47 Winona Bridge Ry. Co.	.54					40.12
48 Wisconsin & Michigan	32.82					
49 Whitcomb & Morris	6					
50 Wis. Cen. R. R. Co.	253.26				68.79	671.93
51 Wisconsin Central Co.	172.55				43.14	335.5
52 Hawthorn, Neb. & Sup.	7.35					7.35
53 St. Paul & Duluth						13.75

\*No data.

Mileage.

Mileage, Wisconsin, 1899—Mileage of road operated—Continued.

LINE REPRESENTED BY CAPITAL STOCK.		Line of proprietary companies.	Line operated under lease.	Line operated under contract, etc.	Line operated under trackage rights.	New line constructed during year.	RAILS.		No.
Main line.	Branches and spurs.						Iron	Steel.	
15.16							14.5	.66	1
34								34	2
									3
									4
									5
4.52									6
2,292.86					15.72				7
1,062.16	595.8	16.06		60.02		26.07	22.2	1,711.84	8
806.21					1.59	4.26	5.14	618.12	9
262.22	.15				.53			262.37	10
18.96									11
									12
102.36								102.36	13
									14
26.5	4							36	15
									16
119.53	1.35				4.07	1.35	.08	120.8	17
									18
6.15			5.25				5.24	.91	19
									20
89.74					5.69	23.73		89.74	21
									22
233	14.7						19	228.7	23
14	4							17	24
								4.7	25
									26
44.64	1.75						9.69	36.7	27
55.55								55.55	28
15.7								15.7	29
									30
									31
25.04	4.88							25.04	32
									33
33.3							15.5	17.8	34
									35
									36
									37
262.8	8.62							271.42	38
117.16	15.38			.83			.6	131.94	39
19.61						1.44		19.61	40
									41
							5.52	2	42
									43
									44
									45
									46
					7.3				47
									48
									49
322.05	182.85		8.62	116.44	41.97	13.78	179.6	450.36	50
215.69	45.62			72.87	1.32	9.73	85.99	248.19	51
								7.35	52
	13.75						6.88	6.77	53

*Mileage.*

Mileage, whole line—Mileage of road operated—Continued.

NAME OF COMPANY.	LINE IN USE.		LINE IN USE.			
	Miles of single track.	Miles of second track.	Miles of third track.	Miles of fourth track.	Miles of yard track and sidings.	Total mileage operated (all track.)
1 Abbotsford & Nor' east'n	15.16				.58	15.74
2 Ahnapee & Western ...	34				2	
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield Har. & G. W.						
6 Bayfield Transfer R'y	3.86				.66	4.52
7 Chicago, Mil. & St. P.	6,147.90	255.37	5.02	1.72	1,500.50	8,006.31
8 Chicago & Northwest'n	1,927.39	450.44			1,578.45	7,388.50
9 C., St. P., M. & O. ....	1,422.64	23.79			442.30	1,958.32
10 Chicago, Bur. & North'n	355.76	7.37			68.84	447.87
11 Chicago, L. Shore & E.	10.40	8.56				479.40
12 Chicago & L. Superior..	3					
13 Chicago, Madison & N.	231.30	6.08			50.33	287.71
14 Chicago, Wis. & Minn.						
15 Chippewa R. & Menom.	26.5					36
16 Drummond & S. W. ....	21.72				10	31.72
17 Duluth, So. Sh. & Atl.	517.44	2.44			130.38	711.58
18 Duluth Short Line						
19 Duluth, Superior & W.	.91				5.24	11.40
20 Dunbar & Wausaukee						
21 East'n R'y Co. of Minn.	350.54	8.55			99.67	579.76
22 Fairchild & N. E.						
23 Green Bay & Western	212.50				20.50	247.70
24 Hazelhurst & S. E. ....	13				1	17
25 Iola & Northern	4.70					4.70
26 Glenwood & Northeast'n						
27 Kewaunee, G. B. & W.	36.7				7.94	46.39
28 Kickapoo Valley & Nor.	51.68				13.87	55.55
29 L. Sup. T. & T. R'y Co.					15.70	15.70
30 Mattoon R'y Co.						
31 Milw. & L. Winnebago						
32 Milwaukee & Superior	20.16					25.04
33 Marshfield & S. E. ....						
34 Marinette, T. & W.	33.30					33.30
35 Milwaukee & Wau'tosa						
36 Minnesota & Wisconsin	21					21
37 M., St. P. & A.						
38 M., St. P. & S. Ste. M.	1,039.31				159.62	1,432.19
39 Northern Pacific	2,340.81	40.31			180.60	5,796.03
40 Northw'n Coal Ry. Co.	12.82	64			6.15	19.61
41 Oshkosh Trans. Co.						
42 Packwaukee & Montello						
43 Rice L. Dallas & Menom.	6.52				1	7.52
44 St. Cloud, G. & A.						
45 Washb., Bayf'd & I. R.						
46 West Range	7					
47 Winona Bridge R'y Co.	1.03					1.03
48 Wisconsin & Michigan	57.10					72.07
49 Whitcomb & Morris	6					
50 Wis. Cen. R. R. Co.	253.26				63.79	678.93
51 Wisconsin Central Co.	203.361				58.74	508.83
52 Haw'horn, Neb. & Sup.	7.35					7.35
53 St. Paul & Duluth	146.50	16.50			111.58	399.17

Mileage.

Mileage, whole line—Mileage of road operated—Continued.

LINE REPRESENTED BY CAPITAL STOCK		Line of proprietary companies.	Line operated under lease.	Line operated under contract, etc.	Line operated under trackage rights.	New line constructed during year.	RAILS.		No.
Main line.	Branch's and spurs.						Iron.	Steel.	
15.16							14.50	.66	1
34								34	2
									3
									4
									5
4.52									6
7,910.51					95.80	68.09	1,234.78	6,675.73	7
3,956.28	1,930.96	1,356.90		119.97	24.39	142.78	605.66	6,758.45	8
1,888.73					69.59	11.59	173.32	1,715.01	9
411.97	5.69				30.21			417.66	10
18.96	147.40				313.04	11.79			11
									12
								287.71	13
226.50	4								14
								35	15
630.26	64.70				16.62	2.58	54.24	640.72	16
69.15			5.25				5.24	.91	18
458.76	3.35				117.65	217.88	22	461.89	20
233	14.70						19	228.70	23
14	4							17	24
								4.70	25
44.64	1.75						9.69	36.70	26
55.55								55.55	28
15.70								15.70	29
									30
25.04	4.88							25.04	32
33.30							15.50	17.80	34
									35
									36
									37
1,198.93	213.46				19.80	77.57		1,423.39	38
2,961.72	2,556.31	41.42	203.94		32.67	118.28	333.80	5,429.56	39
19.61						1.44		19.61	40
									41
							5.52	2	42
									43
									44
									45
									46
57.10	6.48				8.52			1.03	47
									48
322.05	182.85		8.62	116.44	41.97	13.78	179.60	450.36	49
262.10	61.55			158.87	26.31	10.36	145.18	337.34	51
								7.35	52
274.58	15.43	19.11	71.35	12.30	6.40	3.78	70.07	322.70	53

*Rails.*

Renewals of rails and ties, Wisconsin.

NAME OF COMPANY.	NEW RAILS LAID DURING YEAR.			Average price per ton at distributing point.
	Iron, tons.	Steel, tons.	Weight.	
1 Abbotsford & Northeastern .....		3,939.64	56	\$17 25
2 Ahnapee & Western .....		104	60	19 58
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ] .....				
6 Bayfield Transfer R'y .... ] .....				
7 Chicago, Mil. & St. Paul .....		7,511	75	17 53
8 Chicago & Northwestern .....		10,446.16%	90, 80, 72	18 10
9 Chicago, St. P., M. & O. ....		3,918	80	19 17
10 Chicago, Burlington & N. ....		123.94	68	22 50
11 Chicago, L. Shore & Eastern .....		39.47	72, 70, 65, 60, 55	
12 Chicago & Lake Superior .....				
12 Chicago, Madison & North'n .....				
14 Chicago, Wisconsin & Minn. ....				
15 Chippewa Riv. & Menomonie .....				
16 Drummond & South Western .....				
17 Duluth, S. Shore & Atlantic .....				
18 Duluth Short Line .....				
19 Duluth, Superior & Western .....				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ....		1,374.43	75	18 20
22 Fairchild & North Eastern .....				
23 Green Bay & Western .....		1,700	70	20 50
24 Hazelhurst & S. E. ....				
25 Iola & Northern .....				
26 Glenwood & Northeastern .....				
27 Kewaunee, Green Bay & W. ....				
28 Kickapoo Valley & Northern .....		14.3	60	
29 Lake Sup. T. & T. R'y Co. ....		1800-2240	60	15 00
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago .....				
32 Milwaukee & Superior .....				
33 Marshfield & South Eastern .....				
34 Marinette, Tomahawk & W. ....				
35 Milwaukee & Wauwatosa .....				
36 Minnesota & Wisconsin .....				
37 Minneapolis, St. P. & Ashl'd .....				
38 M., St. P. & S. Ste. M. ....				
39 Northern Pacific .....		15 240-2240	72	20 30
40 Northwestern Coal R'y Co. ....				
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....				
43 Rice L., Dallas & Menom. ....		94	60	
44 St. Cloud, Grantsb. & Ashl'd .....				
45 Wash'b'n, Bayfield & Iron R. ....				
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. ....				
51 Wisconsin Central Co. ....		4,150 335-2240	80	20 00
52 Hawthorn, Nebag. & Sup. ....	775		55, 60	14 20
53 St. Paul & Duluth .....				

*Rails.*

Renewals of ties, Wisconsin—Continued.

NEW TIES LAID DURING YEAR.			No.
Kind.	Total number.	Average price at distributing point.	
Hemlock, Rock Elm .....	1,683	\$ .085	1
Hemlock and Cedar .....	11,398	.15	2
.....			3
.....			4
.....			5
.....			6
Mixed .....	395,036	.342	7
Mixed .....	426,799	.32	8
Mixed .....	176,499	.33	9
Oak .....	45,574	.425	10
Oak and Hemlock .....	1,150	.28, .49	11
Oak .....	26,440	.34	12
.....			13
.....			14
.....			15
Soft Wood .....	10,000	.10	16
Mixed .....	36,767	.1497	17
.....			18
Pine, Tamarack and Cedar .....	5,069	.47	19
Mixed .....	9,461	.4025	20
.....			21
Hemlock, Tamarack and Oak .....	52,913	.2245	22
.....			23
Hemlock and Tamarack .....	3,133	.1748	24
.....			25
.....			26
Cedar and Hemlock .....	16,828	.1648	27
Oak .....	14,715	.172	28
Pine, Oak and Tamarack .....	2,214	.31	29
.....			30
.....			31
.....			32
.....			33
.....			34
.....			35
Rock Elm and Butternut .....	5,851	.16, .06	36
.....			37
Hard and Soft woods .....	148,235	.228	38
Oak and Tamarack .....	30,075	.266	39
.....			40
.....			41
.....			42
Pine, Oak and Elm .....	2,153	.27 1-3	43
.....			44
.....			45
.....			46
.....			47
.....			48
.....			49
.....			50
Oak, Elm and Hemlock .....	217,875	.26	51
Tamarack and Pine .....	21,120	.105	52
Tamarack and Oak .....	1,530	.25	53

*Fuel.*

Consumption of fuel by locomotives, Wisconsin, 1899.

NAME OF COMPANY.	PASSENGER, TONS.		FREIGHT, TONS.	
	Anthracite.	Bituminous.	Anthracite.	Bituminous.
1 Abbotsford & Northeastern.....				353
2 Ahnapee & Western .....		945		
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ....				
6 Bayfield Transfer R'y .....				265
7 Chicago, Milwaukee & St. P. ....		112,363		230,338
8 Chicago & Northwestern .....		111,174		309,807
9 Chicago, St. P. M. & O. ....		43,562		70,112
10 Chicago, Burlington & N. ....				
11 Chicago, Lake Shore & East. ....				
12 Chicago & Lake Superior .....				
13 Chicago, Madison & North. ....		2,468		4,560
14 Chicago, Wisconsin & Minn. ....				
15 Chippewa R. & Menomonee .....				616
16 Drummond & South Western .....				4,353
17 Duluth, So. Shore & Atlantic .....		2,064		
18 Duluth Short Line .....				
19 Duluth, Superior & Western .....				
20 Dunbar & Wausaukee .....				
21 Eastern Railway Co. of M. ....				
22 Fairchild & Northeastern .....				
23 Green Bay & Western .....		4,811		7,592
24 Hazelhurst & South Eastern .....				1,224
25 Iola & Northern .....			362	
26 Glenwood & Northeastern .....				2,146
27 Kewaunee, Green B. & W. ....				834
28 Kickapoo Val. & Northern .....				
29 Lake Sup. T. & T. R'y Co. ....				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago .....				
32 Milwaukee & Superior .....				
33 Marshfield & South Eastern .....				
34 Marinette, Tomahawk & W. ....				1,140
35 Milwaukee & Wauwatosa .....				711
36 Minnesota & Wisconsin .....				
37 Minneapolis, St. Paul & A. ....				
38 M., St. P. & Sault St. Marie .....		6,573		28,533
39 Northern Pacific .....		1,829		5,977
40 Northwestern Coal R'y Co. ....				1,039
41 Oshkosh Transportation Co. ....				
42 Packwaukee & Montello .....				
43 Rice Lake, Dallas & Menom. ....				160
44 St. Cloud, Grantsburg & A. ....				
45 Washburn, Bayfield & I. R. ....				
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....				
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co. ....				
51 Wisconsin Central Co. ....		71,863		94,336
52 Hawthorn, Nebagamon & S. ....				
53 St. Paul & Duluth .....		152		350

*Fuel.*

Consumption of fuel by locomotives, Wisconsin, 1899 — Continued.

SWITCHING, TONS.		CONSTRUCTION, TONS.		TOTAL.	No.
Anthracite.	Bituminous.	Anthracite.	Bituminous.		
	15			373	1
				945	2
					3
					4
					5
	530			795	6
	54,160		11,224	408,145	7
	55,095		73,025	509,101	8
	18,126		4,875	136,675	9
					10
	3,302			3,303	11
					12
	565		212	7,805	13
					14
					15
				616	16
			266	6,684	17
					18
	1,277			1,277	19
					20
					21
	1,131		524	14,068	22
	420			1,644	23
				362	24
					25
				2,146	26
				834	27
	2,768			2,768	28
					29
					30
					31
					32
	215		125	1,485	33
				711	34
					35
					36
			1,015	36,122	37
	2,417		225	10,448	38
				1,039	39
					40
					41
					42
				160	43
					44
					45
					46
					47
					48
					49
	21,023		8,727	195,945	50
					51
				502	52
					53



*Fuel.*

Consumption of fuel by locomotives, Wisconsin, 1899 — Continued.

NAME OF COMPANY.	Average cost at distributing point.	WOOD.	
		Hard.	Soft.
1 Abbotsford & Northeastern .....	\$3 44		
2 Ahnapee & Western .....	2 60		137
3 Ashland Siskiwi .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....	3 01		6
7 Chicago, Milwaukee & St. Paul .....	1 70		1,561
8 Chicago & Northwestern .....	1 51.3	1,499	3,005
9 Chicago, St. Paul, Minneapolis & Om. ....	2 10		2,151
10 Chicago, Burlington & Northern .....			
11 Chicago, Lake Shore & Eastern .....	2 07		
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....	82	108	
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....		1,761	
16 Drummond & South Western .....	2 85		80
17 Duluth, South Shore & Atlantic .....	2 56		122.88
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....	1 37		5.38
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....			
22 Fairchild & Northeastern .....			
23 Green Bay & Western .....	2 25		708
24 Hazelhurst & South Eastern .....	2 53		
25 Iola & Northern .....	3 00		47
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....	2 25		2,207
28 Kickapoo Valley & Northern .....	3 87		26
29 Lake Superior Terminal & Transfer Co. ....	2 07		28
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....			
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	3 25		300
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	3 14		
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault St. Marie .....	2 10		503
39 Northern Pacific .....	2 07		198
40 Northwestern Coal R'y Co. ....	1 95	22	
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....	3 40		60
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....			
49 Whitcomb & Morris .....			350
50 Wisconsin Central R. R. Co. ....			
51 Wisconsin Central Co. ....	1 64		1,697
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	2 32		26

*Fuel.*

Consumption of fuel by locomotives, Wisconsin, 1899 — Continued.

NAME OF COMPANY.	Total fuel consumed, tons.	Miles run.	Average pounds consumed per mile.
1 Abbotsford & Northeastern .....	373	10,600	70.38
2 Ahnapee & Western .....	1,082	42,568	44
3 Ashland Siskiwit .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western ]			
6 Bayfield Transfer R'y .....	801	12,544	43.29
7 Chicago, Milwaukee & St. Paul ....	408,925	9,565,189	85.50
8 Chicago & Northwestern .....	511,603	11,573,326	88.41
9 Chicago, St. Paul, Minneapolis & O	137,751	3,448,665	79.89
10 Chicago, Burlington & Northern .....			
11 Chicago, Lake Shore & Eastern ....	3,303	126,611	52.17
12 Chicago & Lake Superior .....			
13 Chicago, Madison & Northern .....	7,877	164,589	97.17
14 Chicago, Wisconsin & Minnesota .....			
15 Chippewa River & Menomonie .....	1,174	22,600	103.88
16 Drummond & South Western .....			
17 Duluth, South Shore & Atlantic .....	6,745	202,441	65.64
18 Duluth Short Line .....			
19 Duluth, Superior & Western .....	127,969		
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota			
22 Fairchild & Northeastern .....			
23 Green Bay & Western .....	14,412	477,482	60.37
24 Hazelhurst & South Eastern .....	1,644	39,936	82.36
25 Iola & Northern .....	385	8,826	87.36
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Bay & Western .....		47,692	92.65
28 Kickapoo Valley & Northern .....	848	30,172	56
29 Lake Sup. Ter. & Trans. R'y Co. ....	2,782	118,580	46.92
30 Mattoon R'y Co. ....			
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....			
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	1,635	51,192	63.90
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....	711	24,000	59.00
37 Minneapolis, St. Paul & Ashland .....			
38 Minn., St. P. & Sault St. Marie .....	36,374	1,130,447	64.35
39 Northern Pacific .....	10,562	294,955	71.62
40 Northwestern Coal R'y Co. ....	1,039		
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....			
44 St. Cloud, Grantsburg & Ashland .....			
45 Washburn, Bayfield & Iron River .....			
46 West Range .....			
47 Winona Bridge R'y Co. ....			
48 Wisconsin & Michigan .....			
49 Whitcomb & Morris .....			
50 Wisconsin Central P. R. Co. ....			
51 Wisconsin Central Co. ....	196,797.50	4,003,396	101.00
52 Hawthorn, Nebagamou & Superior .....			
53 St. Paul & Duluth .....	515	16,152	63.79



*Accidents.*

Accidents to persons, Wisconsin, 1899—Trainmen—Continued.

NAME OF COMPANY.	OTHER TRAIN ACCIDENTS.		AT HIGHWAY CROSSINGS.		AT STATIONS.		OTHER CAUSES.		TOTAL.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Abbotsford & N. E.										
2 Ahnapee & Western.										
3 Ashland Siskiwt										
4 Big Falls R'y Co.										
5 Bay'fld H. & G. W.										
6 Bayfield Trans. R'y										
7 Chicago, M. & St. P.					1	1			6	16
8 Chicago & N. W.		1					2	4	3	24
9 C., St. P., M. & O.							1	7	2	14
10 Chicago, Bur. & Nor.						4				13
11 Chicago, L. S. & E.										
12 Chicago & L. Sup.										
13 Chicago, Mad. & Nor.										
14 Chi., Wis. & Minn.										
15 Chippewa R. & Men.										
16 Drummond & S. W.										
17 Duluth, S. S. & Atl.								1		1
18 Duluth Short Line										
19 Duluth, Sup. & W.							1	1	1	1
20 Dunbar & Waus'kee										
21 E. R'y Co. of Minn.									2	2
22 Fairchild & N. E.										
23 Green Bay & W.								1		8
24 Hazelhurst & S. E.										
25 Iola & Northern										
26 Glenwood & N. E.										
27 Kew'nee, G. B. & W.										
28 Kickapoo Valley & N.										
29 L. S. T. & T. R'y Co.										1
30 Mattoon R'y Co.										
31 Milwaukee & L. Win.										
32 Milwaukee & Sup.										
33 Marshfield & S. E.										
34 Marinette, T. & W.										
35 Milwaukee & W'tosa										
36 Minn. & Wis.										
37 M., St. P. & A.										
38 M., St. P. & S. S. M.								24		36
39 Northern Pacific										4
40 N. W. Coal R'y Co.										
41 Oshkosh Trans. Co.										
42 Packwaukee & Mon.										
43 Rice L., Dallas & M.										
44 St. Cloud, G. & Ash.										
45 Wash'b'n, B. & I. R.										
46 West Range										
47 Winona B. R'y Co.										
48 Wisconsin & Mich.										
49 Whiteomb & Morris.										
50 Wis. Cen. R. R. Co.										
51 Wisconsin Cen. Co.								3	6	14
52 Hawthorn, N. & S.										
53 St. Paul & Duluth										1











## Accidents.

Accidents to persons. Wisconsin, 1899 — Passengers.

NAME OF COMPANY.	COLLISIONS.		DERAILMENTS.		OTHER TRAIN ACCIDENTS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Abbotsford & Northeast						
2 Ahnapee & Western						
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield H. & G. W.]						
6 Bayfield Transfer R'y.]						
7 Chicago, Mil. & St. P.						
8 Chicago & Northwest'n.		3				
9 C. St. P. M. & O.						
10 Chicago, Bur. & North.						
11 Chicago, L. S. & E.						
12 Chicago & Lake Sup.					1	
13 Chicago, Madison & N.						
14 Chicago, Wis. & Minn.						
15 Chippewa Riv. & Men.						
16 Drummond & S. W.						
17 Duluth So. Shore & A.						
18 Duluth Short Line						
19 Duluth, Sup. & Western						
20 Dunbar & Wausaukee						
21 Eastern R'y Co. of M.						
22 Fairchild & North E.						
23 Green Bay & Western						
24 Hazelhurst & So. East.						
25 Iola & Northern						
26 Glenwood & Northeast.						
27 Kewaunee, G. B. & W.						
28 Kickapoo Val. & North.						
29 L. S. T. & T. R'y Co.						
30 Mattoon R'y Co.						
31 Milwaukee, & Lake W.						
32 Milwaukee & Superior.						
33 Marshfield & So. East.						
34 Marinette, Tom. & W.						
35 Mil. & Wauwatosa						
36 Minnesota & Wisconsin						
37 Minn., St. P. & A.						
38 M., St. P. & S. S. M.						
39 Northern Pacific						
40 Northwest. Coal R'y Co.						
41 Oshkosh Transport. Co.						
42 Packwaukee & Montello						
43 Rice Lake, Dallas & M.						
44 St. Cloud, G. & A.						
45 Washburn, B. & I. R.						
46 West Range						
47 Winona B. R'y Co.						
48 Wisconsin & Michigan						
49 Whitecomb & Morris						
50 Wis. Cen. R. R. Co.						
51 Wisconsin Central Co.		1				
52 Haw. Nebagamon & S.						
53 St. Paul & Duluth						



### Accidents.

Accidents to persons, Wisconsin, 1899 — Trespassers.

NAME OF COMPANY.	COLLISIONS.		DERAILMENTS.		OTHER TRAIN ACCIDENTS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Abbotsford & Northern .....						
2 Ahnapee & Western .....						
3 Ashland Siskiwit .....						
4 Big Falls R'y Co. ....						
5 Bayfield H. & G. W. ]						
6 Bayfield Transfer R'y ]						
7 Chicago, Mil. & St. Paul						
8 Chicago & N. W. ....	1			1		
9 C., St. P., M. & O. ....						
10 Chicago, Bur. & Nor. ....						
11 Chicago, L. Shore & E. ....						
12 Chicago & L. Superior ..						
13 Chicago, Madison & N. ....						
14 Chicago, Wis. & Minn. ....						
15 Chippewa R. & Menom. ....						
16 Drummond & S. W. ....						
17 Duluth, S. Shore & Atl. ....						
18 Duluth Short Line .....						
19 Duluth, Superior & W. ....						
20 Dunbar & Wausaukee ..						
21 Eastern R'y of Minn. ....						
22 Fairchild & N. E. ....						
23 Green Bay & Western ..						
24 Hazelhurst & S. E. ....						
25 Iola & Northern .....						
26 Glenwood & Northeast'n						
27 Kewaunee, G. B. & W. ....						
28 Kickapoo Valley & N. ....						
29 L. Sup. T. & T. R'y Co. ....						
30 Mattoon R'y Co. ....						
31 Mil. & Lake Winnebago						
32 Milwaukee & Superior ..						
33 Marshfield & S. E. ....						
34 Marinette, Tom. & W. ....						
35 Milwaukee & Wautosa						
36 Minnesota & Wisconsin						
37 Minneapolis, St. P. & A. ....						
38 M., St. P. & S. Ste. M. ....						
39 Northern Pacific .....						
40 Northwest Coal R'y Co. ....						
41 Oshkosh Transp. Co. ....						
42 Packwaukee & Montello						
44 St. Cloud, Grantsb. & A. ....						
43 Rice L., Dallas & Men. ....						
45 Wash'n. Bayf'd & I. R. ....						
46 West Range .....						
47 Winona Bridge R'y Co. ....						
48 Wisconsin & Michigan ..						
49 Whitcomb & Morris .....						
50 Wis. Cen. E. R. Co. ....						
51 Wisconsin Central Co. ....	1	1				
52 Hawth'n, Nebag. & Sup. ....						
53 St. Paul & Duluth .....						



## Accidents.

Accidents to persons, Wisconsin, 1899—Not trespassing.

NAME OF COMPANY.	COLLISIONS.		DERAILMENTS.		OTHER TRAIN ACCIDENTS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Abbotsford & Northeast						
2 Ahnapee & Western						
3 Ashland Siskiwi						
4 Big Falls R'y Co.						
5 Bayfield Har. & G. W.						
6 Bayfield Transfer R'y						
7 Chicago, Mil. & St. Paul						
8 Chicago & N. W.						
9 C., St. P., M. & O.						
10 Chicago, Bur. & Nor.						
11 Chicago, L. Shore & E.						
12 Chicago & L. Superior						
13 Chicago, Madison & N.						
14 Chicago, Wis. & Minn.						
15 Chippewa R. & Menom.						
16 Drummond & S. W.						
17 Duluth, S. Shore & Atl.						
18 Duluth Short Lne						
19 Duluth, Superior & W.						
20 Dunbar & Wausaukee						
21 Eastern R'y of Minn.						
22 Fairchild & N. E.						
23 Green Bay & Western						
24 Hazelhurst & S. E.						
25 Iola & Northern						
26 Glenwood & Northeast'n						
27 Kewaunee, G. B. & W.						
28 Kickapoo Valley & N.						
29 L. Sup. T. & T. R'y Co.						1
30 Mattoon R'y Co.						
31 Mil. & Lake Winnebago						
32 Milwaukee & Superior						
33 Marshfield & S. E.						
34 Marinette, Tom. & W.						
35 Milwaukee & Wau'tosa						
36 Minnesota & Wisconsin						
37 Minneapolis, St. P. & A.						
38 M., St. P. & S. Ste. M.						
39 Northern Pacific						
40 Northwest, Coal R'y Co.						
41 Oshkosh Transp. Co.						
42 Packwaukee & Montello						
43 Rice L., Dallas & Men.						
44 St. Cloud, Grantsb. & A.						
45 Wash'b'n, Bay'd & I. R.						
46 West Range						
47 Winona Bridge R'y Co.						
48 Wisconsin & Michigan						
49 Whitcomb & Morris						
50 Wis. Cen. R. R. Co.						
51 Wisconsin Central Co.						
52 Hawth'n, Nebag. & Sup.						
53 St. Paul & Duluth						



### Characteristics of Road.

Characteristics of road, Wisconsin, 1899.

NAME OF COMPANY.	MILES.	ALIGNMENT.		
		Number of curves.	Aggregate length of curved line, miles.	Length of straight line, miles.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....	34	35	8.7	25.3
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ] .....				
6 Bayfield Transfer R'y .... ] .....	3.86	23	1.78	2.8
7 Chicago, Mil. & St. Paul .....				
8 Chicago & Northwestern ...	1,625.73	1,860	352.59	1,273.14
9 C. St. P., M. & O. ....	620.7	670	119.13	500.94
10 Chicago, Burlington & Nor.				
11 Chicago, Lake Shore & E'n				
12 Chicago & Lake Superior ..	3			
13 Chicago, Madison & North'n	91.31	132	28.94	62.37
14 Chicago, Wisconsin & Minn.	65.95	55	10.51	55.44
15 Chippewa River & Menom..	30.50	43	10	20.50
16 Drummond & South Western	21.72	98	9.14	12.58
17 Duluth, South Shore & Atl.	106.53	128	22.53	84
18 Duluth Short Line .....	1.75			1.75
19 Duluth, Superior & Western				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn....				
22 Fairchild & North Eastern ..				
23 Green Bay & Western .....	225	132	31.22	193.78
24 Hazelhurst & So. Eastern	17	66	9.16	7.84
25 Iola & Northern .....	4.70	3	.70	4
26 Glenwood & Northeastern ..				
27 Kewaunee, Green Bay & W.	36.70	39	10.39	26.31
28 Kickapoo Valley & Northern				
29 L. Superior T. & T. R'y Co.				
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago	91.20	58	16.35	74.85
32 Milwaukee & Superior .....	20.16	31	4.51	15.65
33 Marshfield & South Eastern ..				
34 Marinette, Tomahawk & W.	33.30	47	5.93	27.35
35 Milwaukee & Wauwatosa ...				
36 Minnesota & Wisconsin .....				
37 Minneapolis, St. P. & Ashl'd				
38 M., St. P. & S. Ste. M. ....	271.42	312	59.31	212.11
39 *Northern Pacific .....				
40 Northwestern Coal R'y Co. ...	12.82	13	282	9.99
41 Oshkosh Transportation Co.				
42 Packwaukee & Montello .....	7.68			
43 Rice L., Dallas & Menomonie				
44 St. Cloud, Grantsburg & A.	12	18	3.30	8.70
45 Washburn, Bayfield & I. R.				
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....	32.82	24	5.30	27.52
49 Whiteomb & Morris .....	6	9		
50 Wisconsin Central R. R. Co.	352.14	304	64.70	287.44
51 Wisconsin Central Co. ....	172.55	217	46.23	126.32
52 Hawthorn, Nebag. & Stp. ....	7.35			
53 St. Paul & Duluth .....	13.75	18	3.30	10.45





### Characteristics of Road.

Characteristics of road, Wisconsin -- Continued.

NAME OF COMPANY.	BRIDGES.				
	Stone.	Iron.	Wooden.	Combina- tion.	Total
1 Abbotsford & Northeast.			8		8
2 Ahnapee & Western			12		12
3 Ashland Siskiwit					
4 Big Falls R'y Co.					
5 Bayfield Har. & G. W.]					
6 Bayfield Transfer R'y]					
7 Chicago, Mtl. & St. P.		118	81	2	201
8 Chicago & Northwester	120	360	70	11	561
9 Chicago, St. P., M. & O.	15	79	11	1	106
10 Chicago, Bur. & North'n		11½	357	1	369½
11 Chicago, L. S. & E.					
12 Chicago & L. Superior					
13 Chicago, Madison & N.		13	9		22
14 Chicago, Wiscon. & M.		5			5
15 Chippewa Riv. & Men.					
16 Drummond & So. West'n			3		3
17 Duluth, S. S. & Atlantic		4	9		13
18 Duluth Short Line		1			1
19 Duluth, Sup. & West'n.					
20 Dunbar & Wausaukee					
21 Eastern R'y Co. of M.		8			8
22 Fairchild & North East.					
23 Green Bay & Western.		5	125		130
24 Hazelhurst & So. East.			1		
25 Iola & Northern			5		5
26 Glenwood & Northeast'n					
27 Kewaunee, G. B. & W.			14	1	15
28 Kickapoo Val. & North'n			30	15	45
29 Lake S. T. & T. R'y Co.					
30 Mattoon R'y Co.					
31 Mtl. & L. Winnebago.		9			9
32 Milwaukee & Superior.					
33 Marshfield & So. Eastern			6		6
34 Marinette, Tom. & W.					
35 Mil. & Wauwantosa					
36 Minnesota & Wisconsin					
37 Minneapolis, St. P. & A.					
38 M., St. P. & S. S. Marie.			126	½	126½
39 Northern Pacific		2	2	5	9
40 Northwest Coal R'y Co.		1	1	1	3
41 Oshkosh Transport. Co.					
42 Packwaukee & Montello					
43 Rice Lake, Dallas & M.					
44 St. Cloud, G'tsb'g & A.				1	1
45 Washburn, B. & I. R.			5		5
46 West Range					
47 Wnona Bridge R'y Co.					
48 Wisconsin & Michigan		1	1		2
49 Whitcomb & Morris			4		4
50 Wis. Cent. R. R. Co.		19	4		23
51 Wisconsin Central Co.		10	6		16
52 Hawthorn, Neb. & Sup.					
53 St. Paul & Duluth		1			1

*Characteristics of Road.*

## Characteristics of road, Wisconsin — Continued.

NAME OF COMPANY.	BRIDGES.		
	Aggregate length.	Minimum length.	Maximum length.
1 Abbotsford & Northeastern .....	848	64	400
2 Ahnapee & Western .....	3,180	48	1,296
3 Ashland Siskiwiw .....			
4 Big Falls R'y Co. ....			
5 Bayfield Harbor & Great Western .....			
6 Bayfield Transfer R'y .....			
7 Chicago, Milwaukee & St. Paul .....	26,359	8	310
8 Chicago & Northwestern .....	35,396	4	235
9 Chicago, St. Paul, Minneapolis & Omaha .....	12,792	3	1,317
10 Chicago, Burlington & Northern .....	34,676.9	6	1,812
11 Chicago, Lake Shore & Eastern .....			
12 Chicago & Lake Superior .....			
13 Chicago Madison & Northern .....	2,278	24	100
14 Chicago, Wisconsin & Minnesota .....	687.2	60	200.5
15 Chippewa River & Menomonie .....			
16 Drummond & Southwestern .....	59		
17 Duluth, South Shore & Atlantic .....	851.9	25.9	175
18 Duluth Short Line .....	2,193		
19 Duluth, Superior & Western .....			
20 Dunbar & Wausaukee .....			
21 Eastern Railway Co. of Minnesota .....	2,083	21	1,378
22 Fairchild & Northeastern .....			
23 Green Bay & Western .....	10,438	30	624
24 Hazelhurst & South Eastern .....	277		
25 Iola & Northern .....	791	74	247
26 Glenwood & Northeastern .....			
27 Kewaunee, Green Ba & Western .....	5,704	16	1,700
28 Kickapoo Valley & Northern .....	4,607.7	14.4	362.6
29 Lake Superior Terminal & Trans. R'y Co. ....			
30 Mattoon R'y Co. ....	1,200.7	51	180.3
31 Milwaukee & Lake Winnebago .....			
32 Milwaukee & Superior .....			
33 Marshfield & South Eastern .....			
34 Marinette, Tomahawk & Western .....	3,060	600	2,200
35 Milwaukee & Wauwatosa .....			
36 Minnesota & Wisconsin .....			
37 Minneapolis, St. Paul & Ashland .....			
38 Minneapolis, St. Paul & Sault Ste. Marie .....	24,788	15	1,573
39 Northern Pacific .....	1,049	44	303
40 Northwestern Coal R'y Co. ....	548.10	128.10	270
41 Oshkosh Transportation Co. ....			
42 Packwaukee & Montello .....			
43 Rice Lake, Dallas & Menomonie .....			
44 St. Cloud, Grantsburg & Ashland .....	444		
45 Washburn, Bayfield & Iron River .....	869	50	300
46 West Range .....			
47 Winona Bridge R'y Co. ....	2,706.8		
48 Wisconsin & Michigan .....	2,963		
49 Whitcomb & Morris .....	723		
50 Wisconsin Central R. R. Co. ....	4,278.11	40	1,497
51 Wisconsin Central Co. ....	5,682.6	394	2,339
52 Hawthorn, Nebagamon & Superior .....			
53 St. Paul & Duluth .....	2,193		

### Characteristics of Road.

Characteristics of road, Wisconsin—Continued.

NAME OF COMPANY.	TRETTLES.			
	Number.	Aggregate length.	Minimum length.	Maximum length.
1 Abbotsford & Northeastern .....				
2 Ahnapeec & Western .....				
3 Ashland Siskiwit .....				
4 Big Falls R'y Co. ....				
5 Bayfield Harbor & G. W. ....				
6 Bayfield Transfer R'y ....	1	625	625	625
7 Chicago, Mil. & St. Paul ..	1,521	110,981	7	1,666
8 Chicago & Northwestern ..	1,710	124,125		
9 C., St. P., M. & O. ....	632	44,787		
10 Chicago, Burlington & Nor.				
11 Chicago, Lake Shore & E. ..				
12 Chicago & Lake Superior ..				
13 Chicago, Madison & North'n	171	15,291	4	616
14 Chicago, Wisconsin & Minn.	66	3,440.3	10.6	343.8
15 Chippewa River & Menom.	34	6,805	100	1,500
16 Drummond & South Western	1	210		
17 Duluth, South Shore & Atl.	49	12,855	16	2,261
18 Duluth Short Line .....				
19 Duluth, Superior & Western				
20 Dunbar & Wausaukee .....				
21 Eastern R'y Co. of Minn. ...	8	2,967	20	1,482
22 Fairchild & North Eastern ..				
23 Green Bay & Western .....				
24 Hazelhurst & South Eastern				
25 Iola & Northern .....				
26 Glenwood & Northeastern ..				
27 Kewaunee, Green Bay & W.	2		91	1,141
28 Kickapoo Valley & Northern	16	1,614	34.6	466.6
29 L. Superior T. & T. R'y Co.	9	4,402.6	49	2,184
30 Mattoon R'y Co. ....				
31 Milwaukee & L. Winnebago	78	5,546.3	113	723.6
32 Milwaukee & Superior .....	12	858	9	200
33 Marshfield & South Eastern				
34 Marinette, Tomahawk & W.				
35 Milwaukee & Wauwatosa ..				
36 Minnesota & Wisconsin ..				
37 Minneapolis, St. P. & Ashl'd				
38 M., St. P. & S. Ste. M. ....				
39 Northern Pacific .....	49	7,075	12	2,280
40 Northwestern Coal R'y Co. ..	13	7,370	128	1,327
41 Oshkosh Transportation Co. ..				
42 Packwaukee & Montello .....	5	257.5	30.3	62
43 Rice Lake, Dallas & Menom.				
44 St. Cloud, Grantsb. & Ashl'd	4	793	20	569
45 Washburn, Bayfield & L. R.				
46 West Range .....				
47 Winona Bridge R'y Co. ....				
48 Wisconsin & Michigan .....	2	134.1	44.1	90
49 Whitcomb & Morris .....				
50 Wisconsin Central R. R. Co.	255	26,501.6	10	1,139
51 Wisconsin Central Co. ....	140	11,679.5	10	569.7
52 Hawthorn, Nebag. & Sup. ....				
53 St. Paul & Duluth .....	4	793	20	569

Characteristics of Road.

Characteristics of road, Wisconsin—Continued.

NAME OF COMPANY.	TUNNELS.				Gauge.	Miles.
	Number	Aggregate length.	Minimum length.	Maximum length.		
1 Abbotsford & Northeast					4 8½	15.16
2 Ahnapee & Western					4 8½	34
3 Ashland Siskiwit						
4 Big Falls R'y Co.						
5 Bayfield Har. & G. W.						
6 Bayfield Transfer Co.						
7 Chicago, Mil. & St. Paul	1	1,330	1,330	1,330	4 8½	3.86
8 Chicago & N. W.	4	7,446	354	3,822	4 8½	1,650.46
9 C., St. P., M. & O.	1	872			4 8½	1,609.73
10 Chicago, Bur. & Nor.					4 8½	620.7
11 Chicago, L. S. & E.					4 8½	223.1
12 Chicago & L. Superior						3
13 Chicago, Madison & N.	1	1,214			4 8½	91.31
14 Chicago, Wis. & Minn.					4 8½	72.87
15 Chippewa R. & Menom.					4 8½	30.5
16 Drummond & S. W.					4 8½	21.72
17 Duluth, S. S. & Atlantic					4 8½	167.88
18 Duluth Short Line					4 8½	1.75
19 Duluth, Superior & W.						
20 Dunbar & Wausaukee					*	
21 East'n R'y Co. of Minn.					4 8½	32.46
22 Fairchild & N. E.						
23 Green Bay & Western					4 8½	225
24 Hazelhurst & S. E.					4 8½	17
25 Iola & Northern					4 8½	4.7
26 Glenwood & N. E.						
27 Kewaunee, G. B. & W.					4 8½	36.7
28 Kickapoo Valley & Nor.	1	404			4 8½	51.68
29 L. Sup. T. & T. R'y Co.					4 8½	15.71
30 Mattoon R'y Co.						
31 Mil. & Lake Winnebago					4 8½	95.76
32 Milwaukee & Superior					4 8½	25.4
33 Marshfield & S. E.					4 8½	33
34 Marinette, Tom. & W.					4 8½	33.3
35 Milwaukee & Wau'tosa						
36 Minnesota & Wisconsin						21
37 M., St. P. & A.						3
38 M., St. P. & S. Ste. M.					4 8½	271.42
39 Northern Pacific					4 8½	101.91
40 Northwestern C. R'y Co.					4 8½	12.82
41 Oshkosh Trans. Co.					4 8½	4.28
42 Packwaukee & Mon.					4 8½	7.96
43 Rice L., Dallas & Men.						
44 St. Cloud, G. & Ashland					4 8½	12
45 Washburn, B. & I. R.					4 8½	34
46 West Range						
47 Winona Bridge R'y Co.					4 8½	1.03
48 Wisconsin & Michigan					4 8½	63.55
49 Whitcomb & Morris					4 8½	6
50 Wis. Cen. R. R. Co.					4 8½	336.11
51 Wisconsin Central Co.					4 8½	218.17
52 Hawthorn, Neb. & Sup.						
53 St. Paul & Duluth					4 8½	13.75

\*Narrow.

*Characteristics of Road.*

Characteristics of road, Wisconsin—Bridges, trestles, tunnels conduits, etc.

NAME OF COMPANY.	OVERHEAD HIGHWAY.				
	Crossings.	Bridges.	Conduits.	Trestles.	Total.
1 Abbotsford & N. E. ....					
2 Ahnapee & Western ....					
3 Ashland Siskiwit ....					
4 Big Falls R'y Co. ....					
5 Bayfield Har. & G. W. )					
6 Bayfield Transfer R'y )					
7 Chicago, Mil. & St. P. )		5		26	31
8 Chicago & Northwestern )		20		26	46
9 Chicago, St. P., M. & O. )		10			10
10 Chicago, Bur. & Nor. ....					
11 Chicago, L. S. & E. ....					
12 Chicago & Lake Superior ....					
13 Chicago, Madison & N. ....				6	6
14 Chicago, Wis. & Minn. ....					
15 Chippewa R. & Menom. ....					
16 Drummond & S. W. ....					
17 Duluth, So. Sh. & Atl. ....					
18 Duluth Short Line ....					
19 Duluth, Superior & W. ....					
20 Dunbar & Wausaukee ....					
21 Eastern R'y Co. of Minn. ....				1	1
22 Fairchild & N. E. ....					
23 Green Bay & Western ....					
24 Hazelhurst & S. E. ....					
25 Iola & Northern ....					
26 Glenwood & N. E. ....					
27 Kewaunee, G. B. & W. ....				1	
28 Kickapoo Valley & Nor. ....					
29 L. Sup. T. & T. R'y Co. ....					
30 Mattoon R'y Co. ....					
31 Mil. & L. Winnebago ....				3	3
32 Milwaukee & Superior ..					
33 Marshfield & S. E. ....					
34 Marinette, Tom. & W. ....					
35 Milwaukee & Wau'tosa ....					
36 Minnesota & Wisconsin ..					
37 Minneapolis, St. P. & A. ....					
38 M., St. P. & S. Ste. M. ....					
39 Northern Pacific ....				1	1
40 Northw. Coal R'y Co. ....					
41 Oshkosh Trans. Co. ....					
42 Packwaukee & Montello ....					
43 Rice L., Dallas & Men. ....					
44 St. Cloud, G. & A. ....					
45 Washburn, B. & I. R. ....					
46 West Range ....					
47 Winona Bridge R'y Co. ....					
48 Wisconsin & Michigan ....					
49 Whitcomb & Morris ....					
50 Wis. Cen. R. R. Co. ....				1	1
51 Wisconsin Cen. Co. ....				1	1
52 Hawthorn, N. & Sup. ....					
53 St. Paul & Duluth ....					

*Characteristics of Road.*

Characteristics of road, Wisconsin—Bridges, trestles, tunnels, conduits, etc.—Continued.

OVERHEAD RAILWAY CROSSINGS.						No.
Bridges.	Conduits.	Trestles.	Total.	Height of lowest above surface of rail.	Tunnels.	
						1
						2
						3
						4
						5
						6
.6		3	9	17	4	7
6		4	10	19		8
2			2	176		9
						10
						11
						12
1		1	1	18		13
			1	20		14
						15
2			2	22		16
						17
						18
						19
						20
						21
						22
						23
						24
						25
						26
						27
				22		28
						29
1			1	17	1	30
		1	1	23	-	31
						32
						33
						34
						35
						36
						37
						38
						39
						40
						41
						42
						43
						44
						45
						46
						47
						48
		2	2	17	9	49
				17	6	50
						51
						52
						53

## Telegraph.

Telegraph—A. Owned by company making report—Wisconsin, 1899.

NAME OF COMPANY.	Miles of line.	Miles of wire.	OPERATED BY THIS COMPANY.	
			Miles of line.	Miles of wire.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western.....				
3 Ashland Siskiwit.....				
4 Big Falls R'y Co.....				
5 Bayfield Harbor & G. W.....				
6 Bayfield Transfer R'y.....				
7 Chicago, Mil. & St. Paul.....	1,619.30	6,319.10		
8 Chicago & Northwestern.....		403.60		403.60
9 Chicago, St. P. M. & O.....				
10 Chicago, Burlington & N.....	226.17	2,377.5	222.42	574.36
11 Chicago, Lake Shore & Eastern.....	11.75	23.	11.75	23.
12 Chicago & Lake Superior.....				
13 Chicago, Madison & Northern.....				
14 Chicago, Wisconsin & Minn.....	65.95	267.62		
15 Chippewa River & Menomonie.....	24.50	24.50	24.50	24.50
16 Drummond & South Western.....				
17 Duluth, So. Shore & Atlantic.....	109.03	123.06		
18 Duluth Short Line.....	1.75	3.50		
19 Duluth, Superior & Western.....				
20 Dunbar & Wausaukee.....				
21 Eastern Railway Co. of Minn.....	37.90	90.69	37.90	47.70
22 Fairchild, & North Eastern.....				
23 Green Bay & Western.....	260.	260.		
24 Hazelhurst & South Eastern.....				
25 Iola & Northern.....				
26 Glenwood & Northeastern.....				
27 Kewaunee, Green Bay & W.....	32.91	32.91		
28 Kickapoo Valley & Northern.....				
29 Lake Sup. T. & T. R'y Co.....				
30 Matton R'y Co.....				
31 Milwaukee & Lake Winnebago.....	91.20	235.15		
32 Milwaukee & Superior.....				
33 Marshfield & South Eastern.....				
34 Marinette, Tomahawk & W.....				
35 Milwaukee & Wauwatosa.....				
36 Minnesota & Wisconsin.....				
37 Minneapolis, St. P. & Ashland.....				
38 Minn., St. P. & Sault Ste. Marie.....	266.1	79.42	26.61	794.2
39 Northern Pacific.....	85.07			118.56
40 Northwestern Coal R'y Co.....				
41 Oshkosh Transportation Co.....				
42 Pacwaukee & Montello.....	7.68	7.68		
43 Rice Lake, Dallas & Monom.....				
44 St. Cloud, Grantsburg & Ash.....	12.	12.		
45 Washburn, Bayfield & Iron R.....				
46 West Range.....				
47 Winona Bridge R'y Co.....	2.28	2.28	2.28	2.28
48 Wisconsin & Michigan.....				
49 Whitcomb & Morris.....				
50 Wisconsin, Central R. R. Co.....	320.07	812.25	320.07	812.25
51 Wisconsin Central Co.....	171.32	434.05	171.32	434.05
52 Hawthorn Neb. & Superior Ry.....				
53 St. Paul & Duluth R'y.....	13.75	15.50		

Telegraph.

Telegraph—A. Owned by company making report—Wisconsin, 1899.

OPERATED BY ANOTHER COMPANY.

Miles of line.	Miles of wire.	Name of operating company.	No.
.....	.....	.....	1
.....	.....	.....	2
.....	.....	.....	3
.....	.....	.....	4
.....	.....	.....	5
.....	.....	.....	6
1,619.30	6,319.10	Western Union Tel. Co. This line is operated jointly by the Western Union Tel. Co. and C. & N. W. R'y.....	7
.....	.....	.....	8
3.75	1,813.29	North American Tel. Co.....	9
.....	.....	.....	10
.....	.....	.....	11
.....	.....	.....	12
65.95	267.62	Owned jointly by Western Union Tel. Co. and Wiscon- sin Central R. R. Co.....	13
.....	.....	.....	14
.....	.....	.....	15
.....	.....	.....	16
.....	.....	.....	17
1.75	3.50	Operated jointly by D. S. S. & A. R'y and Western Union Tel. Co.....	18
.....	.....	.....	19
.....	.....	.....	20
.....	47.70	Operated jointly by St. Paul & D. and Western Union Tel. Co.....	21
.....	.....	.....	22
.....	.....	.....	23
.....	.....	.....	24
.....	.....	.....	25
.....	.....	.....	26
.....	.....	.....	27
.....	.....	.....	28
.....	.....	.....	29
.....	.....	.....	30
91.20	285.15	Owned and operated jointly with Western Union Tel. Co.....	31
.....	.....	.....	32
.....	.....	.....	33
.....	.....	.....	34
.....	.....	.....	35
.....	.....	.....	36
.....	.....	.....	37
.....	.....	.....	38
.....	16.12	Owned and operated jointly with Western Union Tel. Co.....	39
.....	.....	.....	40
7.68	7.68	Owned and operated jointly with Western Union Tel. Co.....	41
.....	.....	.....	42
12.	12.	Owned jointly with Western Union Tel. Co.....	43
.....	.....	.....	44
.....	.....	.....	45
.....	.....	.....	46
.....	.....	.....	47
.....	.....	.....	48
.....	.....	.....	49
.....	.....	.....	50
.....	.....	.....	51
.....	.....	.....	52
13.75	15.50	Owned jointly by St. P. & D. and Western Union Tel. Co.....	53
.....	.....	.....	54
.....	.....	.....	55



## Telegraph.

Telegraph.— B. Owned by another company, but located on property of road making this report.

Name of Company.	Miles of line.	Miles of wire.
1 Abbotsford and Northeastern.....		34.
2 Ahnapee & Western.....	34.	34.
3 Ashland Siskiwit.....		
4 Big Falls R'y Co.....		
5 Bayfield Harbor & Great Western.....		
6 Bayfield Transfer R'y.....		
7 Chicago, Milwaukee & St. Paul.....	1,619.39	6,319.10
8 Chicago & North western.....	1,711.60	7,617.82
9 Chicago, St. Paul, Minneapolis & Omaha.....	609.60	4,317.40
10 Chicago, Burlington & Northern.....	3.75	1,813.29
11 Chicago, Lake Shore & Eastern.....		1.25
12 Chicago & Lake Superior.....	94.00	95.
13 Chicago, Madison and Northern.....		172.82
14 Chicago, Wisconsin & Minnesota.....		
15 Chippewa River & Menomonie.....		
16 Drummond & South Western.....		
17 Duluth, South Shore & Atlantic.....		
18 Duluth Short Line.....		1.75
19 Duluth, Superior & Western.....		
20 Dunbar & Wausaukee.....		
21 Eastern Railway Co. of Minnesota.....		
22 Fairchild & North Eastern.....		
23 Green Bay & Western.....		
24 Hazelhurst & South Eastern.....		
25 Iola & Northern.....		
26 Glenwood & Northeastern.....		
27 Kewaunee, Green Bay and Western.....		
28 Kickapoo Valley & Northern.....		
29 Lake Superior Terminal & Transfer R'y Co.....		
30 Mattoon R'y Co.....		188.50
31 Milwaukee & Lake Winnebago.....	20.16	20.16
32 Milwaukee & Superior.....		
33 Marshfield & South Eastern.....		
34 Marinette, Tomahawk & Western.....		
35 Milwaukee & Wauwautosa.....		
36 Minnesota & Wisconsin.....		
37 Minneapolis, St. Paul & Ashland.....		
38 Minneapolis, St. Paul & Sault Ste. Marie.....		79.44
39 Northern Pacific.....	11.12	
40 Northwestern Coal R'y Co.....		
41 Oshkosh Transportation Co.....		7.68
42 Packwaukee & Montello.....		
43 Rice Lake, Dallas & Menomonie.....		
44 St. Cloud, Grantsburg & Ashland.....		
45 Washburn, Bayfield & Iron River.....		
46 West Range.....		
47 Winona Bridge R'y Co.....		
48 Wisconsin & Michigan.....	34	44.20
49 Whitcomb & Morris.....		
50 Wisconsin Central R. R. Co.....		
51 Wisconsin Central Co.....		432.08
52 Hawthorn, Nebagamon & Superior R'y.....		
53 St. Paul & Duluth R'y.....		1.75

*Telegraph.*

Telegraph.— B. Owned by another company, but located on property of road making this report.

Name of owner.	Name of operating company.	No.
Western Union Tel. Co.	Western Union Tel. Co.	1
		2
		3
		4
		5
		6
		7
Western Union Tel. Co.	Western Union Tel. Co.	8
Western Union and C. & N. W. R'y.	Western Union & C. & N. W. R'y	9
Western Union Tel. Co.	Western Union Tel. Co.	10
North American Tsl. Co.	North American Tsl. Co.	11
Standard Oil Co.	Standard Oil Co.	12
		13
Western Union Tel. Co.	Western Union Tel. Co.	14
Western Union Tel. Co.	Western Union Tel. Co.	15
		16
		17
Western Union Tel. Co.	Western Union Tel. Co.	18
		19
		20
		21
		22
		23
		24
		25
		26
		27
		28
		29
		30
Western Union Tel. Co.	Western Union Tel. Co.	31
Western Union Tel. Co.	Western Union Tel. Co.	32
		33
		34
		35
		36
		38
		37
Western Union Tel. Co.	Western Union Tel. Co.	39
Eastern R'y of Minnesota	Eastern R'y of Minnesota.	40
		41
Western Union Tel. Co.	Western Union Tel. Co.	42
		43
		44
		45
		46
		47
Western Union Tel. Co.	Wisconsin & Michigan R'y Co.	48
		49
Western	Owned jointly with Western Union Tel. Co.	50
Western Union Tel. Co.	Western Union Tel. Co.	51
		52
Western Union Tel. Co.	Western Union Tel. Co.	53

CONDENSED REPORT OF STREET RAILWAYS FOR THE YEAR ENDING DECEMBER 31, 1899.

NAME OF COMPANY.	LENGTH OF ROAD.	MILES OF TRACK.		MILEAGE.		AMOUNT OF STOCK.		INDEBTEDNESS.	
		Single.	Double.	In city.	In town or village.	Preferred.	Common.	Bonded.	All Other.
Superior Rapid Transit.....	25.50	.75	12.75	25.50			\$1,000,000	\$808,000	\$147,896.12
Madison Electric R'y Co.....	9.15	8.50	.65	9.15			56,000	140,000	
Fond du Lac St. R'y & Light Co.....	3.63	3.63		3.63			76,100	24,000	77,524.93
Twin City General Electric Co.....	5	5		2	3	\$400,000		150,000	7,741.98
* Fox River Electric R'y & Power Co..	13.53	10.69	2.84	9.66	3.87	124,900		120,450	13,500.00
Chicago, Harvard & Geneva Lake.....	11	5.50			11	150,000		100,000	
Milwaukee Electric R'y & Light Co....	140.29	13.39	63.45	117.54	22.75	150,000		8,000,000	932,074.07
Milwaukee Light, Heat & Traction....	73.18	47.84	12.67	27.89	45.49	3,500,000	3,500,000	1,500,000	244,084.50
Merrill R'y & Lighting Co.....	1.51	1.51		1.51			500,000	56,000	7,400.00
Appleton Electric Light & Power Co..	3.50	3.50		3.50			49,500	135,000	22,283.47
Janesville St. R'y Co.....	7	7		7			50,000	75,000	41,545.48
Citizens Traction Co.....	29.99	29.99		15.46	14.53		500,000	500,000	
Fox River Valley Electric R'y Co.....	7.78	7.58	.20	4.92			200,000	200,000	33,732.89
Sheboygan L. P. & St. R'y Co.....	17	17	2.00	12.19	6.83		141,000	265,000	61,637.02
Ashland Lighting Power & St. R'y Co.	7	7	1.34				150,000	110,000	30,556.60
McCartney Street R'y Co.....	3.25	2.75	.50	3.25		32,500			
La Crosse City R'y Co.....	10.36	7.84	2.52	10.36			200,000	132,000	5,096.55
Waupaca Electric Light & R'y Co.....	4.75	4.75		1.34	3.41		75,000	40,000	5,400.00
Chippewa Valley Electric R'y.....	22	21	1	14	8		200,000	200,000	20,423.50

Street Railways.

CONDENSED REPORT OF STREET RAILWAYS FOR THE YEAR ENDING DECEMBER 31, 1899.

NAME OF COMPANY.	Total receipts of railway separate from other sources.	Total disbursements on account of railway business separate from other.	Total amount during the year charged to construction	Total amount during the year charged to operating expenses.	Location of company.	Name of officer making report.
Superior Rapid Transit.....	\$112,986 15	\$90,180 20	\$2,973 50	\$9,719 67	Superior.....	S. T. Norvel, Rec.
Madison Electric R'y Co.....	53,473 35	46,896 45	4,744 53	42,151 92	Madison.....	F. W. Oakley, Pres.
Fond du Lac St. R'y & Light Co.....	7,549 98	71,613 27	69,626 75	4,375 40	Fond du Lac.....	T. F. Groves, V. Pres.
Twin City General Electric Co.....	13,637 40	10,411 13		12,536 19	Hurley & Ironwood.....	E. D. Nelson, Pres.
* Fox River Electric R'y & Power Co.....	34,661 98	50,461 90	21,611 45	28,850 45	Green Bay.....	Mitchell Joannes, G. Mgr.
Chicago, Harvard & Geneva Lake.....	4,423 48	4,269 63			Walworth.....	H. T. Windes, G. Mgr.
Milwaukee Electric R'y & Light Co.....	1,668,962 87	1,095,445 63	701,981 17	846,362 20	Milwaukee.....	John T. Beggs, G. Mgr.
Milwaukee Light, Heat & Traction.....	170,545 03	124,274 65	1,028,984 12	120,261 13	Milwaukee.....	John T. Beggs, G. Mgr.
Merrill R'y & Lighting Co.....	3,405 17	4,638 27	1,246 72	3,391 55	Merrill.....	E. S. King, Sec.
Appleton Electric Light & Power Co.....	5,518 70	5,450 24			Appleton.....	Aug. Ledyard Smith, Pres.
Janesville St. R'y Co.....	11,453 50	15,907 97	4,456 32	11,281 47	Janesville.....	G. W. Blabons, Pres.
Citizens Traction Co.....	63,329 01	37,111 96	1,410 82	35,701 14	Oshkosh.....	E. E. Downs V. P. & G. Mgr.
Fox River Valley Electric R'y Co.....	39,028 09		145 19	26,028 40	Appleton.....	H. D. Smith, Sec. & Treas.
Sheboygan L. P. & St. R'y Co.....	19,077 02	63,123 17	35,825 27	27,297 90	Sheboygan.....	Edwin F. Debill, Sec.
Ashland Lighting Power & St. R'y Co.....	14,954 81	2,899 81		12,385 70	Ashland.....	Geo. W. Harrison, Pres.
McCartney St. R'y Co.....	3,864 84	5,500 00	1,000 00	4,500 00	Green Bay.....	J. H. Taylor, former Sec.
La Crosse City R'y Co.....	57,585 07	31,984 09	8,784 82	41,768 97	La Crosse.....	B. E. Edwards, Pres.
Waupaca Electric Light & R'y Co.....	2,878 81	1,319 00	45,386 20	1,319 00	Waupaca.....	Irving P. Loug, Pres.
Chippewa Valley Electric R'y Co.....	36,449 85		17,403 17	22,401 29	Eau Claire.....	Arthur E. Appleyard.

Street Railways.

REPORT OF THE RAILROAD COMMISSIONER.

CONDENSED REPORT OF STREET RAILWAYS FOR THE YEAR ENDING DECEMBER 31, 1899.

ITEMS OF OPERATING EXPENSES.

NAME OF COMPANY.	General expenses.	Legal expenses.	Injuries and damages	Rentals paid.	Conducting transportation.	Maintenance of ways and structures.	Maintenance of rolling stock.	For producing power.	Amount set aside for depreciation or reserve.	Amount expended for miscellaneous purposes.
Superior Rapid Transit R'y Co. ....	\$9,602 77	\$10 00	\$324 00	\$10,610 44	\$27,727 46	\$2,482 25	\$9,281 77	\$9,580 98	.....	\$5,042 77
Madison Electric R'y Co. ....	3,024 51	73 20	.....	.....	15,264 52	6,491 40	4,143 53	11,302 14	\$3,000 00	1,852 62
Fond du Lac Str. R'y & Light Co. ....	220 24	.....	.....	.....	3,904 11	251 05	.....	.....	.....	.....
Fox River Elect. St. R'y Co. & P. Co.	3,162 13	101 05	99 53	150 00	11,892 03	2,389 85	1,721 88	8,830 08	.....	500 90
Twin City Electric Co. ....	3,806 91	.....	.....	.....	.....	2,856 47	353 93	2,400 00	.....	3,118 88
Chicago, Harvard & Geneva Lake.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee Elect. R'y & Light Co. ....	75,378 62	25,034 38	50,068 88	2,462 42	527,174 47	92,300 48	73,943 05	.....	321,000 00	.....
Milwaukee Light, Heat & Tract. Co	11,602 45	2,558 11	5,116 34	312 46	77,958 42	12,986 36	9,726 99	.....	.....	.....
Merrill Railway & Lighting Co. ....	135 18	.....	82 00	750 00	1,024 18	247 91	865 28	237 00	.....	.....
Appleton Elect. Light & Power Co. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashland Light & Power Co. ....	1,338 62	25 20	30 00	80 00	5,270 28	1,141 40	898 99	3,793 38	.....	109 33
Janesville Street R'y Co. ....	321 85	86 01	.....	.....	4 022 27	362 95	423 52	6,059 87	.....	.....
Citizens Traction Co. ....	4,065 43	.....	10 00	.....	16,353 81	1,334 12	2,641 49	10,081 73	.....	1,164 56
Fox River Valley Electric R'y Co. ....	1,251 63	749 80	371 10	.....	12,019 32	2,488 58	2,174 63	5,311 39	.....	1,661 95
Sheboygan L. P. & R'y Co. ....	5,069 50	.....	2 50	.....	4,844 61	1,807 70	3,743 57	4,456 00	.....	7,374 02
McCartney St. R'y Co. ....	500 00	100 00	100 00	277 00	1,200 00	150 00	200 00	1,939 00	.....	34 00
La Crosse City R'y Co. ....	319 50	500 00	240 84	.....	16,059 00	3,438 12	3,758 46	6,013 03	.....	1,736 23
Waupaca Electric Light & R'y Co.	243 00	.....	.....	50 00	251 85	133 04	103 24	233 63	.....	304 23
Chippewa Valley Electric R'y Co. ....	4,670 40	.....	.....	.....	17,730 89	.....	.....	.....	.....	.....

Street Railways.

CONDENSED REPORT OF STREET RAILWAYS FOR THE YEAR ENDING DEC EMBER 31, 1899.

NAME OF COMPANY.	ELECTRIC LIGHTING PLANT, RECEIPTS AND EXPENSES.							Date of payment of dividends.	Remarks.
	Amount received from electric lighting.	Amount of operating expenses of electric lighting.	Amount received from other sources.	Amount operating expenses of other sources.	Amount paid by company for interest on bonds.	Amount of other items of interest during year.	Amount of dividends paid on capital stock during year.		
Superior Rapid Tran. R'y Co.					\$18,330 00	\$4,697 08		No lighting plant.	
Madison Electric R'y Co.					7,000 00			No lighting plant.	
Fond du Lac St. R'y & L. Co.	\$15,900 45	\$9,043 70	\$591 77		600 00	1,563 81			
Fox River E. S. R'y Co. & P. Co.								No lighting plant.	
Twin City Electric Co.	5,950 39	5,141 80	7 05		1,800 00			Under construction.	
Chi., Harvard & Geneva Lake									
Milwaukee E. R'y & Light Co.	327,643 43	180,040 35	10,532 56		396,899 69	4,284 51		Amount for producing power.	
Milwaukee L., H. & T. Co.	20,305 32	11,883 30	216 17		50,000 00	13,009 76	Dec 31	Amount for producing power.	
Merrill R'y & Lightening Co.	4,321 80	6,817 88				12 4			
Appleton E. L. & P. Co.	27,464 41	5,361 89	6,815 73	\$2,974 67	4,330 00	5,545 95		No separate account with R'y.	
Ashland Light & Power Co.	20,879 31	10,231 97	106 40	425 26	3,666 67	1,530 15		No light plant	
Janesville Street R'y Co.									
Citizens Traction Co.					18,750 00			No light plant.	
Fox River Valley E. R'y Co.					9,300 00	2,214 50		No light plant.	
Sheboygan L., P. & R'y Co.	40,001 35	33,245 17	3,449 23		6,133 43				
McCartney St. R'y Co.	586 67	390 00	39 95		8,048 65			Plant sold Oct. 20, 1899.	
La Crosse City R'y Co.									
Waupaca E. L. & R'y Co.	6,106 93	2,677 07	705 05			1,494 07			
Chippewa Valley E. R'y Co.									

Street Railways.

REPORT OF THE RAILROAD COMMISSIONER.

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*Company Records.*


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**COMPANY RECORDS.**


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**ABBOTSFORD & NORTHEASTERN.**

Organized April 12, 1889, under the laws of the State of Wisconsin.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN:**

Express Companies.—Contract with National Express Company for carrying express matter for commission on amount of charges.

Mails.—Carrying U. S. mail, \$660.48 per annum.

Other Railroad Companies.—Traffic agreement with Wisconsin Central Ry. Co. for division of earnings and supply of equipment.

Other Contracts.—With Wisconsin Central Ry. Co. for use of Upham Mfg. Co. for trackage rights over the A. & N. E. R. R. at a specified rate per car.

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**AHNAPEE & WESTERN.**

Organized August 18, 1890, under the laws of Wisconsin.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Express Companies.—This company receives as a commission 10% of total charges on express matter received at or forwarded from stations on its line, also one and one-half times this company's first class freight rates on all express matter carried over its line estimated on the weight thereof. In addition to this an allowance of \$22.50 per month, as part messenger salary, is made by the express company to this company.

Mails.—This company receives for transportation of mails and postal car \$2,843.18 per year.

Telegraph Company.—This company receives \$340 worth of telegraphing from the Western Union Telegraph Company in consideration of keeping telegraph line in repair. Telegraph company furnishes all materials for repair.

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**BIG FALLS R'Y CO.**

Organized April 23, 1895, under the laws of the State of Wisconsin.

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**BAYFIELD HARBOR & GREAT WESTERN, Operated By BAYFIELD TRANSFER.**

Organized July 23, 1883, under the laws of Wisconsin.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Mails.—U. S. P. O. Dept. carrying mail from Bayfield to Red Cliff, Wis., and return six times per week.

Other Railroad Companies.—Bayfield Harbor and Great Western Ry. Co. operated for earnings and expenses, any loss or gain resulting therefrom accruing to this company.

*Company Records.*

CHICAGO, MILWAUKEE & ST. PAUL.

Organized May 5, 1863, under the laws of the State of Wisconsin.

Formed on the foreclosure of a portion of the La Crosse & Milwaukee Railroad, organized under the laws of Wisconsin of 1858.

IMPORTANT CHANGES DURING 1899, ENTIRE LINE.

Decrease in mileage by line abandoned or line straightened:	
Miles of main track decreased on account of resurvey, viz.:	
In Wisconsin, between Milwaukee and North McGregor .....	.25 miles
In Michigan, between Channing and Ontanagon .....	.08 miles
	.33 miles
All new stocks issued:	
Preferred: 37,770 shares issued in exchange for bonds.....	\$3,777,000 00
Common: 8,970 shares issued in exchange for bonds.....	897,000 00
Total increase .....	\$4,674,000 00
All new bonds issued:	
Decrease in funded debt.	
Increase:	
For expenditures for equipment real estate and improvements.....	\$1,845,000 00
For purchase of Des Moines Northern & Western R. R.....	2,467,000 00
In exchange for other bonds.....	197,000 00
Decrease:	
Received in exchange for preferred stock and cancelled .....	\$3,777,000 00
Received in exchange for common stock and cancelled .....	897,000 00
Redeemed and canceled during the year.....	197,000 00
	\$4,871,000 00
Net Decrease.....	\$362,000 00

IMPORTANT CHANGES DURING 1900, ENTIRE LINE.

All extensions of road put in operation:	
Miles of road June 30, 1899.....	6,153.50
Purchased:	
2,230 shares, common, issued in exchange for bonds.....	223,000 00
Des Moines to Fonda, Iowa.....	111.98
Clive to Boone, Iowa.....	34.97
Constructed:	
Fonda to Spencer, Iowa.....	43.48
Rockwell City to Storm Lake, Iowa.....	38.58
Libertyville to Nipersink, Ill.....	16.58
Napa to Tyndall, S. D.....	21.21
Ponca, Michigan, Southwest.....	2.95
Calamine to Platteville, Wis., relocation.....	.06
	6,423.31
Decrease in mileage by line abandoned or straightened:	
Iron Ridge to Fond du Lac, Wis., relocation.....	.20
Milwaukee to La Crosse, relocation.....	.41
Chestnut St. to Portage, relocation.....	.03
Miles of road June 30, 1900 .....	6,422.67
All new stocks issued:	
Increase in Capital Stock:	
48,595 shares, preferred, issued in exchange for bonds.....	\$4,859,500 00
2,230 shares, common, issued in exchange for bonds.....	
Total Increase.....	\$5,082,500 00
Decrease in Funded Debt:	
Increase:	
For expenditures for equipment, real estate and improvements....	\$3,000 00
In exchange for other bonds.....	292,000 00
Decrease:	
Received in exchange for preferred stock and cancelled .....	295,000 00
Received in exchange for common stock and cancelled .....	\$4,859,500 00
Redeemed and cancelled during year.....	223,000 00
	292,000 00
	\$5,374,500 00
Net decrease .....	\$5,079,500 00



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*Company Records.*


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## CONTRACTS, AGREEMENTS, ETC. ENTIRE LINE.

Express Companies:—The United States Express Company occupies the lines of this company doing a general express business. Rates are various and are governed by the business done and the facilities furnished.

Mails:—Compensation for mail service is not permanently fixed. Service is ordered subject to the rules and regulations of the Post Office Department, and the amount paid is based upon the weight of the mail transported over each route.

Sleeping, Parlor or Dining Car Companies:—Sleeping, parlor and dining cars are owned and operated by the Chicago, Milwaukee & St. Paul Ry. Co. Sleeping car rates \$1.50 to \$3.00, according to distance. Parlor car rates 25 cents to \$1.00 according to distance. Dining car rates \$1.00 per meal and a la carte.

Freight or Transportation Companies or Lines:—The cars of all transportation companies are allowed to run over the lines of this company, paying regular rates and receiving mileage.

From the report of the Commissioner of Railroads of the United States, we obtain the following in relation to land grants:

“By act of Congress approved May 15, 1856, there was granted by the United States, through the State of Iowa, to the Mississippi & Missouri Railroad Company, afterwards consolidated with the Chicago, Rock Island & Pacific, 1,261,181.60 acres of land. Davenport, Iowa, and the transfer grounds. Union Pacific Railway, are the land grant termini. The records of the General Land Office show that to June 30, 1899, there had been patented to the company by the government 608,941.68 acres of land.

The sales of land during the company's fiscal year, to which title is perfect, amounted to 330.80 acres, for a consideration of \$4,795. Quit claims were made for 549.70 acres, for which \$445 was received and rent and interest were collected amounting to \$1,631.26. The bills receivable at the end of the year amounted to \$14,988.99. The lands unsold, to which title is undisputed (not including town lots) were 701 acres. Taxes paid on lands unsold January 1st amounted to \$618.24’

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 CHICAGO & NORTHWESTERN.

The Chicago & Northwestern Railway Company was organized June 7, 1859, under an act of the Illinois Legislature, approved February 19, 1859, and an act of the Wisconsin Legislature, approved March 14, 1859. Certificate made June 5, 1859. Other companies have been consolidated with the Chicago & Northwestern Railway Company as follows:  
Dixon, Rockford & Kenosha Ry. Co., of Illinois and Wisconsin, organized January 16, 1864.

Galena & Chicago Union R. R. Co., of Illinois, (Chartered by act of Illinois) January 16, 1836, amended March 4, 1837, February 24, 1847, February 11, 1853, February 25, 1854, February 15, 1855.

Peninsular Railroad Co., of Michigan, organized February 3, 1862.

Beloit & Madison R. R. Co., of Wisconsin, chartered by act of Wisconsin February 18, 1852.

Baraboo Air Line R. R. Co. of Wisconsin, chartered by act of Wisconsin, March 8, 1870; amended January 31, 1871.

La Crosse, Trempealeau & Prescott R. R. Co., of Wisconsin, chartered by act of Wisconsin, March 6, 1857; amended April 4, 1864.

Menominee River R. R. Co., of Michigan, organized February 9, 1875.

Escanaba & Lake Superior R'y Co., of Michigan, organized November 24, 1880.

Elgin & State Line R. R. Co., of Illinois, chartered by act of Illinois, February 12, 1889.

Chicago, Milwaukee & Northwestern R'y Co., of Illinois and Wisconsin, organized March 19, 1881.

## DATES AND AUTHORITIES FOR CONSOLIDATIONS.

January 19, 1864, Dixon, Rockford & Kenosha R. R. Co.: General R. R. Law.  
June 2, 1864, Galena & Chicago Union R. R. Co.: Authority Conferred by Charter.

October 21, 1864, Peninsular R. R. Co.: General R. R. Law.

January 10, 1871, Beloit & Madison R. R. Co.: Authority Conferred by Charter.

March 10, 1871, Baraboo Air Line R. R. Co.: Authority Conferred by Charter.

June 6, 1877, La Crosse, Trempealeau & Prescott R. R. Co.: Authority Conferred by Charter.

July 1, 1882, Menominee River R. R. Co.: General R. R. Law.

July 1, 1882, Escanaba & State Line R. R. Co.: General R. R. Law.

*Company Records.*

- June 7, 1883, Elgin & State Line R. R. Co.: Authority Conferred by Charter.  
 June 7, 1883, Chicago, Milwaukee & Northwestern Ry. Co.: General R. R. Law.  
 The property and franchises of other companies have been acquired by the Chicago & Northwestern by purchase. Dates of organization, companies, dates of purchase, and authority for purchase as follows:  
 Organized, April 4, 1882, Balesville & Mississippi River R. R. Co., of Wisconsin purchased March 16, 1883, by General R. R. Law.  
 Organized March 18, 1880, Rock River R. R. Co., of Wisconsin, purchased March 16, 1883, by General R. R. Law.  
 Organized January 26, 1856, Chicago Iowa & Nebraska R. R. Co. of Iowa, purchased July 1, 1884, under General R. R. Law.  
 Organized June 14, 1859, Cedar Rapids & Missouri River R. R. Co., of Iowa, purchased July 2, 1884, under General R. R. Law.  
 Organized June 10, 1876, Maple River R. R. Co. of Iowa, purchased July 3, 1884, under General R. R. Law.  
 Organized July 31, 1872, Stanwood & Tipton Ry. Co., of Iowa, purchased Oct. 24, 1884, under General R. R. Law.  
 Organized March 2, 1870, Iowa, Midland R. R. Co. of Iowa, purchased Oct. 24, 1884, under General R. R. Law.  
 Organized July 2, 1883, Ott., C. F. & St. Paul Ry. Co., of Iowa, purchased Oct. 24, 1884, under General R. R. Law.  
 Organized June 18, 1880, Iowa Southwestern Ry. Co., of Iowa, purchased Oct. 24, 1884, under General R. R. Law.  
 Organized August 1, 1870, Des Moines & Minn. R. R. Co., of Iowa, purchased Oct. 24, 1884, under General R. R. Law.  
 Organized April 9, 1886, Maple Valley Ry. Co., of Iowa, purchased May 4, 1887, under General R. R. Law.  
 Organized April 15, 1886, Janesville & Evansville Ry. Co., of Wisconsin, purchased May 6, 1887, under General R. R. Law.  
 Organized January 13, 1887, Sioux Valley Ry. Co., of Iowa, purchased November 2, 1887, under General R. R. Law.  
 Organized August 18, 1873, Iowa Ry. Coal & Mfg. Co., of Iowa, purchased November 2, 1887, under General R. R. Law.  
 Organized Oct. 30, 1886, Linn Co. Ry. Co., of Iowa, purchased Nov. 2, 1887, under General R. R. Law.  
 Organized June 29, 1858, Sycamore & Cortland R. R. Co., of Illinois, purchased June 7, 1888, under Act of Illinois June 30, 1885.  
 Organized February 15, 1884, Northern Illinois Ry. Co., of Illinois, purchased June 7, 1888, under Act of Illinois June 30, 1885.  
 Organized Oct. 8, 1886, Iron River R. R. Co., of Michigan, purchased June 10, 1889, under act of Michigan, Feb. 27, 1889.  
 Organized August 13, 1887, Iron Range Ry. Co., of Michigan, purchased June 10, 1889, under Act of Michigan February 27, 1889.  
 Organized August 8, 1887, Lake Geneva & State Line Ry. Co., of Wisconsin, purchased June 10, 1889, under General R. R. Law.  
 Organized June 15, 1869, Toledo & Northwestern Ry. Co., of Iowa, purchased June 6, 1889, under General R. R. Law.  
 Organized January 7, 1889, Junction Ry. Co., of Illinois, purchased June 4, 1891, under act of Illinois June 30, 1885.  
 Organized May 28, 1890, Paint River Ry. Co., of Michigan, purchased June 4, 1891, Act of Michigan February 27, 1889.  
 Organized December 11, 1875, Milwaukee, Lake Shore & Western Ry. Co., of Wisconsin and Michigan, purchased Aug. 19, 1893, under General R. R. Law.  
 Organized Feb. 11, 1896, Wisconsin Northern R. R. Co. of Wisconsin, purchased Sept. 10, 1897, under General R. R. Law.  
 Organized March 11, 1862, Winona & St. Peter Ry. Co., of South Dakota and North Dakota, purchased June 7, 1900, under General R. R. Law. (This includes the railroads of the Dakota Central R. R. Co., the Minnesota & South Dakota R. R. Co., and the Mankato & New Ulm R. R. Co., theretofore acquired.)  
 Organized July 22, 1898, Iowa, Minnesota & Northwestern Ry. Co., of Iowa, purchased June 8, 1900, under General R. R. Law.  
 Organized Oct. 8, 1898, Boyer Valley Ry. Co., of Iowa, purchased June 8, 1900, under General R. R. Law.  
 Organized November 11, 1898, Minnesota & Iowa R. R. Co., of Minnesota, purchased June 8, 1900, under General R. R. Law.  
 Organized January 16, 1899, Boone County Ry. Co., of Iowa, purchased June 8, 1900, under General R. R. Law.  
 Organized May 8, 1899, Harlan & Kirkham Ry. Co., of Iowa, purchased June 8, 1900, under General R. R. Law.  
 The following named companies are controlled by the Chicago & Northwestern Ry. Co., by ownership of capital stock:  
 Princeton & Western Ry. Co., of Wisconsin, organized August 1, 1883.  
 Florence County Ry. Co., of Wisconsin, organized August 26, 1898.  
 Southern Iowa Ry. Co., of Iowa, organized March 27, 1900.  
 Princeton & Northwestern Ry. Co., of Wisconsin, organized June 12, 1900.

### Company Records.

The leased line:—St. Paul, Eastern & Grand Trunk Ry. Co., of Wisconsin, organized Sept. 3, 1879.

Total miles of completed road of the Chicago & Northwestern, June 30, 1900, including chartered, consolidated, proprietary and leased lines, and lines operated under trackage rights, 5,571.23 distributed over eight states as follows: Illinois, 593.97; Iowa, 1,440.07; Wisconsin, 1,640.65; Michigan, 521.19; Minnesota, 604.48; South Dakota, 750.93; North Dakota, 14.28; Nebraska, 5.66.

Important changes during 1899 in Wisconsin:

Second track between Evansville and Madison, 27.76 miles, (1899) and between Baraboo and Elroy, 37.30, (1899) was completed.

A new double track draw span, 254 feet in length, together with new masonry, center pier and abutments resting on piles was constructed over Kinnickinnic River at Milwaukee, Wisconsin, and a new single track draw span, 180 feet in length, and two 150 feet, single track fixed span on new masonry piers, and abutments resting on piles were constructed over Fox River at Oshkosh, Wisconsin.

Large and commodious modern brick and stone passenger station buildings were completed at Janesville and Green Bay.

Also passenger station at Wausau, and freight house at South Oshkosh and Sheboygan. A modern brick fruit warehouse at Milwaukee, equipped with proper ventilating apparatus, was also finished.

No leases taken or surrendered effective in Wisconsin.

No consolidation or reorganization effected in Wisconsin.

The capital stock of the Company was increased during the year 1899 as follows: Preferred stock, \$28,000; common stock, \$28,000. Issued in exchange for Peninsula R. R. bonds retired and cancelled.

Stock of proprietary companies was increased by the issue of stock as follows:

Boyer Valley Ry. Co.....	\$10,000 00
Boone Co. Ry. Co.....	5,000 00
Minnesota & Iowa Ry. Co.....	5,000 00
Mankato & New Ulm Ry. Co.....	5,000 00
Florence Co. Ry. Co.....	2,500 00
	\$27,500 00

Total increase of capital stock, \$83,500.

\$2,888,000 of bonds have been issued, and \$2,275,000 of bonds retired during the year. Net increase, \$513,000.

The sinking fund accounts have been increased by payment of installments .....	\$225,000 00
By accretion of interest .....	159,970 00
	\$384,970 00

Total .....

#### IMPORTANT CHANGES DURING 1900 IN WISCONSIN.

14 92 miles of road from Wabena to Laona, Wis., were put in operation during the year.

No decrease in mileage by abandonment of change of line.

A brick and stone passenger station was erected at Oconto, and a new freight house at Wausau.

A considerable amount was expended in erecting sidings, bridges, etc., and in the purchase of additional right of way, depot and yard grounds.

No leases were taken or surrendered effective in Wisconsin.

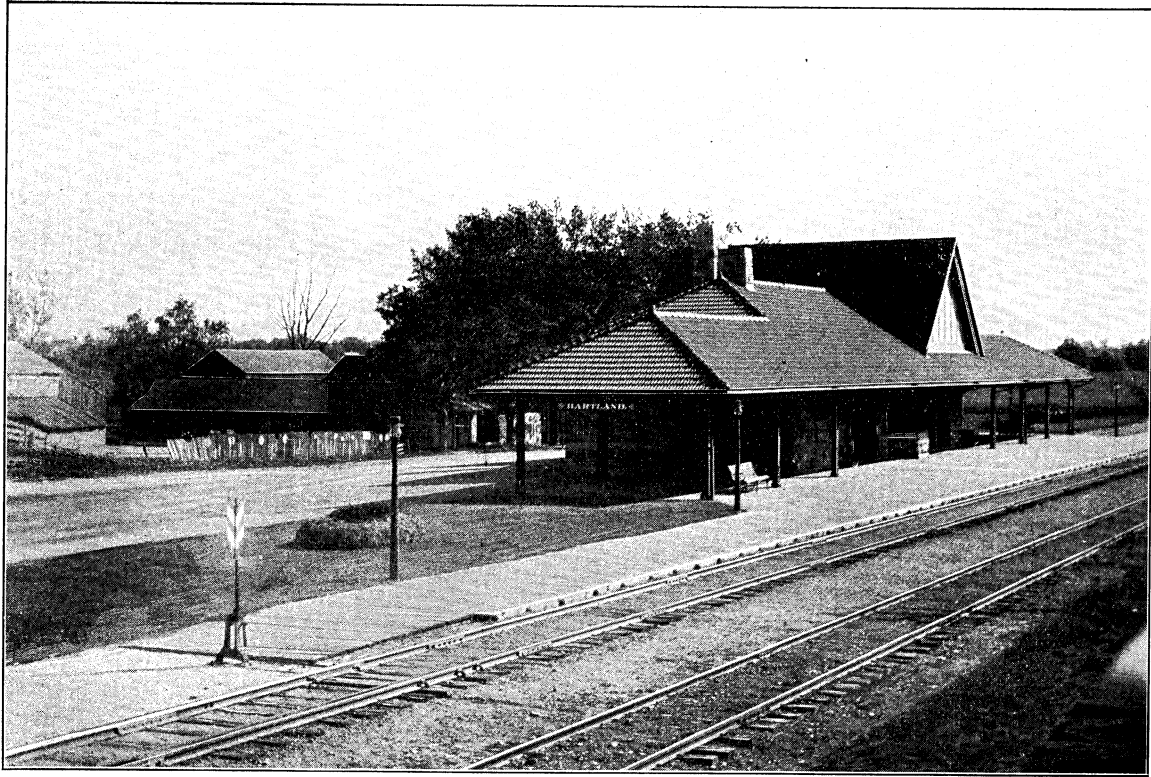
The capital stock was decreased \$258,000 as follows:

Decrease:	
Dakota Central Ry. Co. ....	\$250,000 00
Boyer Valley Ry. Co. ....	10,000 00
Boone Co. Ry. ....	5,000 00
Minnesota & Iowa Ry. ....	5,000 00
Minn. & S. Dakota Ry. ....	5,000 00
Mankato & New Ulm Ry. ....	5,000 00
	\$280,000 00

Increase:	
Minnesota & S. Dakota Ry. ....	\$5,000 00
Southern Iowa Ry. ....	7,000 00
Princeton & Northwestern Ry. ....	10,000 00
	\$22,000 00

Net decrease .....

\$258,000 00



CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.—DEPOT, HARTLAND.



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*Company Records.*


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The funded debt has increased as follows:

New bonds issued:	
Boyer Valley Ry., 1st .....	\$1,440,000 00
Minn. & Iowa Ry., 1st.....	1,904,000 00
I., M. & N. W. Ry., 1st.....	3,900,000 00
Boone County Ry., 1st .....	1,000,000 00
Mankato & New Ulm Ry., 1st .....	416,000 00
Minn. & So. Dakota Ry., 1st.....	528,000 00
C. & N. W. Ry., gen. gold bonds of 1987.....	2,491,000 00
	\$11,679,000 00
Less:	
Old bonds retired:	
Iowa Midland Ry. ....	\$94,000 00
Esc. & Lake Superior Ry. ....	44,000 00
Iowa Div., 1st .....	451,000 00
Gen'l Con. bonds .....	767,000 00
6% of 1879 .....	62,000 00
5% of 1879 .....	73,000 00
	\$1,491,000 00
Net increase .....	\$10,188,000 00
The Sinking fund accounts have been increased:	
By payment of installments .....	\$225,500 00
By accretions of interest .....	168,335 00
Total .....	\$393,835 00

**CONTRACTS AND AGREEMENTS AFFECTING BUSINESS IN THE STATE OF WISCONSIN.**

**Express Companies.**—By an agreement with the American Express Company of date April 1, 1899, to be in force until the first day of April, 1904, the C. & N. W. Ry. Co. agrees to transport the freight of the Express Company over all lines operated by the Railway Company aggregating 5,076 miles, for annual payment of \$575,000.00 for the first two years, and \$580,000.00 for remaining three years, for an estimated limited tonnage, and an agreed schedule of rates for exceptional excess of tonnage.

**Mails.**—The company transports mails over any route on its lines when ordered by the U. S. post office department. The company received such compensation for services as it from time to time fixed.

**Sleeping, Parlor and Dining Cars.**—Sleeping cars are owned by the Pullman Palace Car Co. and are run on this company's lines. The car company maintains the cars and fixes and collects the charges from passengers for accommodations in same. For the use of the cars the C. & N. W. Ry. Co. pays a mileage. It also keeps the outside of the cars cleaned; keeps the journals packed and lubricated and furnishes links, pins, fuel, lights, etc.

Parlor cars are run, owned by the C. & N. W. Ry. Co.

Dining cars are run, owned by the C. & N. W. Ry. Co.

**Freight or Transportation Companies or Lines.**—The cars of all transportation companies are allowed to run over this company's lines, paying the regular rates and receiving mileage, and their freight having no preference over other freight of like class.

**Other Railroad Companies.**—With C., St. P., M. & O. Ry. Co. providing for joint running arrangements between Chicago & St. Paul and a division of earnings upon a pro rata per mile.

With G. B. W. & St. P. Ry. Co. by which that company obtains the joint use of tracks of C. & N. W. Ry. Co. from Marshland to Onalaska, Wisconsin.

With Oshkosh Transportation Company by which the C. & N. W. Ry. Co. acquires the use of certain sidings in the city of Oshkosh, Wisconsin.

With the C., M. & St. P. Ry. Co. by which the C. & N. W. Ry. Co. acquires the use of sidings to cement works at Lindwern, Wisconsin.

**Steamboat or Steamship Companies.**—This company has no contracts with steamboat or steamship companies.

**Telegraph Companies.**—By contract with the Western Union Telegraph Company all lines of road operated by this company are afforded telegraph facilities, this company having certain wires or rights to their use for the business of the railway company; commercial business being done by the telegraph company.

**Telephone Companies.**—This company has along the line of its road for its private use in the conduct of its business, numerous telephones owned by various telephone companies. For the use of these the company pays a rental.

**Other Contracts.**—None.

The C. & N. W. Ry. Co. is interested in other property, the earnings and ex-

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*Company Records.*


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penses of which affect the general balance sheet, viz.: The Western Town Lot Company and Pioneer Townsite Company, whose business is establishing towns and selling town lots in the states of Iowa, Minnesota, N. Dakota, S. Dakota, Wisconsin, Nebraska, and Wyoming. Also the proceeds of sales of the Minnesota, Wisconsin and Michigan land grants, and the Consolidation Coal Co. of Iowa.

From the report of the railroad commissioner of the United States, we obtain the following in relation to land grants:

"The number of acres of land granted to aid in the construction of the roads forming part of the system was 7,642,821.19. Winona, Minn., and Big Sioux River, near Watertown station; Cedar Rapids, Iowa, to transfer grounds, Union Pacific Railway; and Lyons, Iowa, to Clinton, Iowa, are the land grant termini.

The records of the general land office show that to June 30, 1899, of the foregoing grants, land had been patented as follows:

Cedar Rapids & Missouri River .....	1,055,513.78
Chicago, St. Paul, Minneapolis & Omaha .....	2,170,946.95
St. Paul & Sioux City .....	1,123,578.55
Sioux City & St. Paul .....	407,910.21
Sioux City & Pacific .....	41,925.46
Winona & St. Peter .....	1,678,618.06
Chicago & Northwestern .....	1,064,406.35
Total .....	7,542,899.36

The records of the general land office also show that 125,000 acres of railroad-indemnity lands located in Wisconsin belonging to the Chicago, St. Paul, Minneapolis & Omaha Railway Company has been restored, and that on the recommendation of the commissioner, affirmed by the secretary of the interior, 26,017.33 acres, located in Iowa, belonging to the Sioux City & St. Paul Railroad, were also restored to the public domain on September 12, 1887, and 21,979.85 acres in Iowa on February 27, 1896. The company still owns 622,700.87 acres.

The total cash receipts from all sales to date amounted to \$9,599,409.88, and there were outstanding on account of sales \$625,551.67. The receipts from the land department during the year amounted to \$494,518.62 and the expenditures to \$72,713.94. The land sold at an average price per acre of \$10.37."

### CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.

Organized May 25, 1880, by consolidation, under the laws of the states of Wisconsin, Minnesota, Nebraska, Iowa and South Dakota.

This company was formed by the consolidation of the Chicago, St. Paul & Minneapolis and the North Wisconsin Railway Companies. The former was organized under Chapter 119 of the General Laws of Wisconsin 1872, as amended by Chapter 144. General Laws 1877. Latter organized under Chapter 73, Revised Statutes of Wisconsin, 1858.

#### DATE AND AUTHORITY OF EACH CONSOLIDATION.

May 25, 1880, Chapter 260, Laws of Wisconsin 1880, amending Section 1333, Chapter 87, Revised Statutes of Wisconsin 1878.

#### IMPORTANT CHANGES DURING 1899.

During the year there were \$108,000 of consolidated mortgage bonds to expire June 1, 1930, exchanged for \$108,000 of first mortgage bonds due May 1, 1918, and the latter bonds cancelled.

#### IMPORTANT CHANGES DURING 1900.

The mileage was decreased 255-100 miles on account of changes of line and re-measurements.

Consolidated mortgage bonds to expire June 30, 1930, to the amount of \$413,000 were exchanged during the year for a like amount of first mortgage bonds due May 1st, 1918, and the latter bonds cancelled.

*Company Records.***CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

**Express Companies.**—American Express Company: The railway company to transport in car attached to the passenger trains each way daily between all points on its line of railroad in the states of Wisconsin, Minnesota, Iowa, South Dakota and Nebraska the messengers, safes, packing trunks and freight of the express company; also such persons as it becomes necessary to send over the railway company's lines on business of the express company. The express company to take charge of and deliver all money and valuable packages which the railway company may require to have sent or delivered by express on the lines of railroad operated by the express company free of all cost or expense to the railway company.

**Mails.**—This company carries United States mail. Compensation fixed by the U. S. P. O. Dept. No contract.

**Sleeping Cars.**—The Pullman Company runs sleeping cars on this company's railway; the railway company pay the Pullman Co. on mileage basis.

**Other Property**(the Earnings and Expenses of Which Affect the General Balance Sheet.—Land grants, owned in Wisconsin.

The Chicago, St. Paul, Minneapolis & Omaha Ry. Co. has made no detailed statement of its land grant transactions, but from the report of the Commissioner of Railroads of the United States, we obtain the following:

"The company received, through grants of land to companies now belonging to it, 2,173,706.43 acres. Hudson and Superior, Wis., and branch, Superior and Bayfield, Wis., are the land grant termini. The records of the general land office show that land has been patented to June 30, 1899, as follows:

St. Croix & Lake Superior .....	1,357,240.24 acres
La Crosse & Milwaukee .....	813,706.71 acres

and also show that 125,000 acres of railroad-indemnity lands belonging to the Chicago, St. Paul, Minneapolis & Omaha Ry. Co., located in Wisconsin, have been restored to the public domain.

The company reports that there had been acquired by patent from the government to date 2,163,082.79 acres, of which there had been disposed of for cash and on time contracts 1,817,261.59. Contracts have been cancelled for 24,264.39 acres, leaving the number of acres still owned by the company 370,085.59. The total cash receipts from all sales to date amounted to \$8,129,021.92, and there were outstanding on account of time contracts \$84,041.07, the average price per acre during the year being \$2.44 and the average price now asked \$250."

**CHICAGO, BURLINGTON & QUINCY.**

Organized under the laws of the State of Illinois, 1855.

Aurora Branch R. R. Co. Charter Feb. 12, 1849, amended June 22, 1852, 1855, changing name to the Chicago, Burlington & Quincy R. R. Co.

Central Military Tract R. R. Co. Charter Feb. 15, 1851, amended June 19, 1852, and Feb. 11, 1853, consolidated with C., B. & O. R. R. Co. July 9, 1851.

Peoria & Onawka R. R. Co. Charter Feb. 12, 1849, amended Feb. 10, 1851, June 22, 1852, Feb., 1853, Feb. 21, 1861 (changing the name to Lozansport, Peoria & Burlington R. R. Co.); Masters' sale Oct. 20, 1862; March 8, 1864, name changed to Peoria & Burlington R. R. Co.; consolidated with C., B. & Q. R. R. Co. June 24, 1864.

Northern Cross R. R. Charter April 13, 1849, amended Feb. 1, 1857 (name changed to Quincy & Chicago R. R. Co.); Masters' sale April 28, 1864, and conveyed to C., B. & Q. R. R. Co. July 30, 1865.

Burlington & Missouri River R. R. Incorporated Jan. 15, 1850, and the Burlington, Missouri River R. R. in Nebraska incorporated May 12, 1869; consolidated with C., B. & Q. R. R. Co. Jan. 1, 1880.

**IMPORTANT CHANGES DURING 1900 IN WISCONSIN.**

40,415 shares of stock have been sold during year and 6,806 issued in lieu of convertible bonds taken up and cancelled.



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*Company Records.*


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## Changes in funded debt:

	Increase.	Decrease.
C. B. & Q., 5's of 1901.....		\$24,000 00
C. B. & Q., Consol. Mtge.....		4,562,000 00
C. B. & Q., Consol. Mtge. Scrip .....		6,000 00
C. B. & Q., Convertible 5's .....		680,600 00
C. B. & Q., Iowa Division, 5's .....		56,000 00
C. B. & Q., Iowa Division, 4's .....		170,000 00
C. B. & Q., Ill. Division, 3½'s .....	\$25,674,000 00	
B. & M. R. R. R., in Neb. Consol. Mtge.....	24,000 00	
O. O. & F. R. V., 8's of 1900.....		1,076,000 00
C. B. & N. R. R., 1st Mtge.....		7,914,000 00
C. B. & N. R. R., Equipment .....		968,000 00
O. A. & Lill., 5's .....		840,000 00
Net increase .....	\$9,461,400 00	

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**CONTRACTS, AGREEMENTS, AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Adams Express Co.

Pullman Company for sleeping cars.

North American Telegraph Co. owns and operates wires strung on the C., B. & Q. R. R. Co.'s poles, paying annual rental for privilege.

From the report of the railroad commissioner of the United States we obtain the following in relation to land grants:

"By act of Congress approved May 15, 1856, there were granted by the United States to the State of Iowa, to aid in the construction of this road between Burlington and the Missouri River at East Plattsmouth, Iowa, 948,643.66 acres of land, and by the act of July 2, 1864, to the Burlington and Missouri River Railroad in Nebraska, to aid in construction from Plattsmouth to Kearney Junction, Neb., 2,441,600 acres; total, 3,390,243.66 acres of land.

The records of the General Land Office show that to June 30, 1899, there had been patented to the Burlington & Missouri River Railroad Company, in Iowa, 389,989.71 acres, and in Nebraska 2,374,690.77 acres: a total of 2,764,680.48 acres patented. The company reports that it has received by United States patent 2,373,870.77 acres of land. There have been disposed of for cash on time sales (including lands reclaimed by the United States) 2,375,498.81 acres. The total cash receipts from all sales to June 30, 1899, amounted to \$11,324,185.09, and there were outstanding on account of time sales, principal and interest, \$154,629.69. The receipts from the land department during the year amounted to \$100,530.87, and the expenses to \$15,824.46. The remaining lands are held at an average price of \$4 per acre."

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**CHICAGO, LAKE SHORE & EASTERN.**

Organized February 17, 1897, under the laws of the State of Illinois.

The name of the Calumet & Blue Island Railway Company, incorporated under the laws of Illinois, Sept. 20, 1889, was on Feb. 7, 1897, changed to the Chicago, Lake Shore & Eastern Ry. Co., and the Chicago, Lake Shore & Eastern Ry. Co. incorporated under the laws of Indiana April 4, 1895, was on the 17th day of February, 1897, duly consolidated with the Illinois corporation.

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**IMPORTANT CHANGES DURING 1899.**

Milwaukee Bay View & Chicago Railway extended by 4.86 miles.

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**CHICAGO & LAKE SUPERIOR.**

Organized March 16, 1897, under the laws of the State of Wisconsin.

This company succeeded to the rights of the Chicago & Lake Superior R. R. Co. and the Cambridge & London R. R. Co.

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*Company Records.*


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**CHICAGO, MADISON & NORTHERN, Operated By ILLINOIS  
CENTRAL.**

Organized August 3, 1886, under the laws of the State of Illinois.

A corporation founded by the consolidation of the following roads:  
Chicago, Madison & Northern R. R. Co., a corporation of the State of Illinois,  
incorporated August 3, 1886.

Chicago, Madison & Northern R. R. Co., a corporation of the State of Wisconsin,  
incorporated August 4, 1886.

The Freeport, Dodgeville & Northern R. R. Co., a corporation of the State of  
Illinois, incorporated May 17, 1887.

The Freeport, Dodgeville & Northern R. R. Co., a corporation of the State  
of Wisconsin, incorporated May 17, 1887.

The first two named companies were consolidated under agreement dated  
March 30, 1887. Articles filed in Illinois on April 16, 1887, and in Wisconsin April  
21, 1887. The Freeport, Dodgeville & Northern R. R. Co. in Wisconsin and the  
Freeport, Dodgeville & Northern R. R. in Illinois were consolidated with the  
Chicago, Madison & Northern R. R. March 12, 1888.

The Chicago, Madison & Northern Company of Illinois and the Chicago, Mad-  
ison & Northern Company of Wisconsin were consolidated March 30, 1887. The  
Freeport, Dodgeville & Northern R. R. Co. of Illinois and the Freeport, Dodge-  
ville & Northern R. R. Co. of Wisconsin were consolidated with the Chicago,  
Madison & Northern R. R. Co. March 12, 1888, articles of consolidation being  
duly filed in the State of Illinois March 30, 1888, and in the State of Wisconsin  
April 25, 1888.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE  
STATE OF WISCONSIN.**

Express.—The express business on this road is handled by the American Ex-  
press Company, they paying a specified sum for specified privileges and extra  
for extra facilities.

Mail.—The rate of compensation for carrying United States mails is fixed by  
the post office department and is based upon the weight of mail carried. The  
weight is taken every four years.

Sleeping Cars.—Contract made June 1, 1891, between the Illinois Central R. R.  
Co. and the Pullman Palace Car Company for the use of their sleeping cars for  
25 years, the Pullman Co. to furnish sleeping cars and the Railroad Co. paying  
the usual mileage rates.

Telegraph Companies.—The Western Union Telegraph Company handles tele-  
graph business along the line of this railroad under agreement dated November  
30, 1899. The Telegraph Company furnishes necessary supplies and the Railroad  
Co. one-half the labor. Railroad business being transmitted free.

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**CHIPPEWA RIVER & MENOMONIE.**

Organized October 1, 1883, under the laws of the State of Wisconsin.

**IMPORTANT CHANGES DURING 1899.**

Weigore Branch abandoned, Sec. 30, T. 36, R. 8 W., to Weigore Pond, Sec. 21,  
T. 36, R. 8 W. 2 miles.

**IMPORTANT CHANGES DURING 1900.**

Part of main line abandoned, from Chippewa River at Sec. 7, T. 34, R. 7 W to  
Apollonia at Sec. 1, T. 34, R. 8 W, 1½ miles.

Kegame Branch abandoned, from Sec. 31, T. 36, R. 8 W., to 3-35-9 W., 4 miles.

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**DRUMMOND & SOUTH WESTERN.**

Organized August 3, 1891, under the laws of the State of Wisconsin.

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*Company Records.*


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**DULUTH, SOUTH SHORE & ATLANTIC.**

Organized December 22, 1886, under the general railway laws of Michigan and Wisconsin.

Other companies have been consolidated as follows:  
Sault Ste Marie and Marquette R. R. Co., organized under the laws of Michigan.

Mackinaw & Marquette R. R. Co., organized under the laws of Michigan.  
Wisconsin, Sault Ste Marie & Mackinaw R. R. Co., organized under the laws of Michigan.

Duluth, Superior & Michigan Ry. Co., organized under the laws of Wisconsin.

**DATES AND AUTHORITIES FOR EACH CONSOLIDATION.**

December 22, 1886, by agreement of the above named companies under the general railway laws of the states of Michigan and Wisconsin.

**IMPORTANT CHANGES DURING 1899.**

New branches built, aggregate length 1 35-100 miles.

**IMPORTANT CHANGES DURING 1900.**

New branches built 33-100 miles.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Express Companies.—Western Express Co. They receive variable amounts per month based upon the earnings of the Western Express Company.

Mails.—U. S. mails are carried under the regulations of the post office department.

Sleeping Cars.—The Pullman Co. furnish sleeping cars for a mileage compensation.

Other Railroad Companies.—Lake Superior Terminal and Transfer Ry. Use of tracks and terminals at West Superior, Wis.; the rental is based on a pro rata of L. S. T. & T. Ry. Co.'s entire expenses between the railroad companies using the same.

Northern Pacific Ry. For handling business between West Superior, Wis., and Duluth, Minn. Compensation allowed \$5 per passenger train, \$5 per loaded freight car, \$1 per empty freight car that has not been handled loaded, \$1 per light engine, and 50 cents per ton on all freight handled through the Northern Pacific Ry. Co.'s freight house at Duluth, Minn.

C., St. P., M. & O. Ry. For handling business between 7th St. and Newton Ave., West Superior, Wis. Compensation allowed, 50 cents for each loaded freight car, 50 cents for each passenger, mail or express car, \$1 for each engine, 25 cents for each empty freight car.

Telegraph Companies.—Western Union Telegraph Co. Joint use of wires on line of road and percentage of receipts from commercial business.

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**DULUTH, SUPERIOR & WESTERN TERMINAL CO.**

Organized July 15, 1897, under the laws of West Virginia..

Reorganization of Duluth & Winnipeg Terminal Co., organized under laws of West Virginia.

Other Properties, the Earnings and Expenses of Which Affect the General Balance Sheet.—Ore docks, handling iron ore.

**IMPORTANT CHANGES DURING 1900 IN WISCONSIN.**

Acquired by purchase from the Superior Belt Line & Terminal Co.. 5.25 miles.  
Lease of tracks of Superior Belt Line & Terminal Co. surrendered March 27, 1900.

Stock amounting to \$749,500 authorized and issued during the year for the purpose of securing funds with which to purchase the property formerly owned by the Superior Belt Line & Terminal Co. for purchase of equipment and construction of additional docks and extensions of and improvements to the property of the company.

*Company Records.*

DUNBAR & WAUSAUKEE.

Organized March 13, 1882, under the Michigan law for incorporation of manufacturing companies.

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Freight or transportation companies or lines.  
 A memorandum of agreement with the C., M. & St. P. Ry. governing division of earnings on tariff between points on D. & W. Ry. and points on the C., M. & St. P. Ry.

EASTERN RAILWAY CO. OF MINNESOTA.

Organized August 13, 1887, under the laws of the Territory of Minnesota and States of Minnesota and Wisconsin.

The Eastern Ry. Co. of Minnesota was consolidated with the Lake Superior & South Western Ry. Co. January 10, 1888, under the laws of the State of Wisconsin.

The Eastern Ry. Co. of Minnesota was organized under the charter of the Minneapolis and St. Cloud Ry. Co.

Other Properties, the Earnings and Expenses of Which Affect the General Balance Sheet.—Great Northern Elevators, A. & X. Handling grain in transit on this company's line.

IMPORTANT CHANGES DURING 1899 IN WISCONSIN.

Line constructed Nemadji Jct., Wis., to Minnesota State Line, 10.36.  
 Stock amounting to \$7,500,000.00, authorized and issued.

Issued to secure funds with which to purchase Duluth, Superior & Western Ter. Co. bonds.....	\$500,000 00
Park Rapids & Leech Lake Ry. Co. stock.....	500,000 00
Park Rapids & Leech Lake Ry. Co. bonds .....	500,000 00

Purchase the railway appurtenances and rights of Duluth, Mississippi River & Northern Ry. Co.  
 Constructing, completing and equipping of lines between Lake Superior and Fosston, and from point near Coon Creek to Sandstone.  
 Also for additional equipment and facilities at Lake Superior Terminals and elsewhere upon the company's system.

IMPORTANT CHANGES DURING 1900 IN WISCONSIN.

Acquired by purchase from the Superior Belt Line & Terminal.....	5.69
Constructed second track Boylston to State Line .....	7.86
Lease of tracks of the Superior Belt Line & Terminal Co. surrendered March 27, 1900.	

Stock of this company issued during the year, \$3,500,000, to cover:  
 Cost of constructing, purchasing or acquiring a bridge across the St. Louis River between Duluth and West Superior.  
 Acquiring or constructing extensions to this company's existing lines of railway.  
 Constructing a grain elevator, plant and appurtenances at West Superior.  
 Making additions to and improvements of its existing railway and appurtenances.

Acquiring additional equipment for its railways.	
The book valuation of the following stocks and bonds written off:	
Northern Land Co., stock .....	\$1 00
Northern Land Co., bonds .....	50,000 00

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Contract with the Great Northern Express Company whereby they do all express business on this road, this company receiving a percentage of gross earnings.

Routes established by the U. S. government in accordance with law.  
 This company operates its own sleeping, parlor and dining cars.

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*Company Records.*


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**FAIRCHILD & NORTH EASTERN.**

Organized July 7, 1898, under the laws of the State of Wisconsin.

**IMPORTANT CHANGES DURING 1899 IN WISCONSIN.**

Line increased four miles from Greenwood northeast to Shilling.

**IMPORTANT CHANGES DURING 1900 IN WISCONSIN.**

Line increased three miles from Shilling, Wis., to a point northeast.  
Telephone line transferred to the N. C. Foster Lbr. Co.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

American Express.  
United States mail.

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**GREEN BAY & WESTERN.**

Organized June 5, 1896, under the laws of Wisconsin. Reorganized June 10, 1896.  
Was formerly the Green Bay, Winona & St. Paul R. R. Co.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Express.—U. S. Express Co. pays this company 40% on gross express earnings with minimum of \$170 per month to the Railroad Co.

Mail.—U. S. P. O. Department pays the Railroad Co. \$19,994.60 per annum for carrying mail on routes Nos. 137027 and 139076.

Other Railroad Companies.—Contract with C., B. & Q. R. R. allowing this company use of tracks and terminals at Winona, Minn., the rental being based on value of property so used.

Telegraph.—Telegraph line owned jointly with the Western Union Telegraph Co.

Other Contracts.—Contract with Winona Bridge Ry. Co. This company pays annual rental of \$1,200, also a percentage on all traffic.

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**HAWTHORNE, NEBAGAMON & SUPERIOR.**

Organized August 14, 1898, under the laws of the State of Wisconsin.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Other Railroad Companies.—Chicago, St. Paul, Minneapolis & Omaha Ry. Co. 40 per cent. and 50 per cent. freight received from points on their line, north of St. Paul, Minn. Same on ail commodities excepting lumber or taking lumber rates given their line. 2, 3, and 4 cents on lumber to local points.

In connection with C. & N. W. Line and Omaha 20% on all commodities excepting lumber, both in and out. 3 cents on lumber on C. & N. W. local points. 7 cents on lumber to Chicago and points east of Chicago in Indiana and Ohio.

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**HAZELHURST & SOUTH EASTERN.**

Organized January 30, 1896, under the laws of the State of Wisconsin.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

With C. & N. W. Ry. Co.: On shipments of lumber H. & S. E. Ry. Co. receive 2½ cents per cwt., and on L. C. L. ft. H. & S. E. Ry. Co. receive 20% of C. & N. W. Ry. Co. earnings.

With C., M. & St. P. Ry. Co.: On shipments of lumber in Co. H. & S. E. Ry. Co. receive 2½ cents per cwt., and on L. C. L. ft. H. & S. E. Ry. Co. receive 20% of C., M. & St. P. Ry. Co.

C. & N. W. Ry. and C., M. & St. P. Ry. Cos. settle all mileage accruing on foreign cars on this line.

American Express: H. & S. E. Ry. Co. receive 25 cents per cwt. on all freight transported for the express company.

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*Company Records.*


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## HOLMES &amp; SON RY.

## IMPORTANT CHANGES DURING 1900 IN WISCONSIN.

## Extensions:

Branch starting from point on main line on S. E.  $\frac{1}{4}$ , N. E.  $\frac{1}{4}$ , Sec. 12, Town 37, Range 18, to S. W.  $\frac{1}{4}$ , N. W.  $\frac{1}{4}$  of Sec. 20, Town 37, Range 18, 8 miles.  
Branch from point on main line on S. W.  $\frac{1}{4}$ , S. E.  $\frac{1}{4}$ , Section 24, Town 37, Range 18, to S. W.  $\frac{1}{4}$ , S. W.  $\frac{1}{4}$ , Section 27, Town 37, Range 18, two miles.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Carry no passengers, and no freight except a few cars of cedar posts, poles, ties, etc., which we deliver to the Chicago, Milwaukee & St. Paul Ry. Co. On these cars we collect a switching charge of from six to eight dollars per car, according to the distance hauled. Total revenue for the year from this source was \$830.

We get a certain price for M. feet for putting logs in the river or delivering them to the Chicago, Milwaukee & St. Paul Ry. Co. Do not keep the railroad expenses separate from the logging and could not give the exact cost of operating the road.

## IOLA &amp; NORTHERN.

Organized under the laws of the State of Wisconsin May 9, 1893.

## IMPORTANT CHANGES DURING 1899.

While there have been 714 shares of stock issued to the par value of \$71,400, the only amount thus far entered on the books of the company, as a liability is the amount furnished by the builders of the road for construction and equipment, viz.: \$37,855.71.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

U. S. Express Co. pays 40% of gross earnings on express companies.  
U. S. government pays this company \$222.72 per annum on mail route No. 139050.

## GLENWOOD &amp; NORTHEASTERN.

The Wisconsin Central Railway Company owns the steel and track fastenings. The Glenwood Mfg. Co. paid one-half of the cost of grading the road and the Wisconsin Central Ry. Co. paid the other one-half. The Glenwood Mfg. Co. pays the Wisconsin Central Ry. Co. an annual rental of six per cent. (6%) on one-half the cost of grading. At the expiration of ten years from the date of contract the railroad reverts to the Wisconsin Central Ry. Co.

## KEWAUNEE, GREEN BAY &amp; WESTERN.

Organized under the laws of Wisconsin May 29, 1890.

## AGREEMENTS, CONTRACTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Express Companies.—U. S. Express Co. pays this company 40% of the gross earnings on express with minimum of \$50 per month.

Mails.—U. S. P. O. Department pays this company \$3,022.18 per annum for carrying mails on route No. 139081.

Telegraph.—Telegraph line owned jointly with Western Union Telegraph Co.

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*Company Records.*

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MATTOON R'Y CO.

Organized Feb. 21, 1895, under the laws of Wisconsin.

MILWAUKEE & SUPERIOR.

Organized October 24, 1885, as Milwaukee, Menomonie Falls and Western Ry. Co. Dec. 11, 1891, name changed to Milwaukee & Superior Ry. Co. under the laws of the State of Wisconsin.

IMPORTANT CHANGES DURING 1900 IN WISCONSIN.

All new stocks issued:  
 80 shares ..... \$3,000 00

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Express Companies.—Agreement with United States Express Company for transportation of express matter.

Mails.—With U. S. government for carrying mails.

Other Railroad Companies.—With Chicago, Milwaukee & St. Paul Ry. Co. for use of part of its right of way at Granville and joint use of depot at said station.

Telegraph Companies.—With Western Union Telegraph Company for maintenance of telegraph lines.

MARSHFIELD & SOUTH EASTERN.

Organized February 20, 1896, under the laws of Wisconsin.

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Express Companies.—American Express Co.

MARINETTE, TOMAHAWK AND WESTERN.

Organized October 9, 1894, under the laws of the State of Wisconsin.

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Express Companies.—Contract with American Express Company for car space and transportation of messengers, safes, packing trunks and freight of Express Company between Tomahawk and Harrison, daily, Sundays excepted, for the term of two years from March 4, 1899. Consideration \$25.00 per month for all tonnage hauled.

Mails.—Postmaster general order No. 139063 dated October 10, 1899, to transport mail from Tomahawk to Tomahawk Junction, Wisconsin, and back six times a week, or as much oftener as trains may run, from July 1st, 1899, to June 30, 1903; consideration \$42.75 per mile for 5.40 miles.

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*Company Records.*


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## MINNESOTA &amp; WISCONSIN.

Organized November 28, 1896, under the laws of the State of Wisconsin.

## IMPORTANT CHANGES DURING 1898.

Abandoned one mile from Wildwood to Wildwood Junction. Present length of single track from Spring Valley to Emerald 21 miles.

## IMPORTANT CHANGES DURING 1900.

New stock issued: \$155,000.  
 New bonds issued: \$67,000.  
 \$10,000 new stock in treasury of company.  
 \$18,250 of new bonds in treasury of Co.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

American Express Co.  
 U. S. government.  
 Interline agreements with connecting lines, viz.: C., St. P., M. & O. Ry. and Wis. Cent. Ry.  
 Western Union Telegraph Co.

## MINNEAPOLIS, ST. PAUL &amp; SAULT STE. MARIE.

Organized June 11, 1888.

The Menomonic & Sault Ste. Marie Ry. Co. was organized under the general laws of Michigan.

The Minneapolis Sault Ste. Marie & Atlantic Ry. Co. was organized in the year 1883 under the general incorporation laws of Wisconsin.

Said two companies were consolidated in the year 1886, under paragraphs 3343 and 3344, pages 854 and 855, Howell's Annotated Statutes of Michigan.

The Minneapolis & Pacific Railway Company was organized in the year 1884, and the Minneapolis & St. Croix Railway Company in the year 1885 under the general incorporation laws of Minnesota.

The Aberdeen, Bismark & Northwestern Railway Company was organized in the year 1883 under the general incorporation laws of the Territory of Dakota.

In the year 1888, the said consolidation company, the said Minneapolis & Pacific Railway Company, the said Minneapolis & St. Croix Railway Company and the said Aberdeen, Bismark & Northwestern Railway Company was consolidated and all their right, properties and franchises united and vested in one single corporation, the said Minneapolis, St. Paul & Sault Ste. Marie Railway Company, under the statutes above referred to, and paragraphs 66, 67 and 68, pages 381 and 382, general laws of Minnesota for the year 1878, and chapter 94, general laws of Minnesota for the year 1881, and chapter 46, general laws of the Territory of Dakota for the year 1876.

## IMPORTANT CHANGES IN WISCONSIN DURING 1899.

All new bonds issued.  
 \$3,500,000, 2d mortgage 50-year gold bonds issued, 4%.

## IMPORTANT CHANGES DURING 1900, ENTIRE LINE.

\$761,000 income certificates paid.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Express Companies.—The Western Express Company operates over the lines of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Co. and the Duluth, So. Shore & Atlantic Ry., the net earnings being divided between the companies.

Mails.—U. S. P. O. Dept. Route 139059, St. Paul, Minn., to Sault Ste. Marie, Mich.: \$153.05 per mile; 490.81 mileage.

Sleeping, Parlor or Dining Cars.—This company owns its sleepers and diners, and operates them jointly with the Canadian Pacific Ry.

Telegraph.—This company owns and operates its telegraph line.



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*Company Records.*


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## NORTHERN PACIFIC.

Chartered by State of Wisconsin, March 15, 1870; amended Jan. 20, 1871, March 6, 1871, and April 15, 1895.

Original name "Superior & St. Croix R. R. Co.," changed in July, 1896, by resolution of stockholders and directors to "Northern Pacific Railway Company."

## IMPORTANT CHANGES DURING THE YEAR 1899, ENTIRE LINE.

All extensions of road put in operation:		
Gaylord & Ruby Valley R. R., constructed.....	22.20	
Palouse & Lewiston Branch, constructed.....	21.09	
Aberdeen Branch, constructed.....	4.23	
Souris River Branch, constructed.....	46.50	
Clark Fork Branch, constructed.....	19.44	
Main Line at Lit. Falls.....	5.65	
Branch Line Spurs, constructed.....	8.92	
	<hr/>	
	128.03	
Less joint spurs (decrease).....	.16	127.87
Spokane & Seattle Ry. (added).....	33.49	
Montana Union & Mont. Rys. (added).....	91.67	
	<hr/>	
		125.16
Corrections in measurements.....		0.16
		<hr/>
		253.19
Washington Central Ry. leased for 999 years (lease dated June 1, 1898) at a rental equivalent to interest on the bonds of that company.....		109.53
		<hr/>
Addition to mileage this year.....		362.72
Increase in prior lien bonds.....	\$4,958,200 00	
Decrease in general 1st mortgage bonds.....	3,814,000 00	
General 1st mortgage conversion at \$1,300 per bond in prior lien bonds.....	\$1,144,200 00	
Prior lien bonds retired under terms of mortgage.....	500,000 00	
	<hr/>	
Increase in bonded debt.....		\$644,200 00

## IMPORTANT CHANGES DURING 1900, ENTIRE LINE.

Skyeston Branch.....	15.02	
Cooperstoen Branch.....	26.14	
Lapawi Branch.....	11.96	
Clearwater Short Line Ry. ....	62.79	
Portage & N. W. Ry.....	29.21	
Bitter Root Branch.....	5.50	
Little Falls Branch.....	.10	
Main Line at Lit. Falls.....	3.20	
	<hr/>	
		153.92
Tracks heretofore classed as main track now classed as spurs.....	7.28	
230 line Tacoma transferred from spurs.....	1.95	
	<hr/>	
	5.33	
Corrections in measurements.....	.14	
	<hr/>	
		5.47
		<hr/>
		148.45
Increase in prior lien bonds.....	\$2,650,500 00	
Less purchased and cancelled.....	782,600 00	
	<hr/>	
		\$1,867,900 00
St. Paul & Duluth Divn. N. R. Ry. bonds issued.....	9,215,000 00	
St. Paul & Duluth R. R. bonds assumed.....	4,906,500 00	
	<hr/>	
		\$15,989,400 00
General 1st mortgage bonds N. P. R. R. retired.....	5,375,000 00	
	<hr/>	
Increase.....		\$10,614,400 00

*Company Records.*

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Express Companies.—The Northern Pacific Express Co. runs over all lines operated by this company, paying a percentage of its gross earnings as compensation.

Mails.—U. S. mails are carried by this company at the rates of pay authorized by act of congress and under the rules of the P. O. Dept.

Other Railroad Companies.—C., St. P., M. & O. Ry., granting the use of tracks between West Superior terminal grounds and St. Louis Bridge, paying therefore 3% per annum on valuation of the property.

D. S. S. & A. Ry., granting trackage and terminal facilities between West Superior and Duluth, paying therefor \$5 per passenger train and \$5 per loaded freight car and a proportion of expenses; also trackage of trains between Iron River and Superior, paying 50 cents per mile.

Bayfield Western Ry., granting trackage of trains between Iron River and Superior and spur track to Iron River, paying 50 cents per mile.

Washburn, Bayfield & Iron River, granting trackage between Iron River and Superior and Duluth, paying 50 cents per mile.

Telegraph Companies.—With W. U. Telegraph Co. Earnings divided on a percentage.

From the report of the Railroad Commissioner of the United States, we obtain the following in relation to land grants:

"This company was chartered originally March 15, 1870, as the Superior & St. Croix Railroad Company, and changed its name in July, 1896, by resolution of stockholders and directors, to Northern Pacific Railway Company. This company succeeded to the rights, property, and franchises of the Northern Pacific Railroad Company, taking possession of the property on September 1, 1896.

The records of the General Land Office show that 8,946,400 acres of railroad indemnity lands, located in Wisconsin, Minnesota, Dakota, Montana, Idaho, Washington and Oregon, have been restored to the public domain, and that by a decision of the Commissioner, dated September 13, 1886, affirmed by the Secretary of the Interior, 32,400 acres of the grant located in Washington have also been restored. Also by order of January 22, 1896, there were restored in the State of Washington some 378,358 acres. By decision of July 9, 1896, the Secretary of the Interior established a new western terminal for the portion of the Northern Pacific Railroad grant declared forfeited by the act of September 29, 1890, which had the effect of adding to the lands already held to have been forfeited about 53,120 acres, which were restored to entry under instructions of August 20, 1896. By decision of August 27, 1896, the final eastern terminus of said grant was fixed at Duluth, Minn., which decision had the effect of restoring to entry all lands previously withdrawn for the company lying east of the terminal established pursuant thereto and approved by the Secretary December 24, 1896. The lands affected lie within the State of Minnesota and the State of Wisconsin, but the quantity has not been ascertained.

The records of the General Land Office show that to June 30, 1899, there had been patented to this company in the states of—

Minnesota .....	1,755,542.75 acres
North Dakota .....	8,283,565.43 acres
Oregon .....	158,482.25 acres
Washington .....	6,903,562.80 acres
Idaho .....	411,515.02 acres
Montana .....	4,768,351.86 acres
Total .....	22,381,020.11 acres

All the lands unsold of the Northern Pacific Railway Company lying west of the Missouri River were purchased by this company under the reorganization, the aggregate price paid therefor being \$5,605,200. The company, in its last report, states that great prosperity has been evidenced by the sale of these lands, the acreage disposed of being nearly 50 per cent. more and the number of individual purchasers greater than in any previous year in the history of the property. The lands of the old company lying east of the Missouri River are in the hands of the receivers, but it is hoped by the new company that its interest in these lands may be realized before long. This company asserts against these lands about 95 per cent. of the indebtedness represented by the creditors of the old company.

The company reports that it received during the year ended June 30, 1899, by United States patent, 325,946.16 acres of land; by patent from the State of Minnesota, 8,902.20 acres, and by cancellation of contracts, 411,610.20 acres, making a total of 1,580,196.69 acres received since September 1, 1896, the date of reorganization. There had been disposed of during the year 1,033,269.59 acres. The total cash receipts from all sales from September 1, 1896, to June 30, 1899, amounted to \$7,642,429.96, and there were outstanding on the latter date, on account of time sales, \$829,572.61."

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*Company Records.*


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## NORTHWESTERN COAL RY CO.

Organized December 9, 1892, under the laws of the State of Wisconsin.

## IMPORTANT CHANGES DURING 1900.

11.12 miles of track sold to Superior Belt Line & Terminal Co.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Other Railroad Companies.—Switching tariffs.

Other Contracts.—Five private telephones \$100 per year. Two exchange telephones \$130 per year.

The Northwestern Coal Ry. Co. is interested in other property, the earnings and expenses of which affect the general balance sheet, namely, the dockage and storage of coal and other merchandise at West Superior.

## OSHKOSH TRANSPORTATION CO., Operated By C. &amp; N. W.

Organized: Articles of Association certified Nov. 4, 1867, under the laws of the State of Wisconsin.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Contract with the Chicago & Northwestern Ry. Co. grants that company lated price per car for loaded cars.

## ST. PAUL &amp; DULUTH.

Organized June 27, 1877, under the general laws of Minnesota, Chapter 30, laws of 1876, and acquired all franchises conferred under special act of 1861, chapter 1, act of March 8, 1861.

Other companies have been consolidated with the St. Paul & Duluth as follows:

Knife Falls Branch, under special law of 1878, built and owned by St. P. & D. R. R.

Grantsburg, Rush City & St. Cloud, incorporated Nov. 28, 1878, under general laws of Minnesota, purchased by March 2, 1899.

St. Cloud, Grantsburg & Ashland, incorporated June 30, 1878, under the general laws of Wisconsin, purchased March 2, 1899.

Taylor's Falls and Lake Superior, incorporated Feb. 8, 1875, under the general laws of Minnesota, purchased Nov. 12, 1898.

Stillwater & St. Paul, incorporated June 24, 1867, under the general laws of Minnesota, purchased March 2, 1899.

Duluth Short Line, incorporated July 1, 1886, under the general laws of Minnesota, purchased Nov. 11, 1898.

Branch to Quarries, incorporated under general laws of Minnesota, built and owned by St. Paul & Duluth.

Duluth Twin Cities & S. W. incorporated Feb. 1, 1888, under the general laws of the State of Minnesota, expenditures made by the St. P. & D. No road built.

Minneapolis & Duluth R. R. Owned by M. & S. L. R. R. and leased by the St. P. & D. from them for 99 years from Aug. 1, 1882.

## DATES AND AUTHORITIES FOR CONSOLIDATION.

June 30, 1899, these roads were merged with main line:

Grantsburg, Rush City & St. Cloud, March 2, 1899, deed of conveyance.

St. Cloud, Grantsburg & Ashland, March 2, 1899, deed of conveyance.

Taylor's Falls & Lake Superior R. R., Nov. 12, 1898, deed of conveyance.

Stillwater & St. Paul R. R. March 2, 1899, deed of conveyance.

Duluth Short Line Ry., Nov. 11, 1898, deed of conveyance.

The Nebraska & Lake Superior R. R. incorporated by Act of Territorial Legislation May 23, 1857, but did no work. Act amended by state legislature of Minnesota March 8, 1861, incorporating the Lake Superior & Mississippi R. R. The St. Paul & Duluth R. R. Co. organized June 27, 1877, under general laws of 1876, acquiring all the rights of the Lake Superior & Mississippi R. R. Co. by mortgage foreclosure.

*Company Records.*

## IMPORTANT CHANGES DURING 1899.

The Duluth Short Line was merged into the St. P. & D. R. R. as of June 30, 1899, by deed of conveyance bearing date Nov. 11, 1898.

The St. Cloud, Grantsburg & Ashland R. R. was merged into the St. P. & D. R. R. as of June 30, 1899, by deed of conveyance bearing date of March 2, 1899.

The St. P. & D. R. R. Co. assumes the payment of the \$500,000 outstanding bonds, with interest, of the Duluth Short Line Ry. Co. From June 30, 1899, the St. P. & D. R. R. Co. will pay interest on Duluth Short Line Ry. bonds and discontinue paying rentals.

## IMPORTANT CHANGES DURING 1900.

June 15, 1900, the St. P. & D. Ry. Co. sold and transferred to the Northern Pacific Ry. Co. all its property and assets of every nature for the sum of \$2,795,824.51, the Northern Pacific Ry. Co. assuming all liens and all other indebtedness of the St. Paul & Duluth R. R. Co.

In order not to break the continuity of these reports the business from June 15 to June 30 is included in this report.

Other property, the earnings and expenses of which affect the General Balance Sheet:

U. S. Land Grant, 5 sections per mile, Act approved May 5, 1864, to State of Minnesota.

U. S. Land Grant extended to 10 sections per mile, Act approved March 3, 1865, to State of Minnesota.

Grant transferred by State of Minnesota to Lake Superior & Mississippi R. R., Act of Feb. 23, 1865.

Grant from State of Minnesota to Lake Superior & Mississippi R. R. Swamp Land Grant, 7 sections per mile, Act approved March 8, 1861.

Certain swamp lands transferred from Lake Superior & Mississippi to Taylor's Falls & Lake Superior R. R., lands on branch line, Act of March 9, 1875.

The St. Paul & Duluth R. R. Co. has made no detailed statement of its land grant transactions to this department, but from the Commissioner of Railroads of the United States report we obtain the following:

"By the acts of congress approved May 5, 1864, and July 13, 1886, the company received through the State of Minnesota a grant of 920,000 acres of land. St. Paul and Duluth, Minn., are the land-grant termini.

The records of the General Land Office show that to June 30, 1899, there had been patented to the company 860,844.09 acres of land, and 8,000 acres of railroad-indemnity lands had been restored to the public domain. The company reports that to June 30, 1899, it had acquired by United States patent 816,083.55 acres and by the state swamp land grant 694,399.07, making a total of 1,510,482.62 acres; sold from same 567,032.21, leaving the number of acres owned by the company 943,450.41, which amount was increased during the year by the cancellation of contracts for 10,141.14 acres.

The receipts during the year from the land department were \$208,525.13 and the expenses were \$41,057.90, while there are outstanding on account of time sales \$493,517.33. The average price at which the remaining lands are now held is \$5 per acre."

## WINONA BRIDGE R'Y CO.

Organized July 10, 1890, under the laws of the State of Minnesota.

## IMPORTANT CHANGES DURING 1899.

The interest coupons due Sept. 1st, and March 1st, 1899, cancelled by bond holders and the railway company thereby released from payment of same.

## CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Other Railroad Companies.—An agreement with each of the following railway companies: Chicago, Burlington & Railway Co.; Green Bay, Winona & St. Paul Ry. Co., and Winona & Western Ry. Co. Whereby each of these companies agree to pay the company for transportation over its lines: four dollars per car load for freight above fourth class; two dollars and a half for freight of fourth class or under; four cents per hundred pounds for freight in lots less than a car load, not however to exceed car load rates; twenty-five cents per passenger; no charge to be made for empty cars, engines, passenger cars and cabooses.

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*Company Records.*


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## WISCONSIN &amp; MICHIGAN.

Organized October 26, 1893, under the laws of Wisconsin.

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE  
STATE OF WISCONSIN.

Express Companies.—American Express Company, carry express on passenger trains, Nov., 1896, to Nov. 1, 1900.

Mails.—United States mails, July 1, 1899, to June 30, 1903.

Freight or Transportation Companies or Lines.—Agreement for interchange of freight business with M., St. P. & S. S. M. Ry., Ann Arbor R. R., C., M. & St. P. Ry.

Telegraph Companies.—Western Union Telegraph Co., 25-year lease of telegraph line.

Lake Michigan Car Ferry Trans. Co., 50-year contract for interchange of freight business from Sept. 1, 1896.

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 WHITCOMB & MORRIS.

Organized June 23, 1896, under the laws of the State of Wisconsin.

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 WISCONSIN CENTRAL.

Organized July 1, 1871, under the laws of the State of Wisconsin.

Other companies have been consolidated as follows:

Portage & Superior R. R. Co. organized under act of legislature approved April 9, 1866.

Winnebago & Lake Superior R. R. Co. organized under act of legislature approved April 6, 1866.

Manitowoc & Minnesota R. R. Co. organized under act of legislature approved March 6, 1868.

DATES AND AUTHORITY OF EACH CONSOLIDATION.

Portage & Superior R. R. Co. consolidated with the Winnebago & Lake Superior R. R. Co., forming Portage, Winnebago & Lake Superior R. R. Co. under act of legislature approved March 6, 1869. Name changed to Wisconsin Central R. R. Co. by act of legislature approved Feb. 4, 1871.

Manitowoc & Minnesota R. R. Co. consolidated with Wisconsin Central R. R. Co. under act of legislature approved March 24, 1871.

PROPERTY LEASED OR OTHERWISE ASSIGNED FOR OPERATION.

At various dates, prior to appointment of receivers on Sept. 27, 1893, the Wisconsin Central Company acquired capital stock of this company, which in the aggregate amounts to 20,000 shares (\$2,000,000.00) of preferred and 92,743½ shares (\$9,274,350) of common.

IMPORTANT CHANGES DURING 1899 IN WISCONSIN.

W. C. R. R. spurs to industries increased.....	5.98 miles
M. & S. W. spurs to industries increased .....	.39 miles
Total .....	6.37 miles

Issue of \$200,000 Receiver's Certificates due Nov. 15, 1897, renewed for one year, \$461,000 Receiver's Certificates, Equipment Series, issued.

*Company Records.*

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN, 1899.

Express Companies.—All business handled by the National Express Company in consideration of which they pay the receivers of the Wisconsin Central Company and Wisconsin Central Railroad Company a percentage of their gross earnings.

Mails.—Mails are transported in accordance with rules and regulations of the United States government post office department for compensation paid by the post office department, under routes Nos. 139017, 139015, 139071, 139082.

Sleeping Cars.—Sleeping cars are owned jointly with the Pullman Palace Car Co., and are operated by the latter over the lines of the Wisconsin Central Company and Wisconsin Central Railroad Company, between Chicago and Milwaukee and Ashland and Minneapolis.

WISCONSIN CENTRAL COMPANY.

Organized under the laws of Wisconsin June 17, 1887; under the laws of Minnesota June 30, 1888.

The Wisconsin Central Company is a consolidated corporation formed by the Wisconsin Central Company of Wisconsin, and the Minnesota, St. Croix & Wisconsin Railroad Company, a consolidated corporation under the laws of Wisconsin and Minnesota.

The Minnesota, St. Croix & Wisconsin Railroad Company was formed by the consolidation of the St. Croix & Chippewa Falls R. R. Co., a corporation of Wisconsin, and the St. Paul & St. Croix R. R. Co., a corporation of Minnesota.

DATE AND AUTHORITY OF EACH CONSOLIDATION.

The Wisconsin Central Company of Wisconsin and Minnesota, St. Croix & Wisconsin, May 31, 1888, under general laws of Wisconsin and Minnesota.

The St. Croix & Chippewa Falls and St. Paul & St. Croix, making the Minnesota, St. Croix & Wisconsin, June 28, 1884, under general laws of Wisconsin and Minnesota.

IMPORTANT CHANGES DURING 1900.

W. C. Co. spurs to industries increased .....	6.20 miles
C. W. & M. R. R. spurs to industries increased.....	.63 miles
Total .....	6.83 miles

Issue of \$1,480,050 Receivers' Certificates due Nov. 15, 1898, renewed for one year. \$253,668.80 Receivers' Certificates, Equipment Series, issued.

CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.

Express Companies.—All business handled by the National Express Company in consideration of which they pay the receivers a percentage of their gross earnings on same.

Mails.—Mails are transported in accordance with rules and regulations of the United States Post Office Department; compensation fixed by the United States Post Office Department under routes Nos. 135089, 139026, 139061, and 137071.

Sleeping Cars.—Sleeping cars are owned jointly with the Pullman Palace Car Company, by whom they are operated over the lines of the receivers of the Wisconsin Central Company and Wisconsin Central R. R. Co., between Chicago and Milwaukee and Ashland and Minneapolis.

WISCONSIN CENTRAL RAILWAY COMPANY.

Organized December 30, 1897, under the general laws of the State of Wisconsin.

Not strictly a re-organized company, but an independent company, which has purchased the railroads and properties of the Wisconsin Central Company, the Wisconsin Central R. R. Co., the Milwaukee & Lake Winnebago R. R. Co., the Chicago, Wisconsin & Minnesota R. R. Co. and the Packwaukee & Montello R. R. Co.

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*Company Records.*


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**IMPORTANT CHANGES DURING 1900.**

All extensions of road put in operation.  
7.45 miles main line and spurs.

The Wisconsin Central Railway Company is an independent company which was organized for the purpose of uniting in one company the railroads and properties of the Wisconsin Central Company and Wisconsin Central Railroad Company, Milwaukee & Lake Winnebago Railroad Company, Chicago, Wisconsin & Minnesota Railroad Company and Packwaukee & Montello Railroad Company. The receivers of the Wisconsin Central Co. and Wisconsin Central R. R. Co. were appointed by the United States circuit court for the eastern district of Wisconsin September 27, 1893, and took possession of the railroads and properties of these companies as of that date. At midnight on the 17th of July, 1899, the receivers surrendered possession of and ceased to operate the lines owned and controlled by those companies, and the Wisconsin Central Ry. Co. began to operate on that date, but under the authority of the United States circuit court for the eastern district of Wisconsin the company took the assets and assumed the liabilities of the receivers as of midnight between June 30th and July 1, 1899, the railroads and properties of the Wisconsin Central Company having been sold under decree of the court on July 7, 1899, and the property of the Wisconsin Central R. R. Co. having been transferred with that of the other companies mentioned above by deeds in which it was provided that the Wisconsin Central Railway Company receive all their assets and assume all their liabilities. The properties of the above companies were acquired by the issue of all the stocks and bonds of this company now outstanding.

This company's securities replace all securities of the above companies with the exception of those shown as still outstanding.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

**Express Companies.**—All business handled by the National Express Company in consideration of which they pay the Wis. Cent. Ry. Co. a percentage of their gross earnings on same.

**Mails.**—Mails are transported in accordance with rules and regulations of the United States Post Office Department; compensation fixed by the U. S. Post Office Dept. under routes Nos. 135089, 139017, 139061, 139026, 139071, 139082, 137071, 139045.

**Sleeping Cars.**—Sleeping cars are owned jointly with the Pullman Palace Car Company by whom they are operated over the lines of the Wisconsin Central Ry. Co. between Chicago and Milwaukee and Ashland and Minneapolis.

From the report of the Commissioner of Railroads for the United States we obtain the following:

"The original Wisconsin Central R. R. Co. was a reorganization, February 4, 1871, of the Portage, Winnebago & Superior R. R. Co. On January 4, 1879, default having been made in the payment of interest on its bonds, the trustees under the mortgage took possession of the property. On October 31, 1889, the property was again turned over to the company under a plan of reorganization, by the terms of which the trustees hold, under an irrevocable special trust until full interest is regularly paid on all bonds, substantially the entire issue of the capital stock of the company. The road was operated by the Northern Pacific R. R. Co. under lease from April 1, 1890, until September 27, 1893, when the lease was terminated by decree of the court for non-payment of rent.

The properties covered by the mortgage of the Wisconsin Central Company were sold July 7, 1899, to Messrs. George Coppel, John Crosby Brown and William L. Bull. The rights of the purchasers having been previously duly transferred to the Wisconsin Central Railway Co., a corporation formed under the laws of the State of Wisconsin, said sale was July 8, 1899, confirmed and conveyance pursuant thereof was made July 13, 1899, to the Wisconsin Central Railway Company.

By an act of congress approved May 5, 1864 (13 Stat., 66, sec.3), there was granted to the State of Wisconsin, to aid in the construction of a railroad "from Portage City, Berlin, Doty Island or Fond du Lac, as said State may determine, in a northwestern direction to Bayfield, and thence to Superior, on Lake Superior, every alternate section of public land designated by odd numbers, for ten sections in width on each side of said road," estimated by the General Land Office to include a grant of 1,800,000 acres of land. The beneficiary under this grant was the Portage, Winnebago & Superior Railroad Company (now Wisconsin Central Railway Company).

The records of the Land Office show that to June 30, 1899, there had been patented to the company 838,030.51 acres of land, and that 200,000 acres of railroad-indemnity lands located in Wisconsin had been restored to the public domain."

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*Company Records.*

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**WISCONSIN WESTERN (Successor to KICKAPOO VALLEY & NORTHERN).**

Organized November 17, 1899, under the laws of Wisconsin.

**CONTRACTS, AGREEMENTS, ETC., AFFECTING BUSINESS WITHIN THE STATE OF WISCONSIN.**

Express Companies.—25 cents per 100 pounds for carrying express matter.

Mails.—\$2,821.46 per year for mail service.

Freight or Transportation Companies or Lines.—Thirty per cent. of all joint freight earnings of C., M. & St. P. Ry. Co. and the W. W. R. R. Co. belong to the W. W. R. R. and 70 per cent. belong to the C., M. & St. P.

Arrangements with E. St. L., C., M. & St. P. and Ill. Cent. gives 11.34 per cent. to W. W., 35.14 per cent. to C., M. & St. P., and the remainder to the E. St. L. or Ill. Cent.

Arrangements with C. P. & St. L., R. I. & P., C., M. & St. P. and the W. W. give to first two joint 42.67 per cent., C., M. & St. P. 42.67 per cent., W. W. 14.27 per cent.

The Wisconsin Western Railroad is successor to the Kickapoo Valley & Northern Ry. Co.



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*Officers and Directors.*


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## OFFICERS AND DIRECTORS, 1899.

## ABBOTSFORD &amp; NORTHEASTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	Fred Rietbrock	Milwaukee, Wis.
Vice President .....	L. W. Halsey ..	Milwaukee, Wis.
Secretary .....	Geo. A. Burton	Milwaukee, Wis.
Treasurer .....	A. C. Rietbrock	Milwaukee, Wis.
General Solicitor .....	L. W. Halsey ..	Milwaukee, Wis.
Auditor .....	A. C. Rietbrock	Milwaukee, Wis.
General Manager .....	Fred Rietbrock ..	Milwaukee, Wis.
General Superintendent .....	Wm. L. Erbach	Athens, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Fred Rietbrock .....	Milwaukee, Wis.	Last Thurs., May, 1900.
L. W. Halsey .....	Milwaukee, Wis.	Last Thurs., May, 1900.
Geo. A. Burton .....	Milwaukee, Wis.	Last Thurs., May, 1900.
A. C. Rietbrock .....	Milwaukee, Wis.	Last Thurs., May, 1900.
Wm. L. Erbach .....	Athens, Wis. ...	Last Thurs., May, 1900.

Total number of stockholders at date of last election, 6.  
Date of last meeting of stockholders for election of directors, May 25, 1899.  
Pst office address of general office, Milwaukee, Wis.  
Post office address of operating office, Milwaukee, Wis.

*Officers and Directors.*

## AHTAPEE &amp; WESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board .....	E. Decker .....	Sturgeon Bay, Wis.
President .....	E. Decker .....	Sturgeon Bay, Wis.
Vice President .....	David Decker ...	Sturgeon Bay, Wis.
Secretary .....	E. Decker, Jr. ..	Sturgeon Bay, Wis.
Treasurer .....	E. Decker .....	Sturgeon Bay, Wis.
Auditor .....	E. Decker .....	Sturgeon Bay, Wis.
General Manager .....	E. Decker .....	Sturgeon Bay, Wis.
Traffic Manager .....	E. Decker .....	Sturgeon Bay, Wis.
General Passenger and Ticket Agent....	E. Decker .....	Sturgeon Bay, Wis.
Superintendent Telegraph and Express..	E. Decker .....	Sturgeon Bay, Wis.
General Baggage Agent .....	E. Decker .....	Sturgeon Bay, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
E. Decker .....	Algoma, Wis. ....	Until successor is chosen.
E. Decker, Jr. ....	Algoma, Wis. ....	Until successor is chosen.
M. C. Haney .....	Algoma, Wis. ....	Until successor is chosen.
David Decker .....	Sturgeon Bay, Wis.	Until successor is chosen.
L. M. Washburn .....	Sturgeon Bay, Wis.	Until successor is chosen.
John Pitzer .....	Iron River, Mich.	Until successor is chosen.
S. W. Champion .....	Green Bay, Wis. ..	Until successor is chosen.
Nathan Decker .....	Sturgeon Bay, Wis.	Until successor is chosen.

Total number of stockholders at date of last election, 14.

Date of last meeting of stockholders for election of directors, September 15, 1898.

Date of last meeting of stockholders for election of directors, Sept. 15, 1898.

Post office address of general office, Sturgeon Bay, Wis.

Post office address of operating office, Sturgeon Bay, Wis.

*Officers and Directors.*

## BIG FALLS R'Y CO.

## OFFICERS.

Title.	Name.	Address.
President .....	Jas. H. Wall .....	Oshkosh, Wis.
Vice President .....	Jas. A. Spaulding..	Oshkosh, Wis.
Secretary and Treasurer .....	Tom R. Wall .....	Oshkosh, Wis.
General Solicitor, Attorney or Counsel..	H. B. Harshaw ....	Oshkosh, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Jas. H. Wall .....	Oshkosh, Wis.	One year, or until successor is chosen.
Jas. A. Spaulding .....	Oshkosh, Wis.	One year, or until successor is chosen.
Thomas R. Wall .....	Oshkosh, Wis.	One year, or until successor is chosen.
Sophronia M. Wall ....	Oshkosh, Wis.	One year, or until successor is chosen.
H. B. Harshaw .....	Oshkosh, Wis.	One year, or until successor is chosen.

Total number of stockholders, 5.

Date of last meeting of stockholders for election of directors, August 21st, 1895.

Post office address of general office, Oshkosh, Wisconsin.

Post office address of operating office, Oshkosh, Wisconsin.

*Officers and Directors.*BAYFIELD HARBOR & GREAT WESTERN (OPERATED BY  
BAYFIELD TRANSFER).

## OFFICERS.

Title.	Name.	Address.
President .....	W. F. Dalrymple	Bayfield, Wis.
Vice President .....	G. H. Wahl .....	Milwaukee, Wis.
Secretary and General Manager .....	H. C. Hale .....	Bayfield, Wis.
Treasurer .....	W. F. Dalrymple	Bayfield, Wis.
General Solicitor .....	G. H. Noyes .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
W. F. Dalrymple .....	Bayfield, Wis. ..	June 1, 1901.
G. H. Wahl .....	Milwaukee, Wis.	June 1, 1900.
F. W. Dochery .....	Milwaukee, Wis.	June 1, 1900.
G. H. Noyes .....	Milwaukee, Wis.	June 1, 1901.
H. C. Hale .....	Bayfield, Wis. ..	June 1, 1901.

Total number of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, June 1, 1899.

Post office address of general office, Bayfield, Wis.

Post office address of operating office, Bayfield, Wis.

*Officers and Directors.*

## CHICAGO, MILWAUKEE &amp; ST. PAUL.

## OFFICERS.

Title.	Name.	Address.
President .....	Roswell Miller .....	Chicago, Ill.
Vice President .....	Frank S. Bond .....	New York, N. Y.
2d Vice President .....	A. J. Earling .....	Chicago, Ill.
Secretary .....	P. M. Myers .....	Milwaukee, Wis.
Treasurer .....	F. G. Ranney .....	Chicago, Ill.
Assistant Treasurer .....	A. McNab .....	Chicago, Ill.
Chief Engineer .....	D. J. Whitmore .....	Chicago, Ill.
General Counsel .....	Geo. R. Peck .....	Chicago, Ill.
Solicitor .....	Burton Hansen .....	Chicago, Ill.
Comptroller .....	E. Q. Sewall .....	Chicago, Ill.
General Auditor .....	W. N. D. Winne .....	Chicago, Ill.
General Manager .....	W. G. Collins .....	Chicago, Ill.
General Traffic Manager .....	A. C. Bird .....	Chicago, Ill.
General Passenger and Ticket Agent .....	G. H. Heafford .....	Chicago, Ill.
Ass't Gen. Passenger and Ticket Agent .....	G. S. Marsh .....	Chicago, Ill.
General Superintendent .....	H. R. Williams .....	Chicago, Ill.
Division Superintendents .....	16 in number .....	
Superintendent of Telegraph .....	W. J. Fry .....	Milwaukee, Wis.
General Baggage Agent .....	W. D. Carrick .....	Milwaukee, Wis.
Land Commissioner .....	H. G. Haugan .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Philip D. Armour .....	Chicago, Ill. ....	September, 1899.
August Belmont .....	New York, N. Y. ....	September, 1899.
Frank S. Bond .....	New York, N. Y. ....	September, 1899.
Charles H. Coster .....	New York, N. Y. ....	September, 1899.
Charles D. Dickey, Jr. ....	New York, N. Y. ....	September, 1899.
Peter Geddes .....	New York, N. Y. ....	September, 1899.
Frederick Layton .....	Milwaukee, Wis. ....	September, 1899.
Joseph Milbank .....	New York, N. Y. ....	September, 1899.
Roswell Miller .....	Chicago, Ill. ....	September, 1899.
Chas. W. Harkness .....	New York, N. Y. ....	September, 1899.
Wm. Rockefeller .....	New York, N. Y. ....	September, 1899.
Samuel Spencer .....	New York, N. Y. ....	September, 1899.
A. Van Santvoord .....	New York, N. Y. ....	September, 1899.

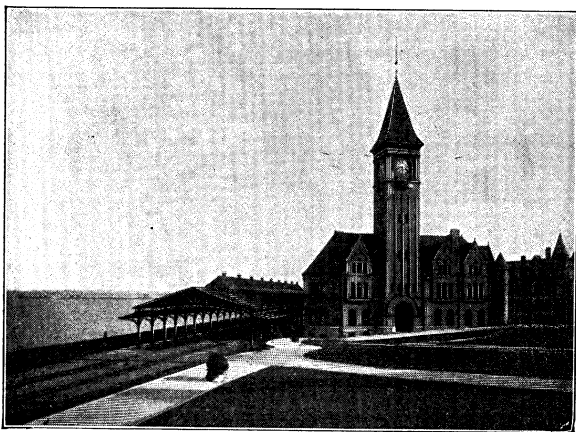
Total number of stockholders at date of last election, 5,526.

Date of last meeting of stockholders for election of directors, Sept. 17, 1898.

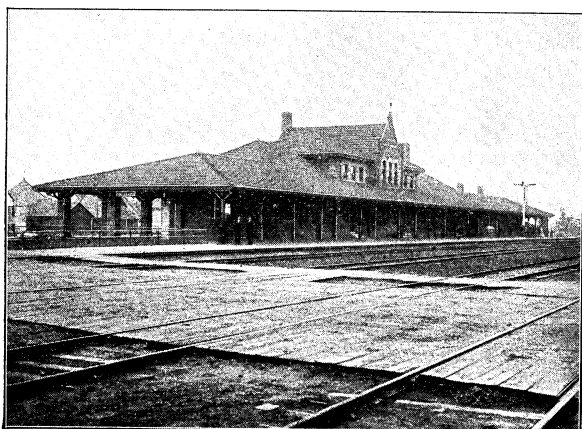
Post office address of general office, Chicago, Ill.

Post office address of operating office, Chicago, Ill.





CHICAGO & NORTHWESTERN RAILWAY.  
DEPOT, MILWAUKEE.



CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RY.  
DEPOT, EAU CLAIRE.

*Officers and Directors.*

## CHICAGO &amp; NORTHWESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board .....	Albert Keep .....	Chicago, Ill.
President .....	Marvin Hughitt .....	Chicago, Ill.
Vice President .....	M. L. Sukes .....	New York, N. Y.
2nd Vice President .....	M. M. Kirkman .....	Chicago, Ill.
3rd Vice President .....	Hira mR. M'Cullough .....	Chicago, Ill.
Secretary .....	M. L. Sukes .....	New York, N. Y.
Treasurer .....	Samuel O. Howe .....	New York, N. Y.
Chief Engineer .....	John E. Blunt .....	Chicago, Ill.
General Counsel .....	Lloyd W. Bowers .....	Chicago, Ill.
Auditor .....	Joseph B. Redfield .....	Chicago, Ill.
General Manager .....	John M. Whitman .....	Chicago, Ill.
General Traffic Manager .....	H. R. McCullough .....	Chicago, Ill.
General Freight Agent .....	M. Hughitt, Jr. ....	Chicago, Ill.
General Passenger Agent .....	Warren B. Kinskern .....	Chicago, Ill.
General Ticket Agent .....	Warren B. Kinskern .....	Chicago, Ill.
General Superintendent .....	Sherburne Sanborn .....	Chicago, Ill.
Division Superintendents .....	Thomas A. Lawson .....	Chicago, Ill.
	W. E. Morse .....	Chicago, Ill.
	W. B. Linsley .....	Escanaba, Mich.
	Robert A. Cowan .....	Baraboo, Wis.
	Charles H. Hartley .....	Kaukauna, Wis.
Superintendent of Telegraph .....	Geo. H. Thayer .....	Chicago, Ill.
General Baggage Agent .....	Nathaniel A. Phillips .....	Chicago, Ill.
Land Commissioner .....	J. F. Cleveland .....	Chicago, Ill.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Byron L. Smith .....	Chicago, Ill. ....	June, 1902.
Cyrus H. McCormick .....	Chicago, Ill. ....	June, 1902.
F. W. Vanderbilt .....	New York, N. Y. ....	June, 1902.
W. K. Vanderbilt .....	New York, N. Y. ....	June, 1902.
H. McK. Twombly .....	New York, N. Y. ....	June, 1902.
John I. Blair .....	Blairstown, N. J. ....	June, 1902.
David P. Kimball .....	Boston, Mass. ....	June, 1900.
Chauncey M. Depew .....	New York, N. Y. ....	June, 1900.
Samuel F. Barger .....	New York, N. Y. ....	June, 1900.
Albert Keep .....	Chicago, Ill. ....	June, 1900.
James E. Fargo .....	New York, N. Y. ....	June, 1900.
M. L. Sykes .....	New York, N. Y. ....	June, 1900.
Oliver Ames .....	Boston, Mass. ....	June, 1901.
Zenas Crane .....	Dalton, Mass. ....	June, 1901.
James Stillman .....	New York, N. Y. ....	June, 1901.
Marvin Hughitt .....	Chicago, Ill. ....	June, 1901.
N. K. Fairbank .....	Chicago, Ill. ....	June, 1901.

Total number of stockholders at date of last election, 4,694.

Date of last meeting of stockholders for election of directors, June 1, 1899.

Post office address of general office, Chicago and New York.

Post office address of operating office, Chicago.



*Officers and Directors.*

## CHICAGO, ST. PAUL, MINNEAPOLIS &amp; OMAHA.

## OFFICERS.

Title.	Name.	Address.
President .....	Marvin Hughitt .....	Chicago, Ill.
Vice President .....	Martin Sykes .....	New York, N. Y.
Secretary .....	E. E. Woodman .....	Hudson, Wis.
Treasurer .....	S. O. Howe .....	New York, N. Y.
Assistant Treasurer .....	R. H. Williams .....	
Local Treasurer .....	C. P. Nash .....	St. Paul, Minn.
Chief Engineer .....	C. W. Johnson .....	St. Paul, Minn.
General Counsel .....	Thomas Wilson .....	St. Paul, Minn.
Attorney .....	L. K. Luse .....	St. Paul, Minn.
Comptroller .....	L. A. Robinson .....	St. Paul, Minn.
Auditor of Expenditures .....	W. H. Stennett .....	Chicago, Ill.
General Manager .....	W. A. Scott .....	St. Paul, Minn.
General Traffic Manager .....	Jas. T. Clark .....	St. Paul, Minn.
General Passenger Agent .....	T. W. Teasdale .....	St. Paul, Minn.
General Freight Agent .....	H. M. Pearce .....	St. Paul, Minn.
Ass't Gen. Freight Agent .....	E. B. Ober .....	St. Paul, Minn.
General Superintendent .....	J. C. Stuart .....	St. Paul, Minn.
Division Superintendent .....	L. F. Slaker .....	St. Paul, Minn.
Division Superintendents .....	A. W. Trenholm .....	Itasca, Wis.
	Hugh Spencer .....	Mankato, Minn.
	H. S. Saynes .....	Omaha, Neb.
Purchasing Agent .....	W. H. S. Wright .....	St. Paul, Minn.
Superintendent of Telegraph .....	H. C. Hope .....	St. Paul, Minn.
General Baggage Agent .....	E. F. Weede .....	St. Paul, Minn.
Car Accountant .....	A. Drezmal .....	St. Paul, Minn.
General Claim Agent .....	E. L. Peele .....	St. Paul, Minn.
Land Commissioner .....	G. W. Bell .....	Hudson, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Marvin Hughitt .....	Chicago, Ill. ....	June, 1902.
Byron L. Smith .....	Chicago, Ill. ....	June, 1902.
Chauncey M. Depew .....	New York, N. Y. .	June, 1902.
David P. Kimball .....	Boston, Mass. ....	June, 1902.
Horace G. Burt .....	Omaha, Neb. ....	June, 1902.
Martin L. Sykes .....	New York, N. Y. .	June, 1900.
Thomas Wilson .....	St. Paul, Minn. ....	June, 1900.
John M. Whitman .....	Chicago, Ill. ....	June, 1900.
John A. Humbird .....	St. Paul, Minn. ....	June, 1900.
Cornelius Vanderbilt .....	New York, N. Y. .	June, 1901.
Wm. K. Vanderbilt .....	New York, N. Y. .	June, 1901.
Albert Keep .....	Chicago, Ill. ....	June, 1901.
Hamilton McK. Twombly .....	New York, N. Y. .	June, 1901.

Total number of stockholders at date of last election, 1,132.

Date of last meeting of stockholders for election of directors, June 3, 1899.

Post office address of general office, St. Paul, Minn.

Post office address of operating office, St. Paul, Minn.

*Officers and Directors.*

## CHICAGO, BURLINGTON &amp; QUINCY.

## OFFICERS.

Title.	Name.	Address.
President .....	Geo. B. Harris.....	Chicago, Ill.
Secretary .....	T. S. Howland.....	Boston, Mass.
Treasurer .....	J. C. Peasley.....	Chicago, Ill.
Assistant Treasurer .....	A. G. Stanwood.....	Boston, Mass.
Chief Engineer .....	W. L. Breckinridge.....	Chicago, Ill.
General Solicitor .....	J. W. Losey.....	La Crosse, Wis.
General Auditor .....	C. I. Sturgis.....	Chicago, Ill.
General Manager .....	W. C. Brown.....	Chicago, Ill.
Asst. General Passenger Agent .....	Geo. P. Lyman.....	St. Paul, Minn.
Asst. General Freight Agent .....	Geo. P. Lyman.....	St. Paul, Minn.
Superintendent .....	D. Cunningham.....	La Crosse, Wis.
General Baggage Agent .....	E. A. Ladd.....	Chicago, Ill.

## DIRECTORS.

Name.	Address.	Date of Expiration of Term.
F. W. Hunnewell.....	Boston, Mass. ....	2d Wednesday in June, 1900.
C. J. Paine .....	Boston, Mass. ....	2d Wednesday in June, 1900.
J. M. Forbes.....	Boston, Mass. ....	2d Wednesday in June, 1900.
Geo. P. Gardner.....	Boston, Mass. ....	2d Wednesday in June, 1900.
T. J. Coolidge.....	Manchester, Mass. ....	2d Wednesday in June, 1900.
C. E. Perkins.....	Burlington, Ia.....	2d Wednesday in June, 1900.
Geo. B. Laines.....	Chicago, Ill.....	2d Wednesday in June, 1900.

Total number of stockholders at date of last election, 23.

Date of last meeting of stockholders for election of directors, June 14, 1899.

Post office address of general office, 209 Adams St., Chicago, Ill.

Post office address of operating office, La Crosse, Wis.

*Officers and Directors.*

## CHICAGO, LAKE SHORE &amp; EASTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	C. H. Ackert....	Chicago, Ill.
Secretary and Treasurer.....	F. D. Raymond..	Chicago, Ill.
Cashier .....	James M. Wait..	Chicago, Ill.
Chief Engineer.....	Geo. A. Pruden..	South Chicago, Ill.
General Solicitor.....	K. K. Knapp....	Chicago, Ill.
Comptroller .....	F. W. Sutton....	Chicago, Ill.
General Manager.....	C. H. Ackert....	Chicago, Ill.
General Superintendent.....	M. M. Richey....	South Chicago, Ill.
Division Superintendent.....	L. W. McNamee..	Bay View, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
C. H. Ackert.....	Chicago, Ill.....	December, 1899.
John Lambert.....	Chicago, Ill.....	December, 1899.
E. H. Gary.....	Chicago, Ill.....	December, 1899.
C. P. Coffin.....	Chicago, Ill.....	December, 1899.
E. Shearson.....	Chicago, Ill.....	December, 1899.
F. D. Raymond.....	Chicago, Ill.....	December, 1899.
D. H. Bacon.....	Chicago, Ill.....	December, 1899.

Total number of stockholders at date of last election. —  
 Date of last meeting of stockholders for election of directors, Dec., 1898.  
 Post office address of general office, Chicago, Ill.  
 Post office address of operating office, Chicago, Ill.

*Officers and Directors.*

CHICAGO & LAKE SUPERIOR.

OFFICERS.

Title.	Name.	Address.
President .....	George Dow.....	.....
Vice President.....	A. H. Hadfield.....	.....
Secretary .....	Charles Friend.....	.....
Treasurer .....	Robe Dow.....	.....
Gen'l Solicitor, Atty. or Counsel.....	Charles Friend.....	.....
Auditor .....	James P. Brown.....	.....
General Manager.....	Henry Herman.....	.....
General Passenger Agent.....	Henry Herman.....	.....

DIRECTORS.

Name.	Address.	Expiration of Term.
George Dow .....	Cambridge, Wis. ....	.....
George Dow, Jr.....	Madison, Wis.....	.....
Robe Dow.....	Stoughton, Wis.....	.....
Henry Herman.....	Milwaukee, Wis.....	.....
Charles Friend.....	Milwaukee, Wis.....	.....
A. C. Amundson.....	Milwaukee, Wis.....	.....
A. H. Hadfield.....	Cambridge, Wis.....	.....

Total number of stockholders at date of last election, 7.  
 Post office address of general office, Milwaukee, Wis.  
 Post office address of operating office, Milwaukee, Wis.

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*Officers and Directors.*


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CHICAGO, MADISON & NORTHERN (OPERATED BY ILLINOIS  
CENTRAL),

## OFFICERS.

Title.	Name.	Address.
President .....	Stuyvesant Fish....	New York, N. Y.
Vice President .....	J. C. Welling .....	Chicago, Ill.
2nd Vice President.....	J. T. Harahan.....	Chicago, Ill.
Secretary .....	W. G. Bruen.....	Chicago, Ill.
Treasurer .....	E. T. H. Gibson.....	New York, N. Y.
Attorney .....	B. J. Stevens.....	Madison, Wis.

## DIRECTORS.

Names of Directors.	Address.	Expiration of Term.
Stuyvesant Fish.....	New York, N. Y.	October, 1900.
B. F. Ayer.....	Chicago, Ill. ....	October, 1900.
J. C. Welling.....	Chicago, Ill. ....	October, 1899.
J. T. Harahan.....	Chicago, Ill. ....	October, 1899.
W. G. Bruen .....	Chicago, Ill. ...	October, 1900.

Total number of stockholders at date of last election. 6.

Date of last meeting of stockholders for election of directors, Oct. 11, 1898.

Post office address of general office, Central Station, Chicago, Ill.

Post office address of operating office, Central Station, Chicago, Ill.

*Officers and Directors.*

## CHICAGO, WISCONSIN &amp; MINNESOTA R. R. CO.

## OFFICERS.

Title.	Name.	Address.
President .....	Edwin H. Abbot...	Boston, Mass.
1st Vice President.....	Howard Morris....	Milwaukee, Wis.
Secretary .....	Charles M. Morris..	Milwaukee, Wis.
Treasurer .....	Henry Mitchell....	Milwaukee, Wis.
Assistant Treasurer .....	Robt. Toombs.....	Boston, Mass.
Auditor .....	Geo. R. Brackett..	Milwaukee, Wis.
Assistant Secretary.....	J. H. Wellman.....	Boston, Mass.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Edwin H. Abbott.....	Cambridge, Mass.	October, 1899.
Colgate Hoyt.....	New York, N. Y..	October, 1899.
R. G. Hazard.....	Peace Dale, R. I.	October, 1900.
F. T. Gates.....	New York, N. Y..	October, 1900.
Geo. R. Brackett.....	Boston, Mass.....	October, 1901.
J. H. Wellman.....	Boston, Mass.....	October, 1901.

Total number of stockholders at date of last election, 7.

Date of last meeting of stockholders for election of directors, October 26, 1898.

Post office address of general office, Milwaukee, Wis.

*Officers and Directors.*

## CHIPPEWA RIVER &amp; MENOMONIE.

## OFFICERS.

Title.	Name.	Address.
President .....	F. Weyerhauser...	Chippewa Falls, Wis.
Vice President.....	O. H. Ingram.....	Chippewa Falls, Wis.
Secretary.....	Wm. Irvine.....	Chippewa Falls, Wis.
Treasurer .....	U. G. Norton.....	Chippewa Falls, Wis.
Auditor .....	James Ritchie.....	Chippewa Falls, Wis.
General Manager.....	H. G. Chichester.	Chippewa Falls, Wis.
General Superintendent.....	Wm. Irvine.....	Chippewa Falls, Wis.
Division Superintendent.....	John Dunlavy....	Apollonia, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
F. Weyerhauser.....	St. Paul, Minn.....	June, 15, 1900.
O. H. Ingram.....	Eau Claire, Wis.....	June, 15, 1900.
U. G. Norton.....	Winona, Minn.....	June, 15, 1900.
Wm. A. Rust.....	Eau Claire, Wis.....	June, 15, 1900.
Wm. Irvine.....	Chippewa Falls, Wis..	June, 15, 1900.

Total number of stockholders, 5.

Date of last meeting of stockholders for election of directors, June 15, 1899.

Post office address of general office, Chippewa Falls, Wis.

Post office address of operating office, Apollonia, Wis.

*Officers and Directors.*

## DRUMMOND &amp; SOUTH WESTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	John D. Owen.....	Eau Claire, Wis.
Vice President.....	Aloney J. Rust.....	Eau Claire, Wis.
Secretary and Treasurer.....	Frank Drummond..	Eau Claire, Wis.
General Manager.....	Frank Drummond..	Drummond, Wis.
General Superintendent.....	John G. Riggs.....	Drummond, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
John S. Owen.....	Eau Claire, Wis..	Unlimited.
A. J. Rust.....	Eau Claire, Wis..	Unlimited.
Ralph E. Rust.....	Eau Claire, Wis..	Unlimited.
Frank Drummond.....	Drummond, Wis..	Unlimited.
John G. Riggs.....	Drummond, Wis..	Unlimited.

Total number of stockholders at date of last election, 6.

Date of last meeting of stockholders for election of directors, Nov. 11, 1898.

Post office address of general office, Drummond, Wis.

Post office address of operating office, Drummond, Wis.



*Officers and Directors.*

## DULUTH, SOUTH SHORE &amp; ATLANTIC.

## OFFICERS.

Title.	Name.	Address.
President .....	Gen. Sam'l Thomas...	New York, N. Y.
1st Vice President.....	Thos. E. Shaughnessy	Montreal, Can.
2nd Vice President.....	Wm. T. Fitch.....	Marquette, Mich.
Secretary and Assistant Treasurer.....	Geo. H. Church.....	New York, N. Y.
Treasurer .....	E. W. Allen.....	Marquette, Mich.
General Attorney.....	A. B. Eldridge.....	Marquette, Mich.
Attorney .....	A. E. Miller.....	Marquette, Mich.
Auditor .....	A. E. Delf.....	Marquette, Mich.
General Manager.....	Wm. T. Fitch.....	Marquette, Mich.
Chief Engineer.....	H. J. Payne.....	Marquette, Mich.
General Freight Agent.....	Wm. Orr.....	Marquette, Mich.
General Passenger Agent.....	G. W. Hibbard.....	Marquette, Mich.
Asst. General Freight Agent.....	W. W. Walker.....	Duluth, Minn.
Asst. General Passenger Agent.....	T. H. Larke.....	Duluth, Minn.
General Superintendent.....	C. E. Lytle.....	Marquette, Mich.
Assistant Superintendent.....	A. M. Sutherland.....	Thomaston, Mich.
Land Commissioner.....	E. W. Mac Pherran...	Marquette, Mich.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Gen. Samuel Thomas.....	New York, N. Y.	June 1, 1900.
Sir William C. Van Horne.....	Montreal, Can....	June 1, 1900.
Richard B. Angus.....	Montreal, Can....	June 1, 1900.
Rt. Hon. Donald Alexander, Baron.....	London, England	June 1, 1900.
Thos. G. Shaughnessy.....	Montreal, Can....	June 1, 1900.
John W. Sterling.....	New York, N. Y.	June 1, 1900.
Walter Watson.....	New York, N. Y.	June 1, 1900.
Thos. W. Pearsall.....	Black Rock, Conn.	June 1, 1900.
Geo. H. Church.....	New York, N. Y.	June 1, 1900.
James O. Bloss.....	New York, N. Y.	June 1, 1900.
William B. Fitch.....	Marquette, Mich.	June 1, 1900.

Total number of stockholders at date of last election, 310.

Date of last meeting of stockholders for election of directors, June 1, 1899.

Post office address of general office, Marquette, Mich.

Post office address of operating office, Marquette, Mich.

*Officers and Directors.*

## DULUTH SHORT LINE.

## OFFICERS.

Title.	Name.	Address.
President .....	R. S. Hayes.....	New York City.
Vice President.....	A. B. Plough.....	St. Paul, Minn.
Secretary and Treasurer.....	A. V. Williams.....	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
R. S. Hayes.....	New York City.	June 5, 1899.
A. B. Plough.....	St. Paul, Minn.	June 5, 1899.
D. A. McKinlay.....	St. Paul, Minn.	June 5, 1899.
A. V. Williams.....	St. Paul, Minn.	June 5, 1899.
J. D. Armstrong.....	St. Paul, Minn.	June 5, 1899.

Total number of stockholders at date of last election, 6.

Date of last meeting of stockholders for election of directors, June 6th, 1898.

Post office address of general office, St. Paul, Minn.

Post office address of operating office, St. Paul, Minn.

*Officers and Directors.*

## DULUTH, SUPERIOR &amp; WESTERN TERMINAL CO.

## OFFICERS.

Title.	Name.	Address.
President .....	D. M. Philbin.....	Duluth, Minn.
Secretary and Treasurer.....	E. Sawyer.....	St. Paul, Minn.
Chief Engineer.....	Jno. T. Stevens.....	St. Paul, Minn.
Auditor .....	R. I. Farrington.....	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
D. M. Philbin.....	Duluth, Minn.....	When successor is elected.
Cortland Betts.....	New York, N. Y.....	When successor is elected.
Arthur Starke.....	New York, N. Y.....	When successor is elected.
C. A. Loughlin.....	New York, N. Y.....	When successor is elected.
Benjamin Whitley.....	New York, N. Y.....	When successor is elected.

Total number of stockholders at date of last election, 6.

Date of last meeting of stockholders for election of directors, July 18, 1898.

Post office address of general office, St. Paul, Minn.

Post office address of operating office, West Superior, Wis.

*Officers and Directors.*

DUNBAR & WAUSAUKEE.

OFFICERS.

Title.	Name.	Address.
President .....	W. C. Culbertson...	Girard, Pa.
Vice President.....	J. W. Wells.....	Menominee, Mich.
Secretary and Treasurer.....	J. A. Culbertson...	Menominee, Mich.
Superintendent .....	A. C. Wells.....	Dunbar, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
W. C. Culbertson.....	Girard, Pa.....	When successor elected.
J. W. Wells.....	Menominee, Mich	When successor elected.
J. A. Culbertson.....	Menominee, Mich	When successor elected.

Total number of stockholders at date of last election, 4.  
 Date of last meeting of stockholders for election of directors, original.  
 Post office address of general office, Menominee, Mich.  
 Post office address of operating office, Dunbar, Wis.

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*Officers and Directors.*


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## EASTERN RAILWAY CO. OF MINNESOTA.

## OFFICERS.

Title.	Name.	Address.
President .....	Samuel Hill.....	Minneapolis, Minn.
Vice President.....	J. N. Hill.....	Duluth, Minn.
2nd Vice President.....	D. M. Philbin...	Duluth, Minn.
Secretary and Treasurer.....	E. Sawyer.....	St. Paul, Minn.
Chief Engineer.....	John T. Stevens	St. Paul, Minn.
General Solicitor.....	M. D. Grover...	St. Paul, Minn.
Attorney or Counsel.....	J. A. Murphy...	West Superior, Wis.
Comptroller .....	R. I. Farrington	St. Paul, Minn.
General Auditor.....	J. L. Cramer...	St. Paul, Minn.
General Freight Agent.....	John C. Eden...	St. Paul, Minn.
General Passenger and Ticket Agent....	F. B. Whitney..	St. Paul, Minn.
Superintendent .....	G. T. Slade.....	West Superior, Wis.
Superintendent of Telegraph.....	E. J. Little.....	St. Paul, Minn.
General Baggage Agent.....	S. A. Smart.....	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Time.
James J. Hill.....	St. Paul, Minn.....	When successor elected.
W. P. Clough.....	St. Paul, Minn.....	When successor elected.
M. D. Grover.....	St. Paul, Minn.....	When successor elected.
Samuel Hill.....	Minneapolis, Minn.	When successor elected.
James N. Hill.....	Duluth, Minn.....	When successor elected.

Total number of stockholders at date of last election, 6.

Date of last meeting of stockholders for election of directors, Oct. 19, 1898.

Post office address of general office, St. Paul, Minn.

Post office address of operating office, Duluth, Minn.

*Officers and Directors.*

## FAIRCHILD &amp; NORTH EASTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	N. C. Foster.....	Fairchild, Wis.
Vice President.....	E. J. Foster.....	Fairchild, Wis.
Secretary and Treasurer .....	G. A. Foster.....	Fairchild, Wis.
Auditor .....	John T. Fatzinger....	Fairchild, Wis.
General Manager.....	N. C. Foster.....	Fairchild, Wis.
Traffic Manager .....	John T. Fatzinger ...	

## GREEN BAY &amp; WESTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	S. S. Palmer.....	New York, N. Y.
Vice President.....	J. A. Jordan.....	Green Bay, Wis.
Secretary and Treasurer.....	Mark T. Cox.....	New York, N. Y.
General Auditor.....	J. C. Thurman.....	Green Bay, Wis.
General Manager.....	J. A. Jordan.....	Green Bay, Wis.
General Passenger Agent.....	J. B. Last.....	Green Bay, Wis.
General Ticket Agent.....	J. B. Last.....	Green Bay, Wis.
Superintendent .....	F. B. Seymour.....	Green Bay, Wis.
General Baggage Agent.....	J. B. Last.....	Green Bay, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
S. S. Palmer.....	Princeton, N. J...	March 9, 1900.
C. L. Blair.....	New York, N. Y...	March 9, 1900.
Wm. J. Hunt.....	New York, N. Y...	March 9, 1900.
Mark T. Cox.....	Morristown, N. J.	March 9, 1900.
J. A. Jordan.....	Green Bay, Wis..	March 9, 1900.

Total number of stockholders at date of last election, 151.

Date of last meeting of stockholders for election of directors, March 9, 1899.

Post office address of general office, Green Bay, Wis.

Post office address of operating office, Green Bay, Wis.

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*Officers and Directors.*


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**HAWTHORNE, NEBAGAMON & SUPERIOR.**
**OFFICERS.**

Title.	Name.	Address.
Chairman of the Board.....	E. Rutledge.....	Chippewa Falls, Wis.
President .....		Chippewa Falls, Wis.
Vice President.....	F. Weyerhauser....	St. Paul, Minn.
Secretary and Treasurer.....	E. L. Ainsworth.....	Chippewa Falls, Wis.
Comptroller and Traffic Manager.....	F. L. Wilkins.....	Lake Nebagamon, Wis
General Manager.....	J. P. Weyerhauser.	Lake Nebagamon, Wis
General Superintendent.....	William O. Neil...	Lake Nebagamon, Wis

**DIRECTORS.**

Name.	Address.	Expiration of Term.
F. Weyerhauser.....	St. Paul, Minn.....	Sept., 1899.
E. Rutledge .....	Chippewa Falls, Wis.	Sept., 1899.
Jno. Weyerhauser.....	Lake Nebagamon.....	Sept., 1899.
E. L. Ainsworth.....	Chippewa Falls.....	Sept., 1899.

Total number of stockholders at date of last election, 4.  
 Date of last meeting of stockholders for election of directors, September, 1898.  
 Post office address of general office, Chippewa Falls, Wis.  
 Post office address of operating office, Lake Nebagamon, Wis.

*Officers and Directors.*

## HAZELHURST &amp; SOUTH EASTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	W. C. Yawkey.....	Detroit, Mich.
Vice President.....	C. C. Yawkey.....	Hazelhurst, Wis.
Secretary .....	L. H. Wheeler.....	Hazelhurst, Wis.
Treasurer .....	W. H. Yawkey.....	Detroit, Mich.
Gen. Sol. Attorney or Counsel.....	John Barnes.....	Rhineland, Wis.
General Manager.....	C. C. Yawkey.....	Hazelhurst, Wis.
General Freight Agent.....	John W. Freedom....	Hazelhurst, Wis.
Auditor .....	L. H. Wheeler.....	Hazelhurst, Wis.
General Passenger Agent.....	C. C. Yawkey.....	Hazelhurst, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
W. C. Yawkey.....	Hazelhurst, Wis.	January 30, 1900.
C. C. Yawkey.....	Hazelhurst, Wis.	January 30, 1900.
W. H. Yawkey.....	Hazelhurst, Wis.	January 30, 1900.
L. H. Wheeler.....	Hazelhurst, Wis.	January 30, 1900.
John W. Freedom.....	Hazelhurst, Wis.	January 30, 1900.

Total number of stockholders at date of last election, 5.

Date of last meeting for election of directors, January 20, 1899.

Post office address of general office, Hazelhurst, Wis.

Post office address of operating office, Hazelhurst, Wis.



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*Officers and Directors.*


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## IOLA &amp; NORTHERN.

## OFFICERS.

Title.	Name.	Address.
President .....	Jas. Walker, Jr. ....	New York, N. Y.
Auditor and Cashier.....	J. C. Thurman.....	Green Bay, Wis.
General Manager.....	J. A. Jordan.....	Green Bay, Wis.
General Passenger Agent.....	J. B. Last.....	Green Bay, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Jas. Walker, Jr.....	New York, N. Y. ....	.....
S. W. Champion.....	Green Bay, Wis. ....	.....
F. B. Seymour.....	Green Bay, Wis. ....	.....
B. A. Hegemen.....	New York, N. Y. ....	.....

Total number of stockholders at date of last election, 6.  
 Date of last meeting of stockholders for election of directors, Sept. 12, 1895.  
 Post office address of general office, Green Bay, Wis.  
 Post office address of operating office, Green Bay, Wis.

*Officers and Directors.*

## KEWAUNEE, GREEN BAY &amp; WESTERN. .

## OFFICERS.

Title.	Name.	Address.
President .....	S. S. Palmer.....	New York, N. Y.
Vice President.....	W. W. Cargill.....	La Crosse, Wis.
Secretary and Treasurer.....	Mark T. Cox.....	New York, N. Y.
General Auditor.....	J. C. Thurman.....	Green Bay, Wis.
General Manager.....	J. A. Jordan.....	Green Bay, Wis.
General Ticket Agent.....	J. B. Last.....	Green Bay, Wis.
Superintendent .....	F. B. Seymour.....	Green Bay, Wis.
General Baggage Agent.....	J. B. Last.....	Green Bay, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
S. S. Palmer.....	Princeton, N. J....	July 13, 1899.
Mark T. Cox.....	Morristown, N. J..	July 13, 1899.
C. L. Blair.....	New York, N. Y....	July 13, 1899.
J. A. Jordon.....	Green Bay, Wis....	July 13, 1899.
W. W. Cargill.....	La Crosse, Wis....	July 13, 1899.

Total number of stockholders at date of last election, 45.

Date of last meeting of stockholders for election of directors, July 13, 1898.

Post office address of general office, Green Bay, Wis.

Post office address of operating office, Green Bay, Wis.

*Officers and Directors.*

## KICKAPOO VALLEY &amp; NORTHERN.

## OFFICERS.

Title.	Name.	Address.
President .....	Charles P. Cogswell	Norwich, Conn.
Vice President .....	W. H. Thompson ...	Wauzeka, Wis.
Secretary .....	Harry L. Butler ...	Madison, Wis.
Treasurer .....	C. P. Cogswell .....	Norwich, Conn.
Auditor .....	Wm. Silge .....	Wauzaukee, Wis.
Receiver .....	E. A. Wadhams .....	Milwaukee, Wis.
General Manager .....	W. H. Thompson ...	Wauzeka, Wis.
General Superintendent .....	W. H. Thompson ...	Wauzeka, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Charles P. Cogswell .....	Norwich, Conn. ...	.....
Samuel McCord .....	Milwaukee, Wis. ...	.....
Gardner Green, Jr. ....	Norwich, Conn. ...	.....
U. M. Hartwell .....	Somerville, N. J. ...	.....
Harry L. Butler .....	Madison, Wis. ....	.....
A. Matheson .....	Elkhorn, Wis. ....	.....
W. H. Thompson .....	Wauzeka, Wis. ....	.....

Total number of stockholders at date of last election. 11.

Date of last meeting of stockholders for election of directors, June 22, 1894.

Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Wauzeka, Wis.

*Officers and Directors.*

## LAKE SUPERIOR TERMINAL &amp; TRANSFER RY CO.

## OFFICERS.

Title.	Name.	Address.
President .....	J. N. Hill .....	Duluth, Minn.
Vice President .....	A. B. Plough ..	St. Paul, Minn.
Secretary and Treasurer .....	F. J. Shephard ..	St. Paul, Minn.
Superintendent .....	J. D. Finn .....	West Superior, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
W. A. Scott .....	St. Paul, Minn. ....	October 7, 1899.
J. W. Kendricks .....	St. Paul, Minn. ....	October 7, 1899.
A. B. Plough .....	St. Paul, Minn. ....	October 7, 1899.
W. T. Fitch .....	Marquette, Mich. ....	October 7, 1899.
J. N. Hill .....	Duluth, Minn. ....	October 7, 1899.
G. T. Slade .....	West Superior, Wis. ....	October 7, 1899.

Total number of stockholders at date of last election, 12.

Date of last meeting of stockholders for election of directors, Oct. 1, 1898.

Post office address of general office, St. Paul, Minn.

Post office address of operating office, West Superior, Wis.

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*Officers and Directors.*


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## MILWAUKEE &amp; SUPERIOR.

## OFFICERS.

Title.	Name.	Address.
President .....	Henry Lindsey .....	Milwaukee, Wis.
Vice President .....	Geo. I. Lindsey .....	Milwaukee, Wis.
Secretary .....	M. H. Brand .....	Milwaukee, Wis.
Treasurer .....	Henry Herman .....	Milwaukee, Wis.
Auditor .....	Geo. W. Wilson .....	Milwaukee, Wis.
General Manager .....	Henry Herman .....	Milwaukee, Wis.
General Freight Agent .....	A. M. Campbell .....	Milwaukee, Wis.
Superintendent .....	Geo. A. Nettleton .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Henry Lindsey .....	Milwaukee, Wis.	October 28, 1899.
Geo. I. Lindsey .....	Milwaukee, Wis.	October 28, 1899.
Henry Herman .....	Milwaukee, Wis.	October 28, 1899.
M. H. Brand .....	Milwaukee, Wis.	October 28, 1899.
Otto R. Hansen .....	Milwaukee, Wis.	October 28, 1899.

Total number of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, Oct. 30, 1897.

Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Milwaukee, Wis.

*Officers and Directors.*

## MARSHFIELD &amp; SOUTH EASTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	Walter A. Scott ....	Chicago, Ill.
Vice President .....	Thomas B. Scott ..	Chicago, Ill.
Secretary .....	H. C. Ross .....	Chicago, Ill.
Treasurer .....	W. A. Scott .....	Chicago, Ill.
Local Treasurer .....	Edw. L. Reese .....	Marshfield, Wis.
General Manager .....	Chas. H. Grundy ..	Marshfield, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Walter A. Scott .....	Chicago, Ill. ....	October 10, 1899.
Thos. A. Scott .....	Chicago, Ill. ....	October 10, 1899.
H. C. Ross .....	Chicago, Ill. ....	October 10, 1899.
Chas. H. Grundy .....	Marshfield, Wis.	October 10, 1899.
Jerome R. North .....	Green Bay, Wis.	October 10, 1899.

Post office address of general office, Marshfield, Wis.

Date of last meeting of stockholders for election of directors, October 11, 1898.

Post office address of operating office, Marshfield, Wis.

Total number of stockholders at date of last election, 5.

*Officers and Directors.*

## MARINETTE, TOMAHAWK AND WESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board .....	William H. Bradley.	Tomahawk, Wis.
President .....	William H. Bradley.	Tomahawk, Wis.
1st Vice President .....	A. H. Woodworth ...	Tomahawk, Wis.
2nd Vice President .....	W. T. Watkins .....	Minneapolis, Minn.
Secretary .....	Frank G. Starke ...	Tomahawk, Wis.
Treasurer .....	Frank G. Starke ...	Tomahawk, Wis.
Gen'l Solic., Attorney or Counsel.....	A. H. Woodworth ...	Tomahawk, Wis.
Auditor .....	Frank G. Starke ...	Tomahawk, Wis.
General Manager .....	Wm. H. Bradley .....	Tomahawk, Wis.
General Passenger Agent .....	Wm. E. Jeannot ...	Tomahawk, Wis.
Superintendent of Telegraph.....	Wm. E. Jeannot ...	Tomahawk, Wis.
Superintendent of Express .....	Wm. E. Jeannot ...	Tomahawk, Wis.
General Baggage Agent .....	Wm. E. Jeannot ...	Tomahawk, Wis.
Chief Engineer .....	Wm. E. Jeannot ...	Tomahawk, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
James W. Bradley .....	Milwaukee, Wis.	Sept. 13, 1899.
Wm. H. Bradley .....	Tomahawk, Wis.	Sept. 13, 1899.
Frank G. Stark .....	Tomahawk, Wis.	Sept. 13, 1899.
A. H. Woodworth .....	Tomahawk, Wis.	Sept. 13, 1899.
Wm. F. Bradley .....	Tomahawk, Wis.	Sept. 13, 1899.

Total number of stockholders at date of last election, 11.  
Date of last meeting of stockholders for election of directors, Sept. 14, 1898.  
Post office address of general office, Tomahawk, Wis.  
Post office address of operating office, Tomahawk, Wis.

*Officers and Directors.*

MINNESOTA & WISCONSIN.

OFFICERS.

Title.	Name.	Address.
Chairman of the Board .....	E. D. Buffington	Stillwater, Minn.
President .....	E. D. Buffington	Stillwater, Minn.
Vice President .....	G. D. Braman ...	Boston, Mass.
Secretary .....	Jas. W. Jones ...	St. Paul, Minn.
Treasurer .....	Herman Scheffer	St. Paul, Minn.
Gen'l Solicitor, Atty. or Counsel.....	C. A. Severance	St. Paul, Minn.
Auditor .....	Jas. W. Jones ...	St. Paul, Minn.
General Manager .....	E. D. Buffington	Stillwater, Minn.
Traffic Manager, Purchasing Agent, Asst. Secretary and Auditor .....	C. H. Cannon ...	Spring Valley, Wis.
Superintendent and Road Master.....	Jas. Minoque ....	Spring Valley, Wis.

DIRECTORS.

Name.	Address.	Chippewa Falls, Wis.
E. D. Buffington .....	Stillwater, Minn.	November 12, 1899.
Maurice Auerback .....	St. Paul, Minn. ...	November 12, 1899.
G. D. Braman .....	Boston, Mass. ....	November 12, 1899.
D. M. Sabin .....	Ashland, Wis. ....	November 12, 1899.
C. A. Severance .....	St. Paul, Minn. ...	November 12, 1899.
N. W. Jordon .....	Boston, Mass. ....	November 12, 1899.
H. L. Hacton .....	New York, N. Y. .	November 12, 1899.

Total number of stockholders at date of last election, 5.  
 Date of last meeting of stockholders for election of directors, Nov. 12, 1898.  
 Post office address of general office, Spring Valley, Wis.  
 Post office address of operating office, Spring Valley, Wis.



*Officers and Directors.*

## MINNEAPOLIS, ST. PAUL &amp; SAULT STE. MARIE.

## OFFICERS.

Title.	Name.	Address.
President .....	Thomas Lowry .....	Minneapolis, Minn.
Vice President .....	John Martin .....	Minneapolis, Minn.
Secretary and Treasurer .....	Charles F. Clement ..	Minneapolis, Minn.
Assistant Treasurer .....	Wyatt C. Stone .....	Minneapolis, Minn.
Chief Engineer .....	Thomas Green .....	Minneapolis, Minn.
General Solicitor .....	Alfred H. Bright .....	Minneapolis, Minn.
Assistant Solicitor .....	Henry B. Dike .....	Minneapolis, Minn.
Auditor .....	C. W. Gardner .....	Minneapolis, Minn.
Assistant Auditor .....	Edward F. Stone .....	Minneapolis, Minn.
General Manager .....	Edmund Pennington ..	Minneapolis, Minn.
General Freight Agent .....	W. L. Martin .....	Minneapolis, Minn.
Asst. Gen. Freight Agent .....	E. D. Parker .....	St. Paul, Minn.
General Passenger Agent .....	W. R. Galloway .....	Minneapolis, Minn.
Asst. Gen. Passenger Agent .....	W. S. Thorn .....	St. Paul, Minn.
Division Superintendent .....	George R. Pennington	Minneapolis, Minn.
Division Superintendent .....	Charles P. Eckels .....	Enderlin, N. D.
Supt. of Car Service .....	H. L. Hunter .....	Minneapolis, Minn.
Supt. of Telegraph .....	Harry A. Tuttle .....	Minneapolis, Minn.
Land Commissioner .....	David Casseday .....	Minneapolis, Minn.
Purchasing Agent .....	J. E. Shaughnessy .....	Minneapolis, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Thomas Lowry .....	Minneapolis, Minn.	1st Tuesday in June, 1900.
John Martin .....	Minneapolis, Minn.	1st Tuesday in June, 1900.
W. D. Washburn .....	Minneapolis, Minn.	1st Tuesday in June, 1900.
J. S. Pillsbury .....	Minneapolis, Minn.	1st Tuesday in June, 1900.
Sir W. C. Van Horne .....	Montreal, Canada	1st Tuesday in June, 1900.
Thos. G. Shaughnessy .....	Montreal, Canada	1st Tuesday in June, 1900.
C. H. Pettit .....	Minneapolis, Minn.	1st Tuesday in June, 1900.
F. H. Peavey .....	Minneapolis, Minn.	1st Tuesday in June, 1900.
Wm. B. Dean .....	St. Paul, Minn. . .	1st Tuesday in June, 1900.
W. H. Bradley .....	Tomahawk, Wis. . .	1st Tuesday in June, 1900.
R. B. Angus .....	Montreal, Canada	1st Tuesday in June, 1900.

Total number of stockholders at date of last election, 110.

Date of last meeting of stockholders for election of directors, June 6, 1899.

Post office address of general office, Minneapolis, Minn.

Post office address of operating office, Minneapolis, Minn.

*Officers and Directors.*

## MILWAUKEE &amp; LAKE WINNEBAGO.

## OFFICERS.

Title.	Name.	Address.
President .....	Edwin H. Abbot .....	Boston, Mass.
1st Vice President and Treasurer.....	Howard Morris .....	Milwaukee, Wis.
Secretary .....	Chas. M. Morris .....	Milwaukee, Wis.
Asst. Secretary and Asst. Treasurer.....	Henry Mitchell .....	Boston, Mass.
Auditor .....	Robt. Toombs .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Edwin H. Abbot .....	Cambridge, Mass.	October, 1899.
R. G. Hazard .....	Peace Dale, R. I.	October, 1899.
Charles Ray .....	Milwaukee, Wis.	October, 1899.
Geo. R. Brackett .....	Boston, Mass. ....	October, 1899.
Henry Mitchell .....	Boston, Mass. ....	October, 1899.
J. H. Wellman .....	Boston, Mass. ....	October, 1899.
Costello C. Converse .....	Boston, Mass. ....	October, 1899.

Total number of stockholders at date of last election, 44.

Date of last meeting of stockholders for election of directors, October 26, 1898.

Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Milwaukee, Wis.

*Officers and Directors.*

## MINNEAPOLIS, ST. PAUL &amp; ASHLAND.

## OFFICERS.

Title.	Name.	Address.
President .....	J. W. Cochrane ..	Ashland, Wis.
Vice President .....	S. G. Cook .....	Minneapolis, Minn.
Secretary .....	C. H. Pratt .....	Minneapolis, Minn.
Chief Engineer .....	Daniel Taylor .....	Ashland, Wis.
General Superintendent .....	L. B. Eagan .....	Ashland, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
E. A. Shores .....	Ashland, Wis. ....	.....
C. H. Pratt .....	Minneapolis, Minn. ....	.....
S. G. Cook .....	Minneapolis, Minn. ..	.....
Thomas Bardon .....	Ashland, Wis. ....	.....
Edward Ellis .....	Ashland, Wis. ....	.....
L. B. Eagan .....	Ashland, Wis. ....	.....
J. W. Cochran .....	Ashland, Wis. ....	.....
R. L. McCormack .....	Hayward, Wis. ....	.....
S. S. Fifield .....	Ashland, Wis. ....	.....
J. W. Perley .....	St. Croix Falls, Wis. ....	.....
D. W. Mowatt .....	Ashland, Wis. ....	.....
J. S. Borteous .....	Minneapolis, Minn. ..	.....
F. R. Pettibone .....	Minneapolis, Minn. ..	.....

Total number of stockholders at date of last election, 37.

Date of last meeting of stockholders for election of directors, January 2, 1897.

Post office address of general office, Minneapolis, Minn.

Post office address of operating office, Ashland, Wis.

*Officers and Directors.*

## NORTHERN PACIFIC.

## OFFICERS.

Title.	Name.	Address.
President .....	C. S. Mellen .....	St. Paul, Minn.
1st Vice President .....	D. S. Lamont .....	New York, N. Y.
2d Vice President and General Manager .....	J. W. Kendrick .....	St. Paul, Minn.
3d Vice President and Gen. Traffic Mgr. ....	J. M. Hannaford .....	St. Paul, Minn.
Secretary and Assistant Treasurer .....	Geo. H. Earl .....	New York, N. Y.
Treasurer .....	Chas. A. Clark .....	St. Paul, Minn.
Chief Engineer .....	E. H. McHenry .....	St. Paul, Minn.
General Counsel .....	Francis L. Stetson .....	New York, N. Y.
General Counsel .....	Chas. W. Bunn .....	St. Paul, Minn.
Comptroller .....	Henry A. Gray .....	St. Paul, Minn.
Auditor .....	M. P. Martin .....	St. Paul, Minn.
Gen. Passenger and Ticket Agent .....	Charles S. Fee .....	St. Paul, Minn.
General Superintendent .....	M. C. Kimberly .....	St. Paul, Minn.
Superintendent of Telegraph .....	O. C. Green .....	St. Paul, Minn.
Division Superintendents .....	11 in number .....	
General Baggage Agent .....	v. H. Lowe .....	St. Paul, Minn.
Land Commissioner .....	W. H. Phipps .....	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
E. D. Adams .....	New York, N. Y.	October, 1899.
Dumont Clark .....	New York, N. Y.	October, 1899.
C. H. Coster .....	New York, N. Y.	October, 1899.
R. M. Galloway .....	New York, N. Y.	October, 1899.
Geo. F. Baker .....	New York, N. Y.	October, 1899.
Brayton Ives .....	New York, N. Y.	October, 1899.
D. W. James .....	New York, N. Y.	October, 1899.
D. S. Lamont .....	New York, N. Y.	October, 1899.
C. S. Mellen .....	New York, N. Y.	October, 1899.
J. S. Kennedy .....	St. Paul, Minn.	October, 1899.
W. G. Oakman .....	New York, N. Y.	October, 1899.
O. H. Payne .....	New York, N. Y.	October, 1899.
Samuel Spencer .....	New York, N. Y.	October, 1899.
James Stillman .....	New York, N. Y.	October, 1899.
Eben B. Thomas .....	New York, N. Y.	October, 1899.

Total number of stockholders at date of last election, 19.

Date of last meeting of stockholders for election of directors, October 4, 1898.

Post office address of general office, St. Paul, Minn.

Post office address of operating office, St. Paul, Minn.

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*Officers and Directors.*


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## NORTHWESTERN COAL R'Y CO.

## OFFICERS.

Title.	Name.	Address.
President .....	E. N. Saunders .....	St. Paul, Minn.
Vice President .....	M. H. Taylor .....	Erie, Pa.
Secretary and Treasurer .....	E. S. Shepley .....	St. Paul, Minn.
Chief Engineer .....	C. J. A. Morris .....	St. Paul, Minn.
General Superintendent .....	Wm. P. Barrett .....	Superior, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
E. N. Saunders .....	St. Paul, Minn. ....	Sept. 7, 1899.
M. H. Taylor .....	Erie, Pa. ....	Sept. 7, 1899.
Joseph Stickney .....	New York, N. Y. . .	Sept. 7, 1899.
E. R. Holden .....	New York, N. Y. . .	Sept. 7, 1899.
Wm. Endicott, Jr. ....	Boston, Mass. ....	Sept. 7, 1899.
Robert I. Jenks .....	New York, N. Y. . .	Sept. 7, 1899.
E. S. Shepley .....	St. Paul, Minn. ....	Sept. 7, 1899.

Total number of stockholders at date of last election, 18.

Date of last meeting of stockholders for election of directors, Sept. 1, 1898.

Post office address of general office, Superior, Wis.

Post office address of operating office, Superior, Wis.

*Officers and Directors.*

OSHKOSH TRANSPORTATION CO. (OPERATED BY C. & N. W.).

OFFICERS.

Title.	Name.	Address.
President .....	Howard Morris ....	Milwaukee, Wis.
Secretary .....	E. G. Greenlief ....	Milwaukee, Wis.
Treasurer .....	Howard Morris ....	Milwaukee, Wis.
General Solicitor, Attorney or Counsel..	Howard Morris ....	Milwaukee, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
Howard Morris .....	Milwaukee, Wis. ....	2d Monday, Jan., 1900.
E. B. Greenlief .....	Milwaukee, Wis. ....	2d Monday, Jan., 1900.
Thos. H. Gill .....	Milwaukee, Wis. ....	2d Monday, Jan., 1900.

Total number of stockholders at date of last election, 3.  
 Date of last meeting of stockholders for election of director, January 9, 1899.  
 Post office address of general office, Milwaukee, Wisconsin.

*Officers and Directors.*

## PACKWAUKEE &amp; MONTELLO RAILROAD COMPANY.

## OFFICERS.

Title.	Name.	Address.
President and Treasurer .....	Edwin H. Abbott ..	Boston, Mass.
Vice President and Ass't Treasurer.....	Frederick Abbott ..	Milwaukee, Wis.
Secretary .....	Howard Morris .....	Milwaukee, Wis.
Auditor .....	Root. Toombs .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Edwin H. Abbott .....	Cambridge, Mass. ....	October, 1899.
Caas. M. Morris .....	Milwaukee, Wis. ....	October, 1899.
E. B. Greenleaf .....	Milwaukee, Wis. ....	October, 1899.
Thos. H. Gill .....	Milwaukee, Wis. ....	October, 1899.
Howard Morris .....	Milwaukee, Wis. ....	October, 1899.

Total number of stockholders at date of last election, 7.

Date of last meeting of stockholders for election of directors, October 27, 1897.

Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Milwaukee, Wis.

*Officers and Directors.*

## RICE LAKE, DALLAS &amp; MENOMONIE.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board .....	George Fuller .....	Rice Lake, Wis.
President .....	George Fuller .....	Rice Lake, Wis.
Vice President .....	George M. Huss .....	Chicago, Ill.
Secretary and Treasurer .....	J. E. Horsman .....	Rice Lake, Wis.
Cashier and Auditor .....	Stuart J. Fuller .....	Rice Lake, Wis.
Chief Engineer .....	George M. Huss .....	Chicago, Ill.
General Solicitor .....	S. E. Hall .....	Chicago, Ill.
General Manager .....	George Fuller .....	Rice Lake, Wis.
Traffic Manager .....	George Fuller .....	Rice Lake, Wis.
Gen. Passenger and Ticket Agent.....	George Fuller .....	Rice Lake, Wis.
General Superintendent .....	George Fuller .....	Rice Lake, Wis.
Superintendent of Express .....	S. A. Davis .....	St. Paul, Minn.
General Baggage Agent .....	George Fuller .....	Rice Lake, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
George Fuller .....	Rice Lake, Wis.....	Till election of successor.
J. E. Horsman .....	Rice Lake, Wis.....	Till election of successor.
H. M. Temple .....	St. Paul, Minn. ....	Till election of successor.
Geo. M. Huss .....	Chicago, Ill. ....	Till election of successor.
R. U. Barbour .....	Cleveland, Ohio ....	Till election of successor.

Total number of stockholders at date of last election, 8.

Date of last meeting of stockholders for election of directors, May 6, 1899.

Post office address of general office, Rice Lake, Wis.

Post office address of operating office, Rice Lake, Wis.



*Officers and Directors.*

## ST. CLOUD, GRANTSBURG &amp; ASHLAND RAILROAD COMPANY.

## OFFICERS.

Title.	Name.	Address.
President .....	R. S. Hayes .....	New York, N. Y.
Vice President .....	A. B. Plough .....	St. Paul, Minn.
Secretary and Treasurer .....	A. V. Williams ...	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
R. S. Hayes .....	New York, N. Y. ....	June 5, 1900.
A. B. Plough .....	St. Paul, Minn. ....	June 5, 1900.
A. V. Williams .....	St. Paul, Minn. ....	June 5, 1900.
James Smith, Jr. ....	St. Paul, Minn. ....	June 5, 1900.
J. D. Armstrong .....	St. Paul, Minn. ....	June 5, 1900.
D. A. McKinlay .....	St. Paul, Minn. ....	June 5, 1900.
W. N. Schoff .....	St. Paul, Minn. ....	June 5, 1900.

Total number of stockholders at last election, 18.

Date of last meeting of stockholders for election of directors, June 6, 1899.

Post office address of general office, Grantsburg, Wis.

Post office address of operating office, St. Paul, Minn.

*Officers and Directors.*

WEST RANGE.

DIRECTORS.

Title.	Name.	Address.
President .....	Henry Sherry .....	Neenah, Wis.
Secretary, Treasurer and Gen. Manager	E. P. Sherry .....	Neenah, Wis.

Post office address of general office, Neenah, Wis.  
 Post office address of operating office, Mineral Lake, Wis.

ST. PAUL & DULUTH.

OFFICERS.

Title.	Name.	Address.
President .....	R. S. Hayes .....	New York, N. Y.
Vice President and General Manager...	A. B. Plough .....	St. Paul, Minn.
Secretary and Treasurer .....	A. V. Williams .....	St. Paul, Minn.
Asst. Treasurer and Asst. Secretary....	F. S. Rollins .....	New York, N. Y.
General Solicitors .....	Hadley & Armstrong;	St. Paul, Minn.
Assistant Solicitor, &c.....	Julian T. Davis .....	New York, N. Y.
Auditor .....	D. A. McKinlay .....	St. Paul, Minn.
General Freight Agent .....	W. W. Broughton .....	St. Paul, Minn.
General Passenger Agent .....	C. E. Stone .....	St. Paul, Minn.
General Superintendent .....	E. L. Brown .....	St. Paul, Minn.
Purchasing agent .....	W. N. Schoff .....	St. Paul, Minn.
Superintendent of Telegraph .....	J. B. Michaels .....	St. Paul, Minn.
Asst. Land Commissioner .....	W. P. Trowbridge .....	St. Paul, Minn.
Chief Engineer .....	C. J. A. Morris .....	St. Paul, Minn.
Advisory Counsel .....	James Smith, Jr. ....	St. Paul, Minn.

DIRECTORS.

Name.	Address.	Expiration of Term.
John L. Ricker .....	New York, N. Y. ....	October 12, 1899.
A. B. Plough .....	St. Paul, Minn. ....	October 12, 1899.
R. S. Hayes .....	New York, N. Y. ....	October 11, 1900.
Thomas Denny .....	New York, N. Y. ....	October 11, 1900.
W. R. Merriam .....	St. Paul, Minn. ....	October 11, 1900.
G. G. Haven, Jr. ....	New York, N. Y. ....	October 10, 1901.
C. S. Day .....	New York, N. Y. ....	October 10, 1901.
A. H. Stevens .....	New York, N. Y. ....	October 10, 1901.

Total number of stockholders at date of last election, 1141.  
 Date of last meeting of stockholders for election of directors, October 13, 1898.  
 Post office address of general office, St. Paul, Minn.  
 Post office address of operating office, St. Paul, Minn.

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*Officers and Directors.*


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## WINONA BRIDGE R'Y CO.

## OFFICERS.

Title.	Name.	Address.
President .....	M. G. Norton .....	Winona, Minn.
Vice President .....	J. A. Jordan .....	Green Bay, Wis.
Secretary .....	H. W. Weiss .....	Chicago, Ill.
Treasurer .....	H. W. Lamberton .....	Winona, Minn.
Assistant Secretary .....	Thomas Simpson .....	Winona, Minn.
Chief Engineer .....	S. D. Purdy .....	La Crosse, Wis.
General Solicitor, Attorney or Counsel.	Thomas Simpson .....	Winona, Minn.
Division Superintendent .....	D. Cunningham .....	La Crosse, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Mark T. Cox .....	New York, N. Y. . . . .	July, 6, 1900.
J. A. Jordan .....	Green Bay, Wis. . . . .	July, 6, 1900.
S. S. Palmer .....	New York, N. Y. . . . .	July, 6, 1900.
Geo. B. Harris .....	Chicago, Ill. . . . .	July, 6, 1900.
J. C. Peasley .....	Chicago, Ill. . . . .	July, 6, 1900.
M. G. Norton .....	Winona, Minn. . . . .	July, 6, 1900.
H. W. Lamberton .....	Winona, Minn. . . . .	July, 6, 1900.
V. Simpson .....	Winona, Minn. . . . .	July, 6, 1900.
Daniel Cunningham .....	St. Paul, Minn. . . . .	July, 6, 1900.

Total number of stockholders at date of last election, 13.

Date of last meeting of stockholders for election of directors, June 7, 1899.

Post office address of general office, Winona, Minn.

Post office address of operating office, Winona, Minn.

*Officers and Directors.*

## WISCONSIN &amp; MICHIGAN.

## OFFICERS.

Title.	Name.	Address.
President .....	S. M. Fisher .....	Chicago, Ill.
Vice President .....	J. J. Coleman .....	Chicago, Ill.
Treasurer .....	S. M. Fisher .....	Chicago, Ill.
Chief Engineer .....	B. C. Gowen .....	Peshtigo, Wis.
Comptroller .....	W. H. Howe .....	Peshtigo, Wis.
General Manager .....	J. J. Coleman .....	Chicago, Ill.
Superintendent of Telegraph .....	T. E. Corrigan .....	Peshtigo, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
S. M. Fisher .....	Chicago, Ill. ....	Jan. 18, 1899.
J. N. Falthorn .....	Chicago, Ill. ....	Jan. 18, 1899.
J. Carnes .....	Chicago, Ill. ....	Jan. 18, 1899.
J. J. Coleman .....	Chicago, Ill. ....	Jan. 18, 1899.

Total number of stockholders at date of last election, 46.

Date of last meeting of stockholders for election of directors, Jan. 21.

Post office address of general office, Chicago, Ill.

Post office address of operating office, Peshtigo, Wis.

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*Officers and Directors.*


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## WHITCOMB &amp; MORRIS.

## OFFICERS.

Title.	Name.	Address.
President .....	J. H. Jenkins .....	Oshkosh, Wis.
Vice President .....	D. C. Buckstaff .....	Oshkosh, Wis.
Secretary and Treasurer .....	H. J. Sprague .....	Morris, Wis.
General Manager .....	H. J. Sprague .....	Morris, Wis.

## OFFICERS.

Name.	Address.	Expiration of Term.
H. J. Sprague .....	Morris, Wis. ....	.....
J. H. Jenkins .....	Oshkosh, Wis. ....	.....
Chas. Barber .....	Oshkosh, Wis. ....	.....
D. C. Buckstaff .....	Oshkosh, Wis. ....	.....

Total number of stockholders at date of last election, 4.

Date of last meeting of stockholders for election of directors, June 23, 1899.

Post office address of general office, Morris, Wis.

Post office address of operating office, Morris, Wis.

*Officers and Directors.*

## WISCONSIN CENTRAL.

## DIRECTORS.

Title.	Name.	Address.
Receiver .....	H. F. Whitcomb .....	Milwaukee, Wis.
Receiver .....	Howard Morris .....	Milwaukee, Wis.
President .....	Edwin H. Abbott .....	Boston, Mass.
Secretary .....	Howard Morris .....	Milwaukee, Wis.
Assistant Treasurer .....	Frederick Abbott .....	Milwaukee, Wis.
General Solicitor .....	Howard Morris .....	Milwaukee, Wis.
Attorney .....	Thomas H. Gill .....	Milwaukee, Wis.
Auditor .....	Robt. Toombs .....	Milwaukee, Wis.
General Manager .....	H. F. Whitcomb .....	Milwaukee, Wis.
General Passenger Agent .....	J. C. Pond .....	Milwaukee, Wis.
General Superintendent .....	S. J. Collins .....	Milwaukee, Wis.
Division Superintendent .....	F. H. Marsh .....	Waukesha, Wis.
Division Superintendent .....	A. R. Horn .....	Stevens Point, Wis.
Superintendent of Telegraph .....	P. W. Drew .....	Milwaukee, Wis.
Land Commissioner .....	Frederick Abbott .....	Milwaukee, Wis.
Cashier .....	W. R. Hancock .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Isaac O. Chick .....	Boston, Mass. ....	May, 1900.
Robt. O. Fuller .....	Boston, Mass. ....	May, 1900.
Edwin H. Abbott .....	Cambridge, Mass. ..	May, 1900.
Howard Morris .....	Milwaukee, Wis. ....	May, 1901.
R. G. Hazard .....	Peace Dale, R. I. ..	May, 1901.
H. G. Vaughan .....	Boston, Mass. ....	May, 1901.
Charles R. Batt .....	Boston, Mass. ....	May, 1902.
J. H. Wellman .....	Boston, Mass. ....	May, 1902.
G. R. Brackett .....	Boston, Mass. ....	May, 1902.

Total number of stockholders at date of last election, 10.

Date of last meeting of stockholders for election of directors, May 25, 1899.

Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Milwaukee, Wis.

*Officers and Directors.*

## WISCONSIN CENTRAL.

## OFFICERS.

Title.	Name.	Address.
Receiver .....	H. F. Whitcomb ...	Milwaukee, Wis.
Receiver .....	Howard Morris .....	Milwaukee, Wis.
President .....	A. H. Hardy .....	Boston, Mass.
Vice President .....	Frederick Abbott .....	Milwaukee, Wis.
Secretary .....	Howard Morris .....	Milwaukee, Wis.
Cashier .....	W. R. Hancock .....	Milwaukee, Wis.
Chief Engineer .....	Robt. B. Tweedy .....	Milwaukee, Wis.
General Solicitor .....	Howard Morris .....	Milwaukee, Wis.
Comptroller .....	Robt. Toombs .....	Milwaukee, Wis.
Assistant Secretary .....	J. H. Wellman .....	Boston, Mass.
General Manager .....	H. F. Whitcomb .....	Milwaukee, Wis.
General Freight Agent .....	Burton Johnson .....	Milwaukee, Wis.
Asst. General Freight Agent .....	C. E. Wilson .....	Milwaukee, Wis.
Asst. General Freight Agent .....	J. S. Talbot .....	Milwaukee, Wis.
General Passenger Agent .....	James C. Pond .....	Milwaukee, Wis.
General Superintendent .....	S. J. Collins .....	Milwaukee, Wis.
Division Superintendent .....	T. H. Marsh .....	Waukesha, Wis.
Division Superintendent .....	A. R. Horn .....	Stevens Point, Wis.
Superintendent of Telegraph .....	P. W. Drew .....	Milwaukee, Wis.
Car Service Agent .....	H. G. Earl .....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Howard Morris .....	Milwaukee, Wis. ..	October, 1899.
Henry F. Whitcomb .....	Milwaukee, Wis. ..	October, 1899.
R. G. Hazard .....	Peace Dale, R. I. ..	October, 1899.
Henry Sawyer .....	Boston, Mass. ....	October, 1899.
Alpheus Hardy .....	Boston, Mass. ....	October, 1900.
Chas. R. Batt .....	Boston, Mass. ....	October, 1900.
J. H. Wellman .....	Boston, Mass. ....	October, 1900.
Geo. R. Brackett .....	Boston, Mass. ....	October, 1900.
Frederick Abbott .....	Milwaukee, Wis. ..	October, 1901.
Geo. W. Johnson .....	Greenfield, Mass. ..	October, 1901.
E. B. Greenleaf .....	Milwaukee, Wis. ..	October, 1901.
Henry Mitchell .....	Boston, Mass. ....	October, 1901.

Total number of stockholders at date of last election, 13.

Date of last meeting of stockholders for election of directors, Oct. 26, 1898.

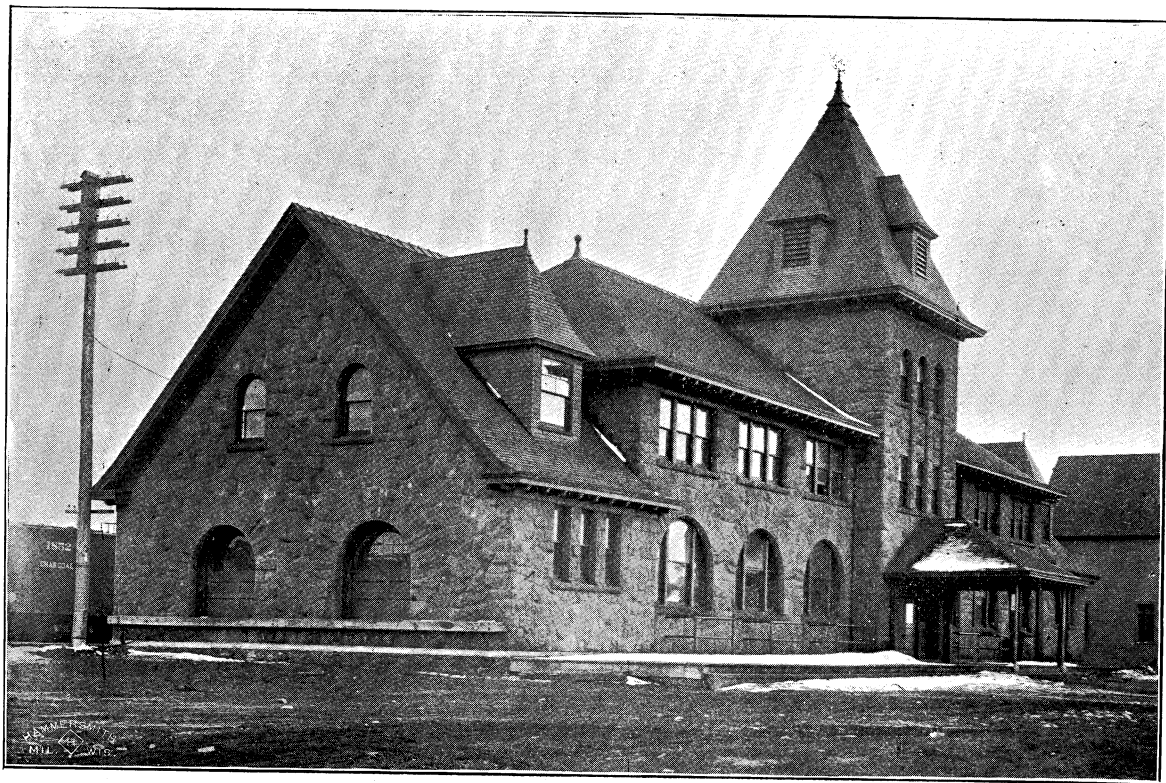
Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Milwaukee, Wis.

WALHBURN, BAYFIELD AND IRON RIVER RAILWAY  
COMPANY.

## OFFICERS.

Title.	Name.	Address.
Receiver .....	E. B. Lincoln .....	Washburn .....



WISCONSIN CENTRAL RAILWAY—DEPOT AT WAUKESHA,





*Officers and Directors.*

## OFFICERS AND DIRECTORS, 1900.

## ABBOTSFORD &amp; NORTHEASTERN.

## OFFICERS.

Title.	Name.	Address.
President and General Manager.....	Fred Rietbrock.....	Milwaukee, Wis.
Vice President and General Solicitor....	L. W. Halsey.....	Milwaukee, Wis.
Secretary .....	Thos. H. Gill.....	Milwaukee, Wis.
Treasurer and Auditor.....	A. C. Rietbrock....	Milwaukee, Wis.
General Superintendent.....	Wm. L. Erbach....	Athens, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Fred Rietbrock.....	Milwaukee, Wis.....	Last Thurs. of May, 1901.
L. W. Halsey.....	Milwaukee, Wis.....	Last Thurs. of May, 1901.
Thos. H. Gill.....	Milwaukee, Wis.....	Last Thurs. of May, 1901.
A. C. Rietbrock.....	Milwaukee, Wis.....	Last Thurs. of May, 1901.
Wm. L. Erbach.....	Athens, Wis.....	Last Thurs. of May, 1901.

Total number of stockholders at date of last election, 6.  
 Date of last meeting of stockholders for election of directors, May, 31, 1900.  
 Post office address of general office, Milwaukee, Wis.  
 Post office address of operating office, Milwaukee, Wis.

*Officers and Directors.*

## AHNAPEE &amp; WESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board, President and Treasurer .....	E. Decker.....	Sturgeon Bay, Wis.
1st Vice President, Gen. Manager, etc..	David Decker.....	Sturgeon Bay, Wis.
Secretary .....	E. Decker, Jr.....	Sturgeon Bay, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
E. Decker.....	Algoma, Wis.....	Until successor is chosen.
E. Decker, Jr.....	Algoma, Wis.....	Until successor is chosen.
M. C. Haney.....	Algoma, Wis.....	Until successor is chosen.
David Decker.....	Sturgeon Bay, Wis.	Until successor is chosen.
L. M. Washburn.....	Sturgeon Bay, Wis.	Until successor is chosen.
Nathan Decker.....	Sturgeon Bay, Wis.	Until successor is chosen.
S. W. Champion.....	Green Bay, Wis....	Until successor is chosen.

Total number of stockholders at date of last election, 14.  
 Date of last meeting of stockholders for election of directors, Sept. 15, 1898.  
 Post office address of general and operating offices, Sturgeon Bay, Wis.

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*Officers and Directors.*


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## BIG FALLS R'Y CO.

## OFFICERS.

Title.	Name.	Address.
President .....	J. H. Wall.....	Oshkosh, Wis.
Vice President.....	J. A. Spalding.....	Oshkosh, Wis.
Secretary and Treasurer.....	T. R. Wall.....	Oshkosh, Wis.
General Solicitor.....	H. B. Harshaw.....	Oshkosh, Wis.

## DIRECTORS.

Name.	Expiration of Term.	Address.
J. H. Wall.....	One year or until successor is elected.	Oshkosh, Wis...
S. M. Wall.....	One year or until successor is elected.	Oshkosh, Wis...
T. R. Wall.....	One year or until successor is elected.	Oshkosh, Wis...
J. A. Spalding.....	One year or until successor is elected.	Oshkosh, Wis...
H. B. Harshaw.....	One year or until successor is elected.	Oshkosh, Wis...

Total numbers of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, Aug. 21, 1895.

Post office address of operating and general offices, Oshkosh, Wis.

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*Officers and Directors.*


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## BAYFIELD TRANSEFR RAILWAY COMPANY.

## OFFICERS.

Title.	Name.	Address.
President and Treasurer.....	W. F. Dalrymple....	Bayfield, Wis.
Vice President and General Solicitor....	Geo. H. Noyes.....	Milwaukee, Wis.
Secretary and General Manager.....	H. C. Hale.....	Bayfield, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
W. F. Dalrymple.....	Bayfield, Wis.....	June 1, 1901.
Geo. H. Noyes.....	Milwaukee, Wis. ...	June 1, 1901.
H. C. Hale.....	Bayfield, Wis.....	June 1, 1901.
F. W. Dockery.....	Milwaukee, Wis.....	June 25, 1902.
B. K. Miller, Jr. ....	Milwaukee, Wis.....	June 25, 1902.

Total number of stockholders at date of last election, 5.  
 Date of last meeting of stockholders for election of directors, June 25, 1900.  
 Post office address of general and operating offices, Bayfield, Wis.

*Officers and Directors.*

## CHICAGO, MILWAUKEE &amp; ST. PAUL.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board.....	Roswell Miller.....	New York, N. Y.
President.....	A. J. Earling.....	Chicago, Ill.
Vice President.....	F. S. Bond.....	New York, N. Y.
3rd Vice President.....	A. C. Bird.....	Chicago, Ill.
Secretary.....	P. M. Meyers.....	Milwaukee, Wis.
Treasurer.....	F. G. Ranney.....	Chicago, Ill.
Assistant Treasurer.....	John McNab.....	Chicago, Ill.
Chief Engineer.....	D. J. Whittemore.....	Chicago, Ill.
General Counsel.....	George R. Peck.....	Chicago, Ill.
Solicitor.....	Burton Hansen.....	Chicago, Ill.
Comptroller.....	E. G. Sewall.....	Chicago, Ill.
General Auditor.....	W. N. D. Winnie.....	Chicago, Ill.
General Manager.....	H. R. Williams.....	Chicago, Ill.
Traffic Manager.....	J. H. Hiland.....	Chicago, Ill.
General Passenger and Ticket Agent...	G. H. Heafford.....	Chicago, Ill.
Asst. Passenger and Ticket Agent.....	G. S. Marsh.....	Chicago, Ill.
General Superintendent.....	W. J. Underwood.....	Chicago, Ill.
Division Superintendents.....	17 in number.....	Chicago, Ill.
Superintendent of Telegraph.....	U. J. Fry.....	Milwaukee, Wis.
General Baggage Agent.....	W. D. Garrick.....	Milwaukee, Wis.
Land Commissioner.....	H. G. Haugan.....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
P. D. Armour.....	Chicago Ill.....	September, 1900.
August Belmont.....	New York, N. Y.....	September, 1900.
Frank S. Bond.....	New York, N. Y.....	September, 1900.
A. J. Earling.....	Chicago Ill.....	September, 1900.
Peter Geddes.....	New York, N. Y.....	September, 1900.
Charles W. Harkness.....	New York, N. Y.....	September, 1900.
Frederick Layton.....	Milwaukee, Wis.....	September, 1900.
Joseph Milbank.....	New York, N. Y.....	September, 1900.
Roswell Miller.....	New York, N. Y.....	September, 1900.
William Rockefeller.....	New York, N. Y.....	September, 1900.
Samuel Spencer.....	New York, N. Y.....	September, 1900.
A. Van Santvoord.....	New York, N. Y.....	September, 1900.

Total number of stockholders at date of last election, 5,464.

Date of last meeting of stockholders for election of directors, Sept. 23, 1899.

Post office address of operating and general offices, Chicago, Ill.

*Officers and Directors.*

## CHICAGO &amp; NORTHWESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board.....	Albert Keep.....	Chicago, Ill.
President .....	Marvin Hughitt.....	Chicago, Ill.
Vice President and Secretary.....	M. L. Sykes.....	New York, N. Y.
2nd Vice President.....	Marshall M. Kirkman.....	Chicago, Ill.
3rd Vice President.....	H. R. McCullough.....	Chicago, Ill.
Treasurer .....	S. O. Howe.....	New York, N. Y.
Chief Engineer.....	E. C. Carter.....	Chicago, Ill.
General Counsel.....	L. W. Bowers.....	Chicago, Ill.
Auditor .....	J. H. Redfield.....	Chicago, Ill.
General Manager.....	W. A. Gardner.....	Chicago, Ill.
Traffic Manager.....	M. Hughitt, Jr.....	Chicago, Ill.
General Passenger Agent.....	Warren B. Kniskern.....	Chicago, Ill.
General Superintendents.....	R. H. Aishton.....	Chicago, Ill.
Division Superintendents.....	Thomas A. Lawson.....	Chicago, Ill.
(Wisconsin Lines)	W. E. Morse.....	Chicago, Ill.
	W. B. Linsley.....	Escanaba, Mich.
	Robert A. Cowan.....	Baraboo, Wis.
	Chas. H. Hartley.....	Kaukauna, Wis.
Superintendent of Telegraph.....	G. H. Thayer.....	Chicago, Ill.
General Baggage Agent.....	N. A. Phillips.....	Chicago, Ill.
Land Commissioner.....	J. F. Cleveland.....	Chicago, Ill.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Olive Ames.....	Boston, Mass.....	June, 1901.
Zenas Crane.....	Dalton, Mass.....	June, 1901.
James Stillman.....	New York, N. Y.....	June, 1901.
Marvin Hughitt.....	Chicago, Ill.....	June, 1901.
N. K. Fairbank.....	Chicago, Ill.....	June, 1901.
Byron H. Smith.....	Chicago, Ill.....	June, 1902.
Cyrus H. McCormick.....	Chicago, Ill.....	June, 1902.
F. W. Vanderbilt.....	New York, N. Y.....	June, 1902.
W. K. Vanderbilt.....	New York, N. Y.....	June, 1902.
H. McK. Twombly.....	New York, N. Y.....	June, 1902.
Marshall Field.....	Chicago, Ill.....	June, 1902.
David C. Kimball.....	Boston, Mass.....	June, 1903.
Chauncey M. Depew.....	New York, N. Y.....	June, 1903.
Samuel F. Barger.....	New York, N. Y.....	June, 1903.
Albert Keep.....	Lake Geneva, Wis.....	June, 1903.
M. L. Sykes.....	New York, N. Y.....	June, 1903.
James C. Fargo.....	New York, N. Y.....	June, 1903.

Total number of stockholders for election of directors, 4,492.  
Date of last meeting of stockholders for election of directors, June 7, 1900.  
Post office address of general offices, Chicago and New York.  
Post office address of operating office, Chicago, Ill.

*Officers and Directors.*

## CHICAGO, ST. PAUL, MINNEAPOLIS &amp; OMAHA.

## OFFICERS.

Title.	Name.	Address.
President .....	Marvin Hughitt.....	Chicago, Ill.
1st Vice Pres. and Asst. Secy.....	Martin L. Sykes.....	New York, N. Y.
2nd Vice Pres. and Gen. Tr. Mgr.....	James T. Clark.....	St. Paul, Minn.
Secretary .....	E. E. Woodman.....	Hudson, Wis.
Treas. and 2nd Asst. Secy.....	S. O. Howe.....	New York, N. Y.
Asst. Treas. and 3rd Asst. Secy.....	R. H. Williams.....	New York, N. Y.
Chief Engineer.....	C. W. Johnson.....	St. Paul, Minn.
General Counsel.....	Thomas Wilson.....	St. Paul, Minn.
General Attorney.....	Pierce Butler.....	St. Paul, Minn.
Comptroller .....	L. A. Robinson.....	Chicago, Ill.
Auditor of Expenditures.....	W. H. Bennett.....	St. Paul, Minn.
Local Treasurer.....	Chas. P. Nash.....	St. Paul, Minn.
General Manager.....	W. A. Scott.....	St. Paul, Minn.
Gen. Freight Agent.....	H. M. Pearce.....	St. Paul, Minn.
Asst. Gen. Freight Agent.....	E. B. Ober.....	St. Paul, Minn.
General Passenger Agent.....	T. W. Teasdale.....	St. Paul, Minn.
Asst. Gen. Passenger Agent.....	G. H. Mac Rae.....	St. Paul, Minn.
General Superintendent.....	A. W. Trenholm.....	St. Paul, Minn.
Division Superintendents.....	L. F. Sinker.....	St. Paul, Minn.
	W. C. Winter.....	St. Paul, Minn.
	H. Spencer.....	Itaska, Wis.
	S. G. Strickland.....	St. James, Minn.
Purchasing Agent.....	Isaac Sedden.....	Omaha, Neb.
Superintendent of Telegraph.....	H. C. Hope.....	St. Paul, Minn.
General Baggage Agent.....	E. F. Woode.....	St. Paul, Minn.
Car Accountant.....	A. Drezmal.....	St. Paul, Minn.
General Claim Agent.....	E. L. Poole.....	St. Paul, Minn.
Land Commissioner.....	G. W. Bell.....	Hudson, Wis.

## OFFICERS.

Name.	Address.	Expiration of Term.
F. W. Vanderbilt.....	New York, N. Y.....	June, 1901.
Wm. K. Vanderbilt.....	New York, N. Y.....	June, 1901.
Albert Keep.....	Lake Geneva, Wis.....	June, 1901.
H. McK. Twombly.....	New York, N. Y.....	June, 1901.
Marvin Hughitt.....	Chicago, Ill.....	June, 1902.
Byron L. Smith.....	Chicago, Ill.....	June, 1902.
Chauncey M. Depew.....	New York, N. Y.....	June, 1902.
David P. Kimball.....	Boston, Mass.....	June, 1902.
Horace G. Burt.....	Omaha, Neb.....	June, 1902.
Martin L. Sykes.....	New York, N. Y.....	June, 1903.
Thomas Wilson.....	St. Paul, Minn.....	June, 1903.
John M. Whitman.....	Chicago, Ill.....	June, 1903.
John A. Humbird.....	St. Paul, Minn.....	June, 1903.

Total number of stockholders at date of last election, 1,087.

Date of last meeting of stockholders for election of directors, June 9, 1900.

Post office address of general and operating offices, St. Paul, Minn.



*Officers and Directors.*

## CHICAGO, BURLINGTON &amp; QUINCY.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board.....	F. H. Hummewell..	Boston, Mass.
President .....	C. E. Perkins.....	Burlington, Ia.
Vice President.....	J. C. Peasley.....	Chicago, Ill.
Vice President.....	Geo. B. Harris.....	Chicago, Ill.
Secretary .....	T. S. Howland.....	Boston, Mass.
Treasurer .....	J. C. Peasley.....	Chicago, Ill.
Chief Engineer .....	W. L. Breckinridge	Chicago, Ill.
General Solicitor.....	J. W. Blythe.....	Burlington, Ia.
General Solicitor.....	C. E. Manderson...	Omaha, Neb.
Attorney .....	J. W. Losey.....	La Crosse, Wis.
General Auditor.....	C. I. Sturgis.....	Chicago, Ill.
General Manager.....	W. C. Brown.....	Chicago, Ill.
General Freight Agent.....	Thos. Miller.....	Chicago, Ill.
Asst. Gen. Frt. Agents.....	W. B. Hamblin.....	Chicago, Ill.
	E. R. Puffer.....	Chicago, Ill.
Asst. Gen. Frt. and Pass. Agt.....	Geo. P. Lyman.....	St. Paul, Minn.
Gen. Pass. and Frt. Agent.....	P. J. Eustis.....	Chicago, Ill.
Asst. Gen. Pass. and Ticket Agt.....	W. A. Lalor.....	Chicago, Ill.
General Superintendent.....	J. D. Besler.....	Chicago, Ill.
Division Superintendent.....	D. Cunningham.....	La Crosse, Wis.
Superintendent of Telegraph.....	W. W. Ryder.....	Chicago, Ill.
General Baggage Agent.....	E. A. Ladd.....	Chicago, Ill.
Land Commissioner.....	W. W. Baldwin.....	Burlington, Ia.

## DIRECTORS.

Name.	Address.	Expiration of Term.
F. W. Hummewell.....	Boston, Mass.....	Nov. 7, 1900.
Nathaniel Thayer.....	Boston, Mass.....	Nov. 7, 1900.
Chas. J. Paine.....	Boston, Mass.....	Nov. 7, 1900.
Chas. E. Perkins.....	Burlington, Ia.....	Nov. 7, 1900.
T. J. Coolidge.....	Manchester, Mass.....	Nov. 7, 1900.
Geo. P. Gardner.....	Boston, Mass.....	Nov. 7, 1900.
Wm. Endicott, Jr.....	Boston, Mass.....	Nov. 7, 1900.
Richard Olney.....	Boston, Mass.....	Nov. 7, 1900.
Edw. W. Hooper.....	Boston, Mass.....	Nov. 7, 1900.
Jas. H. Smith.....	New York, N. Y.....	Nov. 7, 1900.
J. Malcolm Forbes.....	Boston, Mass.....	Nov. 7, 1900.

Total number of stockholders at date of last election, 13,081.

Date of last meeting of stockholders for election of directors, Nov. 1, 1899.

Post office address of general and operating office, Chicago, Ill.



CHICAGO, BURLINGTON & QUINCY—GENERAL OFFICE CHICAGO.



*Officers and Directors.*

## CHICAGO, LAKE SHORE &amp; EASTERN.

## OFFICERS.

Title.	Name.	Address.
President and Gen. Manager.....	C. H. Ackert.....	Chicago, Ill.
Secretary and Treasurer.....	F. D. Raymond.....	Chicago, Ill.
Chief Engineer.....	R. E. Orr.....	Joliet, Ill.
General Counsel.....	K. K. Knapp.....	Chicago, Ill.
	W. D. Haynie.....	
Auditor.....	F. W. Sutton.....	Chicago, Ill.
Traffic Manager.....	A. F. Banks.....	Chicago, Ill.
Assistant Traffic Manager.....	F. E. Larned.....	Chicago, Ill.
General Superintendent.....	C. S. McManus.....	Joliet, Ill.
Superintendent.....	A. H. Westfall.....	South Chicago, Ill.
Division Superintendent.....	L. W. McManae.....	Bay View, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
C. H. Ackert.....	Chicago, Ill.....	June, 1901.
C. P. Coffin.....	Chicago, Ill.....	June, 1901.
E. Shearson.....	New York, N. Y.....	June, 1901.
D. H. Bacon.....	New York, N. Y.....	June, 1901.
E. H. Gary.....	New York, N. Y.....	June, 1901.
W. L. Brown.....	Chicago, Ill.....	June, 1901.
F. D. Raymond.....	Chicago, Ill.....	June, 1901.

Total number of stockholders at date of last election, 12.

Date of last meeting of stockholders for election of directors, second Wednesday in June, 1900.

Post office address of general office, Chicago, Ill.

Post office address of operating office, Joliet, Ill.

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*Officers and Directors.*


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## CHICAGO &amp; LAKE SUPERIOR.

## OFFICERS.

Title.	Name.	Address.
President .....	George Dow.....	Cambridge, Wis.
Vice President .....	A. H. Hadfield.....	Chicago, Ill.
Secretary and General Counsel.....	Charles Friend.....	Milwaukee, Wis.
Treasurer .....	Robe Dow.....	Stoughton, Wis.
Auditor .....	James P. Brown.....	Milwaukee, Wis.
General Manager and Passenger Agent.	Henry Herman.....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
George Dow.....	Cambridge, Wis..	Until successor is appointed.
George Dow, Jr.....	Madison, Wis.....	Until successor is appointed.
Robe Dow.....	Stoughton, Wis..	Until successor is appointed.
Henry Herman.....	Milwaukee, Wis..	Until successor is appointed.
Charles Friend.....	Milwaukee, Wis..	Until successor is appointed.
A. H. Hadfield.....	Chicago, Ill.....	Until successor is appointed.
A. C. Amundson.....	Cambridge, Wis..	Until successor is appointed.

Date of stockholders at date of last election, 7.

Date of last meeting of stockholders for election of directors, —.

Post office address of general and operating offices, Milwaukee, Wis.

*Officers and Directors.*CHICAGO, MADISON & NORTHERN (OPERATED BY ILLINOIS  
CENTRAL).

## OFFICERS.

Title.	Name.	Address.
President .....	Stuyvesant Fish...	New York, N. Y.
Vice President .....	J. C. Welling.....	Chicago, Ill.
Secretary .....	W. G. Bruen.....	Chicago, Ill.
Treasurer .....	E. T. H. Gibson...	New York, N. Y.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Stuyvesant Fish.....	New York, N. Y.....	October, 1900.
B. F. Ayer.....	Chicago, Ill.....	October, 1900.
W. G. Bruen.....	Chicago, Ill.....	October, 1900.
J. C. Welling.....	Chicago, Ill.....	October, 1901.
J. T. Harahan.....	Chicago, Ill.....	October, 1901.

Total number of stockholders at date of last meeting, 6.

Date of last meeting of stockholders for election of directors, October 10, 1899.

Post office address of general and operating office, Central Station, Chicago, Ill.

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*Officers and Directors.*


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## CHIPPEWA RIVER &amp; MENOMONIE.

## OFFICERS.

Title.	Name.	Address.
President .....	F. Weyerhauser....	Chippewa Falls, Wis.
Vice President .....	O. H. Ingram.....	Chippewa Falls, Wis.
Secretary and General Supt.....	Wm. Irvine.....	Chippewa Falls, Wis.
Treasurer .....	W. G. Norton.....	Chippewa Falls, Wis.
Auditor .....	James Ritchie.....	Chippewa Falls, Wis.
General Manager.....	H. G. Chichester...	Chippewa Falls, Wis.
Division Superintendent.....	John Dunlavey.....	Chippewa Falls, Wis.

## DIRECTORS.

Name.	Address.	Expiration of term.
F. Weyerhauser .....	St. Paul, Minn. ....	June 5, 1901.
O. H. Ingram .....	Eau Claire, Wis.....	June 5, 1901.
M. G. Norton .....	Winona, Minn.....	June 5, 1901.
W. A. Rust .....	Eau Claire, Wis.....	June 5, 1901.
Wm. Irvine .....	Chippewa Falls, Wis..	June 5, 1901.

Total number of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, June 15, 1900.

Post office address of general office, Chippewa Falls, Wis.

Post office address of operating office, Apollonia, Wis.

*Officers and Directors.*

DRUMMOND & SOUTH WESTERN.

OFFICERS.

Title.	Name.	Address.
President .....	F. W. Gilchrist.....	Alpena, Mich.
Vice President .....	A. J. Rust.....	Eau Claire, Wis.
Secretary and Treasurer.....	Frank H. Drummond.	Drummons, Wis.
General Manager.....	Frank H. Drummond.	Drummons, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
F. W. Gilchrist.....	Alpena, Mich.....	Unlimited.
Frank H. Drummond.....	Drummond, Wis.....	Unlimited.
Jno. S. Owen.....	Eau Claire, Wis.....	Unlimited.
A. J. Rust.....	Eau Claire, Wis.....	Unlimited.
W. A. Rust.....	Eau Claire, Wis.....	Unlimited.



*Officers and Directors.*

## DULUTH, SOUTH SHORE &amp; ATLANTIC.

## OFFICERS.

Title.	Name.	Address.
President .....	Gen. Samuel Thomas..	New York, N. Y.
1st Vice President.....	Thos. G. Shaughnessy..	Montreal, Que.
2nd Vice President and Gen. Mgr...	Wm. T. Fitch.....	Marquette, Mich.
Secretary and Assistant Treasurer.	Geo. H. Church.....	New York, N. Y.
Treasurer .....	E. W. Allen.....	Marquette, Mich.
General Attorney.....	A. B. Eldridge.....	Marquette, Mich.
Attorney .....	A. E. Miller .....	Marquette, Mich.
Auditor .....	A. E. Delf.....	Marquette, Mich.
Chief Engineer.....	H. J. Payne.....	Marquette, Mich.
General Freight Agent.....	Wm. Orr.....	Marquette, Mich.
Assistant Freight Agent.....	W. W. Walker.....	Duluth, Minn.
General Passenger Agent.....	Geo. W. Hibbard.....	Marquette, Mich.
Assistant General Passenger Agent.	T. H. Larke.....	Duluth, Minn.
General Superintendent.....	C. E. Lytle.....	Marquette, Mich.
Assistant Superintendent.....	A. M. Sunderland.....	Thomaston, Mich.
Assistant Superintendent.....	T. W. Smith.....	Marquette, Mich.
Land Commissioner.....	E. W. McPherran.....	Marquette, Mich.

Number of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, June 6, 1900.

Post office address of general and operating office, Drummond, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Gen. Samuel Thomas.....	New York, N. Y.	June 7, 1901.
Sir W. C. Van Horne.....	Montreal, Que....	June 7, 1901.
Thos. G. Shaughnessy.....	Montreal, Que....	June 7, 1901.
R. B. Angus.....	Montreal, Que....	June 7, 1901.
Rt. Hon. Lord Stratheona and Mount Royal .....	London, England.	June 7, 1901.
John W. Sterling.....	New York, N. Y.	June 7, 1901.
Thos. W. Pearsall.....	New York, N. Y.	June 7, 1901.
R. Y. Hedden.....	New York, N. Y.	June 7, 1901.
Geo. H. Church.....	New York, N. Y.	June 7, 1901.
James O. Bloss.....	New York, N. Y.	June 7, 1901.
Wm. T. Fitch.....	Marquette, Mich.	June 7, 1901.

Total number of stockholders at date of last election, 350.

Date of last meeting of stockholders for election of directors, June 7, 1900.

Post office address of general and operating offices, Marquette, Mich.

*Officers and Directors.*

## DULUTH, SUPERIOR &amp; WESTERN TERMINAL CO.

## OFFICERS.

Title.	Name.	Address.
President .....	D. M. Philbin....	West Superior, Wis.
Vice President .....	J. A. Murphy....	West Superior, Wis.
Secretary .....	J. H. Gruber....	Duluth, Minn.
Treasury .....	E. Sawyer.....	St. Paul, Minn.
Auditor .....	R. I. Farrington.	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
D. M. Philbin.....	West Superior, Wis....	When successor elected.
J. A. Murphy.....	West Superior, Wis....	When successor elected.
R. I. Farrington.....	St. Paul, Minn.....	When successor elected.
J. H. Gruber.....	Duluth, Minn.....	When successor elected.
Edward Sawyer.....	St. Paul, Minn.....	When successor elected.

Number of stockholders at date of last election, 6.

Date of last meeting of stockholders for election of directors, Dec. 21, 1899.

Post office address of general office, Duluth, Minn.

Post office address of operating office, West Superior, Wis.

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*Officers and Directors.*


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## DUNBAR &amp; WAUSAUKEE.

## OFFICERS.

Title.	Name.	Address.
President .....	W. C. Culbertson..	Girard, Pa.
Vice President .....	T. W. Wells.....	Menomonie, Mich.
Secretary and Treasurer.....	T. A. Culbertson..	Menomonie, Mich.
Comptroller .....	J. L. Wells.....	Dunbar, Wis.
Superintendent .....	A. C. Wells.....	Dunbar, Wis.

## DIRECTORS.

Name,	Address.	Expiration of Term.
W. C. Culbertson.....	Girard, Pa.....	When successor elected.
T. W. Wells.....	Menomonie, Mich.....	When successor elected.
J. A. Culbertson.....	Menomonie, Mich.....	When successor elected.

Total number of stockholders at date of last election, 4.

Date of last meeting of stockholders for election of directors—original.

Post office address of general office, Menomonie, Mich.

Post office address of operating office, Dunbar, Wis.

*Officers and Directors.*

EASTERN RAILWAY CO. OF MINNESOTA.

OFFICERS.

Title.	Name.	Address.
President .....	Samuel Hill.....	Minneapolis, Minn.
Vice President.....	L. W. Hill.....	Duluth, Minn.
2nd Vice President and Superintendent	D. M. Philbin.....	West Superior, Wis.
Secretary and Treasurer.....	E. Sawyer.....	St. Paul, Minn.
Chief Engineer.....	John F. Stevens..	St. Paul, Minn.
General Solicitor.....	M. D. Grover.....	St. Paul, Minn.
Attorney .....	J. A. Murphy.....	West Superior, Wis.
Comptroller .....	R. I. Farrington..	St. Paul, Minn.
Assistant Comptroller.....	J. G. Drew.....	St. Paul, Minn.
General Auditor.....	J. L. Cramer.....	St. Paul, Minn.
General Freight Agent.....	J. C. Eden.....	St. Paul, Minn.
General Passenger and Ticket Agent..	F. I. Whitney.....	St. Paul, Minn.
Superintendent of Telegraph.....	E. J. Little.....	St. Paul, Minn.
General Baggage Agent.....	S. A. Smart.....	St. Paul, Minn.

DIRECTORS.

Name.	Address.	Expiration of Term.
Samuel Hill.....	Minneapolis, Minn...	When successor elected.
L. W. Hill.....	Duluth, Minn.....	When successor elected.
Edward Sawyer.....	St. Paul, Minn.....	When successor elected.
M. D. Grover.....	St. Paul, Minn.....	When successor elected.
D. M. Philbin.....	West Superior, Wis.	When successor elected.

Total number of stockholders at date of last election, 6.  
 Date of last meeting of stockholders for election of directors, October 14, 1899.  
 Post office address of general and operating offices, St. Paul, Minn.

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*Officers and Directors.*


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## FAIRCHILD &amp; NORTH EASTERN.

## OFFICERS.

Title.	Name.	Address.
President and General Manager.....	N. C. Foster.....	Fairchild, Wis.
Vice President.....	E. J. Foster.....	Fairchild, Wis.
Secretary and Treasurer.....	G. A. Foster.....	Fairchild, Wis.
Auditor and Traffic Manager.....	Jno. T. Fatzinger.....	Fairchild, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
N. C. Foster.....	Fairchild, Wis.....	Until successor elected.
E. M. Foster.....	Fairchild, Wis.....	Until successor elected.
G. A. Foster.....	Fairchild, Wis.....	Until successor elected.
E. J. Foster.....	Fairchild, Wis.....	Until successor elected.
W. Foster.....	Fairchild, Wis.....	Until successor elected.

Total number of stockholders at date of last election, 9.  
 Date of last meeting of stockholders for election of directors, July 7, 1898.  
 Post office address of general and operating offices, Fairchild, Wis.

*Officers and Directors.*

## GREEN BAY &amp; WESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board and President...	S. S. Palmer.....	New York, N. Y.
Vice President and General Manager....	J. A. Jordan.....	Green Bay, Wis.
Secretary and Treasurer.....	Mark T. Cox.....	New York, N. Y.
General Auditor.....	J. C. Thurman.....	Green Bay, Wis.
Gen. Pass. and Ticket Agt. and Baggage Agent .....	J. B. Last.....	Green Bay, Wis.
Superintendent .....	F. B. Seymour.....	Green Bay, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
S. S. Palmer.....	Princeton, N. J.....	March 8, 1901.
C. L. Blair.....	New York, N. Y.....	March 8, 1901.
Wm. Jay Hunt.....	New York, N. Y.....	March 8, 1901.
Mark T. Cox.....	Morristown, N. J.....	March 8, 1901.
J. A. Jordan.....	Green Bay, Wis.....	March 8, 1901.

Total number of stockholders at date of last election, 157.

Date of last meeting of stockholders for election of directors, March 8, 1900.

Post office address of general and operating office, Green Bay, Wis.

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*Officers and Directors.*


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**HAWTHORNE, NEBAGAMON & SUPERIOR.**
**OFFICERS.**

Title.	Name.	Address.
Chairman of the Board and Pres.	E. Rutledge.....	Chippewa Falls, Wis.
Vice President.....	F. Weyerhauser....	St. Paul, Minn.
Secretary and Treasurer.....	E. L. Ainsworth....	Chippewa Falls, Wis.
Auditor and Traffic Manager.....	F. L. Wilkins.....	Lake Nebagamon, Wis.
General Manager.....	J. P. Weyerhauser..	Lake Nebagamon, Wis.
General Superintendent.....	Wm. O. Neil.....	Lake Nebagamon, Wis.

**DIRECTORS.**

Name.	Address.	Expiration of Term.
F. Weyerhauser .....	St. Paul, Minn. ....	September, 1900.
E. Rutledge .....	Chippewa Falls, Wis. .	September, 1900.
John Weyerhauser .....	Lake Nebagamon, Wis. .	September, 1900.
E. L. Ainsworth .....	Chippewa Falls, Wis. .	September, 1900.

Number of stockholders at date of last election, 4.

Date of last meeting of stockholders for election of directors, Sept., 1899.

Post office address of general office, Chippewa Falls, Wis.

Post office address of operating office, Lake Nebagamon, Wis.

*Officers and Directors.*

## HAZELHURST &amp; SOUTH EASTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	W. C. Yawkey .....	Hazelhurst, Wis.
Vice Pres., Gen. Mgr. & Gen. Pass. Agt. ....	C. C. Yawkey .....	Hazelhurst, Wis.
Secretary and Auditor .....	L. H. Wheeler .....	Hazelhurst, Wis.
Treasurer .....	W. H. Yawkey .....	Hazelhurst, Wis.
General Counsel .....	John Barnes .....	Rhineland, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
W. C. Yawkey .....	Hazelhurst, Wis. ....	January 21, 1901.
C. C. Yawkey .....	Hazelhurst, Wis. ....	January 21, 1901.
W. H. Yawkey .....	Hazelhurst, Wis. ....	January 21, 1901.
J. W. Fredon .....	Hazelhurst, Wis. ....	January 21, 1901.
L. H. Wheeler .....	Hazelhurst, Wis. ....	January 21, 1901.

Number of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, Jan. 18, 1900.

Post office address of general and operating offices, Hazelhurst, Wis.



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*Officers and Directors.*


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## WM. HOLMES &amp; SON LOGGING RAILROAD.

## OFFICERS.

Title.	Name.	Address.
President .....	Wm. Holmes ....	Menominee, Mich.
Vice President .....	Wm. A. Holmes	Crystal Falls, Mich.

## IOLA &amp; NORTHERN.

## OFFICERS.

Title.	Name.	Address.
President .....	Joseph Walker, Jr.	New York, N. Y.
Auditor .....	J. C. Thurman .....	Green Bay, Wis.
General Manager .....	J. A. Jordan .....	Green Bay, Wis.
Gen. Passenger and Ticket Agent and General Baggage Agent .....	J. B. Last .....	Green Bay, Wis.

## DIRECTORS.

	Address.	Expiration of Term.
Joseph Walker, Jr. ....	New York, N. Y.	Until successor elected.
S. W. Champion .....	Green Bay, Wis.	Until successor elected.
F. B. Seymour .....	Green Bay, Wis.	Until successor elected.
B. A. Hegeman .....	New York, N. Y.	Until successor elected.

Number of stockholders at date of last election, 6.  
 Date of last meeting of stockholders for election of directors, Sept. 12, 1895.  
 Post office address of general and operating office, Green Bay, Wis.

*Officers and Directors.*

KEWAUNEE, GREEN BAY & WESTERN.

OFFICERS.

Title.	Name.	Address.
Chairman of the Board and President..	S. S. Palmer .....	New York, N. Y.
Vice President .....	W. W. Cargill .....	La Crosse, Wis.
Secretary and Treasurer .....	Mark T. Cox .....	New York, N. Y.
General Auditor .....	J. C. Thurman .....	Green Bay, Wis.
General Manager .....	J. A. Jordan .....	Green Bay, Wis.
General Passenger Agent .....	J. B. Last .....	Green Bay, Wis.
Superintendent .....	F. ... Seymour .....	Green Bay, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
S. S. Palmer .....	Princeton, N. J. .	Unitl successor elected.
Mark T. Cox .....	Morristown, N. J.	Unitl successor elected.
C. L. Blair .....	New York, N. Y.	Unitl successor elected.
J. A. Jordan .....	Green Bay, Wis.	Unitl successor elected.
J. C. Thurman .....	Green Bay, Wis.	Unitl successor elected.

Total number of stockholders at date of last election, 27.

Date of last meeting of stockholders for election of directors, July 12, 1899.

Post office address of general and operating offices, Green Bay, Wis.

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*Officers and Directors.*


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## MATTOON R'Y CO.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board and President..	Geo. B. Mattoon ...	Mattoon, Wis.
Secretary and Treasurer .....	Chas. H. Weeks ...	Mattoon, Wis.
General Manager .....	E. B. Fargo .....	Mattoon, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Geo. B. Mattoon .....	Mattoon, Wis. ...	Until successor elected.
C. H. Weeks .....	Mattoon, Wis. ...	Until successor elected.
E. B. Fargo .....	Mattoon, Wis. ...	Until successor elected.

Number of stockholders at date of last election, 3.

Date of last meeting of stockholders for election of directors, Jan. 1, 1900.

Post office address of general and operating offices, Mattoon, Wis.

*Officers and Directors.*

MILWAUKEE & SUPERIOR.

OFFICERS.

Title.	Name.	Address.
President .....	Henry Lindsay .....	Milwaukee, Wis.
Vice President .....	A. E. Smith .....	Milwaukee, Wis.
Secretary .....	M. H. Brand .....	Milwaukee, Wis.
Treasurer and General Manager .....	Henry Herman .....	Milwaukee, Wis.
General Counsel .....	T. R. Hansen .....	Milwaukee, Wis.
Auditor .....	W. O. Antram .....	Milwaukee, Wis.
General Passenger Agent .....	A. M. Campbell .....	Milwaukee, Wis.
Superintendent .....	Geo. A. Nettleton .....	Lannon, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
Henry Lindsay .....	Milwaukee, Wis.	.....
Geo. I. Lindsay .....	Milwaukee, Wis.	.....
Henry Herman .....	Milwaukee, Wis.	.....
M. H. Brand .....	Milwaukee, Wis.	.....
Otto R. Hansen .....	Milwaukee, Wis.	.....

Total number of stockholders at date of last election, 5.  
 Date of last meeting of stockholders for election of directors, Dec. 16, 1899.  
 Post office address of general and operating offices, Milwaukee, Wis.

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*Officers and Directors.*


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## MARSHFIELD &amp; SOUTH EASTERN.

## OFFICERS.

Title.	Name.	Address.
President and Treasurer .....	Walter A. Scott ....	Chicago, Ill.
Secretary .....	Thos. B. Scott .....	Chicago, Ill.
Vice President .....	H. C. Ross .....	Chicago, Ill.
Local Treasurer .....	Edw. L. Reese .....	Marshfield, Wis.
General Manager .....	Chas. H. Grundy ...	Marshfield, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Walter A. Scott .....	Chicago, Ill. ....	October 9, 1900.
Thos. B. Scott .....	Chicago, Ill. ....	October 9, 1900.
H. C. Ross .....	Chicago, Ill. ....	October 9, 1900.
Chas. H. Grundy .....	Marshfield, Wis.	October 9, 1900.
Jerome R. North .....	Green Bay, Wis.	October 9, 1900.

Number of stockholders at date of last election, 5.

Date of last meeting of stockholders for election of directors, October 10, 1899.

Post office address of general and operating office, Marshfield, Wis.

*Officers and Directors.*

## MARINETTE, TOMAHAWK AND WESTERN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board and President..	W. H. Bradley.....	Tomahawk, Wis.
Vice President and General Manager....	W. G. Collins.....	Tomahawk, Wis.
Secretary, Treasurer and Auditor.....	F. G. Stark.....	Tomahawk, Wis.
General Counsel.....	A. H. Woodworth...	Tomahawk, Wis.
Chief Engineer, Gen. Pass. Agt., Division Superintendent, etc.....	W. E. Jeannot.....	Tomahawk, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
W. H. Bradley.....	Tomahawk, Wis..	Sept. 12, 1900.
J. W. Bradley.....	Milwaukee, Wis..	Sept. 12, 1900.
W. G. Collins.....	Tomahawk, Wis..	Sept. 12, 1900.
F. G. Stark.....	Tomahawk, Wis..	Sept. 12, 1900.
W. T. Bradley.....	Tomahawk, Wis..	Sept. 12, 1900.

Total number of stockholders at date of last election, 12.

Date of last meeting of stockholders for election of directors, Sept. 13, 1899.

Post office address of general and operating offices, Tomahawk, Wis.

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*Officers and Directors.*


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## MINNESOTA &amp; WISCONSIN.

## OFFICERS.

Title.	Name.	Address.
Chairman of the Board.....	E. D. Buffington..	Stillwater, Minn.
President and General Manager.....	G. D. Bramin.....	Boston, Mass.
Vice President.....	James W. Jones..	St. Paul, Minn.
Secretary and Auditor.....	Herman Scheffer..	St. Paul, Minn.
Treasurer.....	C. A. Severance...	St. Paul, Minn.
General Counsel.....	C. H. Cannon.....	Spring Valley, Wis.
Traffic Manager, etc.....	Jos. Minoque.....	Spring Valley, Wis.
Superintendent and Road Master.....		

## DIRECTORS.

Name.	Address.	Expiration of Term.
E. D. Buffington.....	Stillwater, Minn.	Nov. 12, 1900.
Maurice Auerbach.....	St. Paul, Minn....	Nov. 12, 1900.
G. D. Bramin.....	Boston, Mass.....	Nov. 12, 1900.
C. A. Severance.....	St. Paul, Minn....	Nov. 12, 1900.
H. L. Hoton.....	New York, N. Y..	Nov. 12, 1900.
N. W. Jordan.....	Boston, Mass.....	Nov. 12, 1900.
F. B. Kellogg.....	St. Paul, Minn....	Nov. 12, 1900.
G. r. W. Braman.....	Boston, Mass.....	Nov. 12, 1900.
E. S. Conway.....	Chicago, Ill.....	Nov. 12, 1900.

Total number of stockholders at date of last election, 16.

Date of last meeting of stockholders for election of directors, Feb. 10, 1900.

Post office address of general and operating office, Spring Valley, Wis.

*Officers and Directors.*

## MINNEAPOLIS, ST. PAUL &amp; SAULT STE. MARIE.

## OFFICERS.

Title.	Name.	Address.
President .....	Thomas Lowry.....	Minneapolis, Minn.
Vice President.....	John Martin.....	Minneapolis, Minn.
Secretary and Treasurer.....	Charles F. Clement..	Minneapolis, Minn.
Paymaster .....	Herbert N. Paist....	Minneapolis, Minn.
Chief Engineer.....	Thomas Greene.....	Minneapolis, Minn.
General Counsel.....	Alfred H. Bright....	Minneapolis, Minn.
Assistant Counsel.....	Henry B. Dike.....	Minneapolis, Minn.
Auditor .....	Charles W. Gardner..	Minneapolis, Minn.
General Manager.....	E. Pennington .....	Minneapolis, Minn.
General Freight Agent.....	Edmund Pennington..	Minneapolis, Minn.
Assistant Freight Agent.....	W. L. Martin.....	Minneapolis, Minn.
General Passenger Agent.....	Elmer D. Parker.....	St. Paul, Minn.
Assistant Passenger Agent.....	W. R. Galloway.....	Minneapolis, Minn.
Division Superintendent.....	W. S. Thorn.....	St. Paul, Minn.
Division Superintendent.....	Geo. R. Huntington..	Minneapolis, Minn.
Assistant Superintendent.....	C. P. Eckles.....	Enderlin, N. D.
Superintendent Car Service.....	F. W. Curtis.....	Enderlin, N. D.
Assistant Superintendent.....	H. L. Hunter.....	Minneapolis, Minn.
Superintendent of Telegraph.....	Frank Welliver.....	Gladstone, Mich.
Land Commissioner.....	Henry A. Tuttle.....	Gladstone, Mich.
Purchasing Agent.....	David W. Cassiday..	Minneapolis, Minn.
	J. E. Shaughnessy...	Minneapolis, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Thomas Lowry.....	Minneapolis, Minn.	3rd Tues. in Sept., 1901.
John Martin.....	Minneapolis, Minn.	3rd Tues. in Sept., 1901.
W. D. Washburn.....	Minneapolis, Minn.	3rd Tues. in Sept., 1901.
J. S. Pillsbury.....	Minneapolis, Minn.	3rd Tues. in Sept., 1901.
Sir Wm. C. Van Horne.....	Montreal, Canada.	3rd Tues. in Sept., 1901.
Thomas G. Shaughnessy.....	Montreal, Canada.	3rd Tues. in Sept., 1901.
C. H. Pettit.....	Minneapolis, Minn.	3rd Tues. in Sept., 1901.
F. H. Peavey.....	Minneapolis, Minn.	3rd Tues. in Sept., 1901.
Wm. B. Dean.....	St. Paul, Minn.....	3rd Tues. in Sept., 1901.
Wm. H. Bradley.....	Tomahawk, Wis....	3rd Tues. in Sept., 1901.
R. B. Angus.....	Montreal, Canada.	3rd Tues. in Sept., 1901.

Total number of stockholders at date of last election, 148.

Date of last meeting of stockholders for election of directors, June 5, 1900.

Post office address of general and operating office, Minneapolis, Minn.,



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*Officers and Directors.*


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## NORTHERN PACIFIC.

## OFFICERS.

Title.	Name.	Address.
President .....	Charles S. Mellen....	St. Paul, Minn.
1st Vice President.....	David S. Lamont....	New York, N. Y.
2nd Vice Pres. and Gen. Mgr.....	J. W. Kendrick.....	St. Paul, Minn.
3rd Vice Pres. and Gen. Tr. Mgr.....	J. M. Hannaford....	St. Paul, Minn.
Secretary and Assistant Treasurer...	Geo. H. Earl.....	New York, N. Y.
Treasurer .....	Charles A. Clark....	St. Paul, Minn.
Chief Engineer.....	E. H. McHenry.....	St. Paul, Minn.
General Counsel.....	Francis L. Stetson..	New York, N. Y.
General Counsel.....	Charles W. Bunn....	St. Paul, Minn.
Comptroller .....	H. A. Gray.....	St. Paul, Minn.
Auditor .....	M. P. Martin.....	St. Paul, Minn.
Gen. Passenger and Ticket Agent.....	Charles S. Fee.....	St. Paul, Minn.
General Superintendents.....	M. C. Kimberly....	St. Paul, Minn.
Division Superintendents.....	E. C. Blanchard....	Minneapolis, Minn.
	A. J. Sovereign....	Staples, Minn.
	M. M. Fowler.....	St. Paul, Minn.
	E. L. Brown.....	Duluth, Minn.
Superintendent of Telegraph.....	O. C. Greene.....	St. Paul, Minn.
General Baggage Agent.....	W. H. Lowe.....	St. Paul, Minn.
Land Commissioner.....	W. H. Phipps.....	St. Paul, Minn.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Edward D. Adams.....	New York, N. Y.	October, 1900.
Geo. F. Baker.....	New York, N. Y.	October, 1900.
Dumont Clark.....	New York, N. Y.	October, 1900.
Robert Bacon.....	New York, N. Y.	October, 1900.
Robert M. Galloway.....	New York, N. Y.	October, 1900.
Brayton Ives.....	New York, N. Y.	October, 1900.
D. Willis James.....	New York, N. Y.	October, 1900.
John S. Kennedy.....	New York, N. Y.	October, 1900.
Daniel S. Lamont.....	New York, N. Y.	October, 1900.
Charles S. Mellin.....	St. Paul, Minn.	October, 1900.
Walter G. Oakman.....	New York, N. Y.	October, 1900.
Oliver H. Payne.....	New York, N. Y.	October, 1900.
Samuel Spencer.....	New York, N. Y.	October, 1900.
James Stillman.....	New York, N. Y.	October, 1900.
Eben B. Thomas.....	New York, N. Y.	October, 1900.

Number of stockholders at date of last election, 18.

Date of last meeting of stockholders for election of directors, October 31, 1899.

Post office address of general and operating offices, St. Paul, Minn.

*Officers and Directors.*

NORTHWESTERN COAL R'Y CO.

OFFICERS.

Title.	Name.	Address.
President .....	E. U. Saunders.....	St. Paul, Minn.
Vice President.....	M. H. Taylor.....	St. Paul, Minn.
Secretary and Treasurer.....	E. L. Shepley.....	St. Paul, Minn.
Chief Engineer.....	J. A. Morris.....	Erie, Pa.
General Superintendent.....	Wm. P. Barrett....	Superior, Wis.

DIRECTORS.

Address.	Address.	Expiration of Term.
E. U. Saunders.....	St. Paul, Minn..	September 6, 1900.
M. H. Taylor.....	Erie, Pa.....	September 6, 1900.
E. L. Shepley.....	St. Paul, Minn..	September 6, 1900.
T. M. Osborn.....	Pittsburg, Pa....	September 6, 1900.
A. M. Neeper.....	Pittsburg, Pa....	September 6, 1900.
F. L. Robbins.....	Pittsburg, Pa....	September 6, 1900.
M. V. Seymour.....	St. Paul, Minn..	September 6, 1900.

Number of stockholders at date of last election, 18.

Date of last meeting of stockholders for election of directors, Sept. 7, 1899.

Post office address of general and operating offices, Superior, Wis.

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*Officers and Directors.*


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## OSHKOSH TRANSPORTATION CO. (OPERATED BY C. &amp; N. W.).

## OFFICERS.

Title.	Name.	Address.
President, Treasurer and Counsel.....	Howard Morris.....	Milwaukee, Wis.
Secretary .....	E. B. Greenleaf.....	Milwaukee, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Howard Morris.....	Milwaukee, Wis	2nd Month in Jan., 1901.
E. B. Greenleaf.....	Milwaukee, Wis	2nd Month in Jan., 1901.
Thos. H. Gill.....	Milwaukee, Wis	2nd Month in Jan., 1901.

Number of stockholders at date of last election, 3.

Date of last meeting of stockholders for election of directors, Jan. 8, 1900.

Post office address of general office, Milwaukee, Wis.

*Officers and Directors.*

ST. PAUL & DULUTH.

OFFICERS.

Title.	Name.	Address.
President .....	C. S. Mellen.....	St. Paul, Minn.
Vice President.....	D. S. Lamont.....	New York, N. Y.
Secretary and Assistant Treasurer.....	Geo. H. Earl.....	New York, N. Y.
Assistant Secretary.....	P. W. Corbett.....	St. Paul, Minn.
Treasurer .....	C. A. Clark.....	St. Paul, Minn.
Comptroller .....	M. P. Martin.....	St. Paul, Minn.

DIRECTORS.

Name.	Address.	Expiration of Term.
C. S. Mellen.....	St. Paul, Minn.....	.....
C. W. Bunn.....	St. Paul, Minn.....	.....
H. A. Gray .....	St. Paul, Minn.....	.....
Emerson Hadley.....	St. Paul, Minn.....	.....
Daniel S. Lamont.....	New York, N. Y.....	.....
Edw. D. Adams.....	New York, N. Y.....	.....
Geo. H. Earl.....	New York, N. Y.....	.....
Edw. W. Gay.....	New York, N. Y.....	.....
A. H. Kent.....	New York, N. Y.....	.....

Total number of stockholders at date of last election, 207.  
 Date of last meeting of stockholders for election of directors, second Thursday in October, 1899.  
 Post office address of general and operating office, St. Paul, Minn.

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*Officers and Directors.*


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## WINONA BRIDGE R'Y CO.

## OFFICERS.

Title.	Name.	Address.
President .....	M. G. Norton.....	Winona, Minn.
Vice President.....	J. A. Jordan.....	Green Bay, Wis.
Secretary .....	H. W. Weiss.....	Chicago, Ill.
Treasurer .....	H. W. Lamberton...	Winona, Minn.
Assistant Secretary.....	Thomas Simpson....	Winona, Minn.
Chief Engineer.....	S. S. Purdy.....	La Crosse, Wis.
Attorney .....	Thomas Simpson....	Winona, Minn.
General Superintendent.....	Daniel Cunningham.	La Crosse, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
Mark T. Cox.....	New York, N. Y.	June 5, 1901.
J. A. Jordan.....	Green Bay, Wis.	June 5, 1901.
S. S. Palmer.....	New York, N. Y.	June 5, 1901.
Geo. B. Harris.....	Chicago, Ill.....	June 5, 1901.
J. C. Peasley.....	Chicago, Ill.....	June 5, 1901.
Daniel Cunningham.....	La Crosse, Wis.	June 5, 1901.
M. G. Norton.....	Winona, Minn....	June 5, 1901.
H. W. Lamberton .....	Winona, Minn....	June 5, 1901.
V. Simpson.....	Winona, Minn....	June 5, 1901.

Total number of stockholders at date of last election, 13.

Date of last meeting of stockholders for election of directors, June 6, 1900.

Post office address of general and operating office, Winona, Minn.

*Officers and Directors.*

## WISCONSIN &amp; MICHIGAN.

## OFFICERS.

Title.	Name.	Address.
President and Treasurer.....	S. M. Fischer.....	Chicago, Ill.
Vice President and Secretary.....	J. J. Coleman.....	Chicago, Ill.
Auditor.....	O. A. Koss.....	Chicago, Ill.
Traffic Manager.....	J. J. Coleman.....	Chicago, Ill.

## DIRECTORS.

Name.	Address.	Expiration of Term.
S. M. Fischer.....	Chicago, Ill.....	January 15, 1961.
J. N. Faithorn.....	Chicago, Ill.....	January 15, 1961.
John Bagley.....	Chicago, Ill.....	January 15, 1961.
J. C. Ames.....	Chicago, Ill.....	January 15, 1961.
J. J. Coleman.....	Chicago, Ill.....	January 15, 1961.

Total number of stockholders at date of last election, 46.

Date of last meeting of stockholders for election of directors, Jan. 16, 1900.

Post office address of general office, Chicago, Ill.

Post office address of operating office, Peshtigo, Wis.

*Officers and Directors.*

WHITCOMB & MORRIS.

OFFICERS.

Title.	Name.	Address.
President .....	J. H. Jenkins.....	Oshkosh, Wis.
Vice President.....	D. C. Buckstaff.....	Oshkosh, Wis.
Secretary and Treasurer.....	H. J. Sprague.....	Morris, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
J. H. Jenkins.....	Oshkosh, Wis....	.....
D. G. Buckstaff.....	Oshkosh, Wis....	.....
Chas. Barber.....	Oshkosh, Wis....	.....
H. J. Sprague.....	Morris, Wis.....	.....

Total number of stockholders at date of last election, 4.  
 Date of last meeting of stockholders for election of directors, June 23, 1900.  
 Post office address of general and operating office, Morris, Wis.

*Officers and Directors.*

WISCONSIN CENTRAL RY.

OFFICERS.

Title.	Name.	Address.
Chairman of the Board.....	George Cappell....	New York, N. Y.
President .....	H. F. Whitcomb....	Milwaukee, Wis.
Secretary and Assistant Attorney.....	Chas. M. Morris....	Milwaukee, Wis.
Treasurer .....	Frederick Abbott..	Milwaukee, Wis.
Assistant Treasurer .....	W. R. Hancock.....	Milwaukee, Wis.
Assistant Secretary.....	J. S. Dale.....	New York, N. Y.
Chief Engineer.....	Robt. B. Tweedy....	Milwaukee, Wis.
General Counsel.....	Charles C. Braman..	New York, N. Y.
Counsel .....	Howard Morris.....	Milwaukee, Wis.
Attorney .....	Thomas H. Gill....	Milwaukee, Wis.
Auditor .....	Robt. Toombs.....	Milwaukee, Wis.
Purchasing Agent.....	John A. Whaling....	Milwaukee, Wis.
General Freight Agent.....	Burton Johnson....	Milwaukee, Wis.
Assistant Freight Agent.....	C. E. Wilson.....	Milwaukee, Wis.
Division Freight Agent.....	J. S. Talbot.....	Milwaukee, Wis.
General Passenger Agent.....	L. W. Wood.....	Oshkosh, Wis.
General Claim Agent.....	Jas. C. Pond.....	Milwaukee, Wis.
General Superintendent.....	Lincoln Claffin....	Milwaukee, Wis.
Division Superintendents.....	Sumner J. Collins..	Milwaukee, Wis.
	A. R. Horn.....	Waukesha, Wis.
	E. H. Cutter.....	Stevens Point, Wis.
Superintendent of Telegraph.....	P. W. Drew.....	Milwaukee, Wis.
Land Commissioner.....	W. H. Killen.....	Milwaukee, Wis.

DIRECTORS.

Name.	Address.	Expiration of Term.
George Coppel.....	New York, N. Y.	2d Tues. in Oct., 1900.
John C. Brown.....	New York, N. Y.	2d Tues. in Oct., 1900.
William L. Bull.....	New York, N. Y.	2d Tues. in Oct., 1900.
H. F. Whitcomb.....	Milwaukee, Wis.	2d Tues. in Oct., 1900.
Charles C. Braman.....	New York, N. Y.	2d Tues. in Oct., 1900.
Fred T. Gates.....	New York, N. Y.	2d Tues. in Oct., 1900.
Francis R. Hart.....	Boston, Mass.....	2d Tues. in Oct., 1900.
Gerald L. Hoyt.....	New York, N. Y.	2d Tues. in Oct., 1900.
Howard Morris.....	Milwaukee, Wis..	2d Tues. in Oct., 1900.
James C. Colgate.....	New York, N. Y.	2d Tues. in Oct., 1900.

Total number of stockholders at date of last election, 6.  
 Date of last meeting of stockholders for election of directors, July 6, 1899.  
 Post office address of general and operating offices, Milwaukee, Wis.



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*Officers and Directors.*


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## WISCONSIN WESTERN.

## OFFICERS.

Title.	Name.	Address.
President .....	H. A. J. Upham.....	Milwaukee, Wis.
Vice President.....	Wm. E. Black.....	Milwaukee, Wis.
Secretary .....	Henry J. Droppers..	Milwaukee, Wis.
Treasurer .....	C. W. Morris.....	Milwaukee, Wis.
Auditor .....	Wm. Sillge.....	Wauzeka, Wis.
General Manager.....	N. L. James.....	Richland, Center, Wis.
General Superintendent.....	W. H. Thompson....	Wauzeka, Wis.

## DIRECTORS.

Name.	Address.	Expiration of Term.
H. A. J. Upham.....	Milwaukee, Wis..	November 17, 1900.
W. E. Black.....	Milwaukee, Wis..	November 17, 1900.
C. W. Morris.....	Milwaukee, Wis..	November 17, 1900.
E. J. Paul.....	Milwaukee, Wis..	November 17, 1900.
H. J. Dropper.....	Milwaukee, Wis..	November 17, 1900.
W. S. Fish.....	Racine, Wis.....	November 17, 1900.

Total number of stockholders at date of last election, 45.

Date of last meeting of stockholders for election of directors, Nov. 17, 1899.

Post office address of general office, Milwaukee, Wis.

Post office address of operating office, Wauzeka, Wis.

*Comparative Tables.*

ABBOTSFORD & NORTHEASTERN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.
Total.		Total.	Decrease.
\$232,000 00	Cost of equipment.....	\$232,000 00	.....
11,136 99	Cash and current assets.....	1,397 15	.....
	Other assets:		.....
	Profit and loss.....	8,741 69	.....
\$243,136 99	Grand total .....	\$243,138 84	\$998 15
	LIABILITIES.		
	None reported.		

AHNAPEE & WESTERN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
Total.		Total.	Increase.	Decrease.
\$453,829 83	Cost of road.....	\$455,593 49	\$1,763 66	.....
25,382 91	Cost of equipment.....	28,007 91	2,625 00	.....
1,775 38	Cash and current assets.....	2,174 48	399 10	.....
	Other assets:			.....
1,850 00	Materials and supplies.....	1,400 00		450 00
60,839 48	Profit and loss.....	69,501 97	8,662 49	.....
\$543,677 60	Grand total .....	\$556,677 85	\$13,450 25	\$450 00
	LIABILITIES.			
\$106,000 00	Capital stock.....	\$106,000 00	.....	.....
340,000 00	Funded debt .....	340,000 00	.....	.....
97,677 60	Current liabilities .....	110,677 85	13,000 25	.....
\$543,677 60	Grand total .....	\$556,677 85	\$13,000 25	.....

*Comparative Tables.*

BIG FALLS RY CO.

COMPARATIVE GENERAL BALANCE SHEET.

	June 30, 1900.
ASSETS.	Total.
Cost of equipment.....	\$7,857 34
Cash and Current assets.....	2,018 70
Grand total .....	\$9,876 34
LIABILITIES.	
Capital stock .....	\$1,000 00
Funded debt .....	7,715 49
Profit and loss .....	1,160 85
Grand total .....	\$9,876 34

BAYFIELD HARBOR & GREAT WESTERN (OPERATED BY  
BAYFIELD TRANSFER).

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
Total.		Total.	Increase.	Decrease.
\$3,404,817 96	Cost of road .....	\$3,405,201 15	\$381 39	
5,928 58	Cost of equipment .....	7,571 08	1,642 50	
1,324,600 00	Stocks owned .....	1,324,600 00		
1,655 44	Cash and current assets .....	3,561 63	1,906 19	
5 00	Other Assets:			
41,727 11	Materials and supplies .....			\$5 00
	Profit and loss .....	124,127 48	82,400 37	
\$4,778,735 89	Grand total .....	\$4,865,061 34	86,330 45	\$5 00
LIABILITIES.				
\$3,000,000 00	Capital stock .....	\$3,000,000 00		
1,500,000 00	Funded debt .....	1,500,000 00		
278,735 89	Current liabilities .....	365,061 34	\$86,325 45	
\$4,778,735 89	Grand total .....	\$4,865,061 34		





CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.—DEPOT, BELOIT,

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*Comparative Tables.*


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## CHICAGO, MILWAUKEE &amp; ST. PAUL.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.	Increase.	Decrease.
\$218,506,634 82	Cost of equipment .....	\$218,302,680 50		\$203,954 32
459,836 75	Stocks owned .....	358,040 75		101,796 00
8,985,723 75	Bonds owned .....	9,162,802 50	\$177,078 75	
7,232,230 16	Cash and current assets..	6,210,827 85		1,021,402 31
	Other Assets:			
2,467,793 88	Materials and supplies..	3,494,897 95	1,027,104 07	
589,854 02	Sinking fund, trustees..	573,183 91		16,670 11
2,965,166 75	Due from trustees.....	3,177,093 94	211,927 19	
10,000 00	Insurance department ..	10,000 00		
	Profit and loss, cash expended from earnings for construction of new lines, real estate, etc...	2,295,254 91	2,295,254 91	
\$241,217,240 13	Grand total .....	\$240,584,782 31	\$2,367,542 18	
	LIABILITIES.			
\$82,519,000 00	Capital stock .....	\$87,601,500 00	\$5,082,500 00	
136,226,500 00	Funded debt .....	131,147,000 00		\$5,079,500 00
5,933,481 84	Current liabilities .....	6,151,048 93	217,567 09	
30,790 00	Accrued interest on funded debt not yet payable, exclusive of coupons due July 1st, 1899 and 1900..	30,790 00		
625,944 02	Sinking fund .....	595,823 91		30,120 11
298,520 00	Rolling stock replacement fund .....	110,502 50		188,017 50
2,803,132 86	Renewals, improvement account .....	3,060,863 31	257,730 45	
12,779,871 41	Profit and loss .....	14,887,253 66	2,107,382 25	
\$241,217,240 13	Grand total .....	\$243,584,782 31	\$2,367,542 18	

## Comparative Tables.

## CHICAGO &amp; NORTHWESTERN.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.	Increase.	Decrease.
\$143,764,256 01	Cost of road .....	\$148,833,961 83	\$5,069,705 82	
34,397,965 60	Cost of equipment .....	34,073,762 69		\$324,202 91
14,442,971 61	Stocks owned .....	14,438,491 61		4,480 60
1,191,250 00	Bonds owned .....	4,024,250 00	2,833,000 00	
23,925 00	Other permanent invest- ments .....			23,925 00
65,000 00	Cost of Prop. Consolida- tion Coal Co., Western Town Lot Co. and Pio- neer Town Site Co. ....	65,000 00		
13,235,000 00	Bonds of the F. E. & M. V. R. R. & Wyo. Cent. Ry., deposited with trust- ees as security for a like amount of bonds by the C. & N. W. Ry. Co. W. & St. P. R. R. land grant .....	13,235,000 00		
6,990,801 53	Cash and current assets..	2,300,000 00	2,300,000 00	
		6,931,919 60	58,881 93	
	Other Assets:			
1,786,674 06	Material and supplies..	3,019,731 56	1,233,057 50	
8,987,677 04	Sinking fund .....	9,381,512 04	393,835 00	
173,803 51	Sundries .....			173,803 51
\$225,059,324 36	Grand total .....	\$236,303,629 33	\$11,244,304 97	
	LIABILITIES.			
\$66,492,320 53	Capital stock .....	\$66,234,320 53		\$258,000 00
134,645,000 00	Funded debt .....	144,833,000 00	\$10,188,000 00	
5,090,197 01	Current liabilities .....	6,900,752 58	1,810,555 57	
1,605,481 79	Accrued interest on fund- ed debt not yet payable	1,611,997 23	6,515 44	
7,342,698 70	Sinking fund installmen- t paid .....	7,568,198 70	225,500 00	
1,644,978 34	Accretions to sinking fund	1,813,313 34	168,335 00	
217,525 72	Mo. V. B. Ry. Co. & Bridge Co. ....	280,489 13	62,963 41	
	Fremont, Elkhorn & Mo. V. R. R. Co. ....	16,655 98	16,655 98	
	Profit and Loss:			
5,372,432 83	Surplus railroad income	6,915,100 78	1,542,667 95	
7,884 06	Surplus Consolidation Coal Co. ....	30,945 86	38,829 92	
2,640,805 38	Surplus land grants, land and tow lots, less de- ferred payment on same .....	160,746 92		2,480,058 46
\$225,059,324 36	Grand total .....	\$236,303,629 33	\$11,244,304 97	

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*Comparative Tables.*


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## CHICAGO, ST. PAUL, MINNEAPOLIS &amp; OMAHA.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
			Total.	Increase.      Decrease.
\$56,554,650 09	Cost of road and equipment..	\$56,101,206 54	.....	\$453,443 55
4,319,544 98	Stocks owned .....	4,314,611 65	.....	4,933 33
2,285,000 00	Bonds owned .....	3,284,060 00	\$1,026,000 00	.....
3,429,307 10	Cash and current assets.....	1,801,815 57	.....	1,627,491 53
577,568 95	Other Assets: Materials and supplies ....	707,146 08	129,577 13	.....
\$67,139,071 12	Grand total .....	\$66,208,779 84	.....	\$930,291 28
	LIABILITIES.			
\$34,050,126 62	Capital stock .....	\$34,050,126 62	.....	.....
26,235,800 00	Funded debt .....	27,255,800 00	\$1,020,000 00	.....
1,905,850 94	Current liabilities .....	1,550,833 79	.....	\$355,017 15
189,528 34	Accrued interest on funded debt not yet payable.....	188,748 34	.....	780 00
250,980 03	Accrued taxes not yet due....	260,535 70	9,555 67	.....
4,506,785 19	Profit and loss .....	2,902,735 39	.....	1,604,049 80
\$67,139,071 12	Grand total .....	\$66,208,779 84	.....	\$930,291 28



## Comparative Tables.

## CHICAGO, BURLINGTON &amp; QUINCY.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.	Increase.	Decrease.
\$226,752,657 62	Cost of road and equipment .....	\$233,602,754 81	\$6,850,097 19	.....
24,018,120 11	Stocks owned .....	25,456,310 13	1,488,190 02	.....
11,883,892 34	Bonds owned .....	10,916,751 60	.....	\$967,140 74
3,123,576 36	Other permanent investments .....	3,386,386 41	262,810 05	.....
305,826 96	Lands owned .....	306,001 81	174 85	.....
10,566,306 55	Cash and current assets..	6,321,860 39	.....	4,244,446 16
	Other Assets:			
1,981,326 22	Materials and supplies..	3,476,611 39	1,495,285 17	.....
12,582,097 82	Sinking fund .....	13,153,292 37	571,294 55	.....
\$291,213,803 98	Grand total .....	\$296,620,068 91	\$5,406,264 93	.....
	LIABILITIES.			
\$93,725,400 00	Capital stock .....	\$98,447,500 00	\$4,722,100 00	.....
126,437,700 50	Funded debt .....	135,899,100 00	9,461,400 00	.....
4,163,712 36	Current liabilities .....	5,646,447 42	1,482,735 06	.....
*175,859 12	Accrued interest on funded debt not yet payable	*141,777 67	.....	*\$34,081 45
10,000,000 00	Renewal fund .....	10,000,000 00	.....	.....
1,089,126 73	Current accts. bal. ....	1,487,933 49	398,806 76	.....
19,277,293 74	Sinking fund .....	20,375,366 13	1,098,072 29	.....
13,866,075 55	Income account .....	15,864,169 22	1,998,093 67	.....
9,533,000 00	Subscriptions, payments, under circular April 20, 1899 .....	.....	.....	9,533,000 00
13,297,354 72	Profit and loss .....	9,041,330 32	.....	4,256,024 40
\$291,213,803 98	Grand total .....	\$296,620,068 91	\$5,406,264 93	.....

\*Red figures.

*Comparative Tables.*

CHICAGO, LAKE SHORE & EASTERN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
Item.		Item.	Increase.	Decrease.
\$2,734,273 50	Cost of road .....	\$2,748,336 32	\$14,062 82	
1,664,887 56	Cost of equipment .....	1,664,887 56		
50,000 00	Stocks owned .....	50,000 00		
	New steel cars .....	1,464,650 00	1,464,650 00	
	New 50 ton cars .....	71,150 00	71,150 00	
805,607 39	Cash and current assets ....	634,225 05		\$171,382 34
	Other Assets:			
62,677 14	Materials and supplies.....	154,771 12	92,099 98	
\$5,317,445 59	Grand total .....	\$6,788,026 05	\$1,470,580 46	
	LIABILITIES.			
\$650,000 00	Capital stock .....	\$650,000 00		
3,230,000 00	Funded debt .....	3,230,000 00		
1,085,867 46	Current liabilities .....	2,150,452 56		
\$4,965,867 46		\$6,030,452 56	\$1,064,585 10	
351,578 13	Profit and loss .....	757,573 49	405,995 36	
\$5,317,445 59	Grand total .....	\$6,788,026 05	\$1,470,580 46	

CHICAGO & LAKE SUPERIOR.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.
Total.		Total.	Increase.
\$58,205 44	Cost of road .....	\$58,311 72	\$106 28
27 50	Cost of equipment .....	107 50	80 00
3,108 92	Profit and loss .....	11,195 17	8,086 25
\$61,341 86	Grand total .....	\$69,614 39	\$8,272 53
	LIABILITIES.		
\$18,000 00	Capital stock .....	\$18,000 00	
36,000 00	Funded debt .....	36,000 00	
7,341 86	Current liabilities .....	7,341 86	
	Accrued interest on funded debt not yet payable .....	15,614 39	\$8,272 53
\$61,341 86	Grand total .....	\$69,614 39	\$8,272 53

*Comparative Tables.*

CHICAGO, MADISON & NORTHERN (OPERATED BY ILLINOIS  
CENTRAL).

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.	Increase.	Decrease.
Total.				
\$10,592,931 87	Cost of road .....	\$10,689,318 36	\$96,386 49	.....
40,000 00	Stocks owned .....	40,000 00	.....	.....
12,066 93	Cash and current assets .....	11,339 08	.....	667 85
\$10,644,938 80	Grand total .....	\$10,740,657 44	\$95,718 64	.....
	LIABILITIES.			
\$50,000 00	Capital stock .....	\$50,000 00	.....	.....
6,870,000 00	Funded debt .....	6,870,000 00	.....	.....
3,724,938 80	Current liabilities .....	3,820,657 44	95,718 64	.....
\$10,644,938 80	Grand total .....	\$10,740,657 44	\$95,718 64	.....

CHIPPEWA RIVER & MENOMONIE.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.	Increase.	Decrease.
Total.				
\$235,863 26	Cost of road .....	\$237,120 62	\$1,257 36	.....
41,205 79	Cost of equipment .....	39,060 88	.....	\$2,144 91
43,747 99	Cash and current assets .....	23,254 97	.....	20,493 02
\$320,817 04	Grand total .....	\$299,436 47	\$1,257 36	\$22,637 93
	LIABILITIES.			
\$57,506 23	Current liabilities .....	\$53,977 55	.....	\$3,528 68
263,310 81	Profit and loss .....	245,458 92	.....	17,851 89
\$320,817 04	Grand total .....	\$299,436 47	.....	\$21,350 57

*Comparative Tables.*

DRUMMOND & SOUTH WESTERN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
			Total.	Increase.      Decrease.
\$126,801 02	Cost of road .....	\$126,446 18		\$354 84
44,530 63	Cost of equipment .....	44,530 63		
450 00	Cash and current assets .....			450 00
127 74	Other Assets: Materials and supplies.....	56 30		71 44
	Profit and loss .....	172 20	\$172 20	
\$171,909 39	Grand total .....	\$171,205 31		\$704 08
	LIABILITIES.			
\$10,000 00	Capital stock .....	\$10,000 00		
50,000 00	Funded debt .....	50,000 00		
110,881 61	Current liabilities .....	111,205 31	\$323 76	
1,027 84	Profit and loss .....			\$1,027 84
\$171,909 39	Grand total .....	\$171,205 31		\$704 08



*Comparative Tables.*

DULUTH, SUPERIOR & WESTERN TERMINAL CO.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.		Decrease.
\$768,913 03	Cost of road .....	\$1,465,491 29	\$696,578 26	.....
82,386 53	Cost of equipment .....	20,355 58	20,355 58	.....
	Cash and current assets .....	258,616 57	176,330 04	.....
\$851,299 56	Grand total .....	\$1,744,463 44	\$893,163 88	.....
	LIABILITIES.			
\$250,500 00	Capital stock .....	\$1,000,000 00	\$749,500 00	.....
500,000 00	Funded debt .....	500,000 00	.....	.....
40,934 22	Current liabilities .....	180,201 69	139,267 47	.....
4,354 08	Taxes not due .....	11,320 80	6,966 72	.....
20,000 00	Fund for renewal of ore docks .....	45,000 00	25,000 00	.....
35,511 26	Profit and loss .....	7,940 95	.....	27,570 31
\$851,299 56	Grand total .....	\$1,744,463 44	\$893,163 88	.....

DUNBAR & WAUSAUKEE.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.
Total.		Item.
\$71,033 02	Cost of road .....	\$71,033 02
6,100 00	Cost of equipment .....	6,100 00
	Profit and loss .....	19,843 78

No liabilities reported.

## Comparative Tables.

## EASTERN RAILWAY CO. OF MINNESOTA.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Item.	Increase.	Decrease.
\$17,423,971 35	Cost of road .....	\$18,662,116 88	\$1,238,145 53	.....
3,281,694 06	Cost of equipment .....	3,206,425 01	.....	\$75,269 05
565,701 00	Stocks owned .....	565,700 00	.....	1 00
1,225,000 00	Bonds owned .....	1,175,000 00	.....	50,000 00
629,820 95	Other permanent investments	1,242,636 13	612,815 18	.....
\$23,126,187 36		\$24,851,878 02		
1,851,510 61	Cash and current assets ....	3,256,652 46	1,405,141 85	.....
	Other Assets:			
192,689 68	Materials and supplies .....	127,637 23	.....	65,052 45
\$25,170,387 65	Grand total .....	\$28,236,167 71	\$3,065,780 06	.....
	LIABILITIES.			
\$12,500,000 00	Capital stock .....	\$16,000,000 00	\$3,500,000 00	.....
9,905,616 18	Funded debt .....	9,876,242 44	.....	\$29,373 74
749,182 33	Current liabilities .....	504,900 47	.....	244,281 86
108,750 00	Accrued interest on funded debt not yet payable .....	108,750 00	.....	.....
44,641 15	Taxes not due .....	61,181 63	16,540 48	.....
175,798 16	Funds for renewals .....	164,424 16	.....	11,374 00
1,686,399 83	Profit and loss .....	1,520,669 01	.....	165,730 82
\$25,170,387 65	Grand total .....	\$28,236,167 71	\$3,065,780 06	.....

## FAIRCHILD &amp; NORTH EASTERN.

## COMPARATIVE GENERAL BALANCE SHEET.

ASSETS.	June 30, 1900.	Year ending June 30, 1900.
	Item.	Increase.
Cost of road .....	\$207,865 22	\$28,930 56
Cost of equipment .....	28,029 33	939 58
LIABILITIES.		
Profit and loss .....	\$19,862 57	\$4,426 12

## Comparative Tables.

## GREEN BAY &amp; WESTERN.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.		ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
Total.	Total.		Increase.	Decrease.	
\$9,954,000 00		Cost of road .....	\$9,954,000 00		
122,000 00		Cost of equipment .....	121,000 00		1,000 00
154,610 00		Stocks owned .....	154,610 00		
148,689 85		Cash and Current assets .....	216,248 64	67,558 79	
	3,557 49	Other assets: Materials and supplies .....	10,376 90	6,819 41	
\$10,382,837 34		Grand total .....	\$10,456,235 57	73,378 20	
LIABILITIES.					
\$2,500,000 00		Capital stock .....	\$2,500,000 00		
7,600,000 00		Funded debt .....	7,600,000 00		
197,184 63		Current liabilities .....	257,367 55	60,182 92	
85,672 71		Profit and loss .....	98,867 99	13,195 28	
\$10,382,857 84		Grand total .....	\$10,456,235 54	\$73,378 20	

## HAWTHORNE, NEBAGAMON &amp; SUPERIOR.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.		ASSETS.	June 30, 1900.	Year ending June 30, 1900.
Item.	Total.		Item.	Increase.
\$40,000 00	\$40,000 00	Cost of road .....	\$41,850 89	\$1,850 89
10,000 00	10,000 00	Cost of equipment .....	12,474 27	2,474 27
		Cash and current assets .....	2,012 94	
\$50,000 00	\$50,000 00	Grand total .....	\$56,338 10	\$4,325 16
LIABILITIES.				
\$50,000 00		Capital stock .....	\$50,000 00	
		Profit and loss .....	6,338 10	
		Grand total .....	\$56,338 10	





*Comparative Tables.*

KEWAUNEE, GREEN BAY & WESTERN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
			Total.	Increase.      Decrease.
\$1,062,350 00	Cost of road .....	\$1,062,350 00		
6,000 00	Cost of equipment .....	6,000 00		
30,413 04	Cash and current assets .....	38,188 91	\$7,775 87	
\$1,098,763 04	Grand total .....	\$1,106,538 91	\$7,775 87	
	LIABILITIES.			
\$664,950 00	Capital stock .....	\$664,950 00		
408,000 00	Funded debt .....	408,000 00		
4,452 62	Current liabilities .....	17,439 78	\$12,987 16	
21,360 42	Profit and loss .....	16,149 13		\$5,211 29
\$1,098,763 04	Grand total .....	\$1,106,538 91	\$7,775 87	

MATTOON R'Y CO.

COMPARATIVE GENERAL BALANCE SHEET.

ASSETS.	June 30, 1900.	
	Item.	Total.
Cost of road .....	\$25,000 00	\$25,000 00
Cost of equipment .....	12,000 00	12,000 00
Grand total .....	\$37,000 00	\$37,000 00
LIABILITIES.		
Capital stock .....		\$4,000 00
Current liabilities—Assumed by Wisc. Timber & Land Co., in whose interest the road is run. They also take care of deficit.		



Comparative Tables.

MARINETTE, TOMAHAWK AND WESTERN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.		ASSETS.	June 30, 1900.		Year ending June 30, 1900.	
Total.	Total.		Increase.	Decrease.		
\$391,852 03	Cost of road .....	\$413,793 47	\$21,941 44	.....	.....	.....
9,630 26	Cost of equipment .....	13,757 36	4,127 10	.....	.....	.....
11,758 95	Cash and current assets .....	3,857 02	.....	.....	.....	\$7,901 93
\$413,241 24	Grand total .....	\$431,407 85	\$26,068 54	.....	.....	\$7,901 93
LIABILITIES.						
\$161,500 00	Capital stock .....	\$161,500 00	.....	.....	.....	.....
244,982 11	Current liabilities .....	265,902 08	20,919 97	.....	.....	.....
6,759 13	Profit and loss .....	4,005 77	.....	.....	.....	\$2,753 36
\$413,241 24	Grand total .....	\$431,407 85	\$20,919 97	.....	.....	\$2,753 36

MINNESOTA & WISCONSIN.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.		ASSETS.	June 30, 1900.		Year ending June 30, 1900.	
Item.	Total.		Item.	Total.	Increase.	Decrease.
.....	.....	Bonds owned....	\$18,250 00	\$18,250 00	.....	.....
.....	\$4,585 67	Cash and current assets .....	6,687 38	6,687 38	\$2,101 71	.....
.....	500 00	Other assets: Materials and supplies .....	1,180 00	1,180 00	680 00	.....
.....	\$5,085 67	Grand total.	\$26,117 38	\$26,117 38	\$2,781 71	.....
LIABILITIES.						
\$5,500 00	.....	Capital stock....	\$210,000 00	\$210,000 00	\$195,000 00	.....
.....	\$585,000 00	Funded debt.....	262,000 00	262,000 00	.....	\$323,000 00
.....	.....	Profit and loss...	4,980 30	4,980 30	.....	.....
\$5,500 00	\$585,000 00	Grand total.	\$476,980 30	\$476,980 30	\$195,000 00	\$323,000 00

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*Comparative Tables.*


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## MINNEAPOLIS, ST. PAUL &amp; SAULT STE. MARIE.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
		Total.	Increase.	Decrease.
\$43,572,899 43	Cost of road .....	\$44,068,160 42	\$495,260 99	.....
5,391,067 74	Cost of equipment .....	5,528,613 13	137,545 39	.....
301,850 00	Stocks owned .....	301,850 00		.....
41,200 00	Bonds owned .....	48,200 00	7,000 00	.....
3,843,306 58	Advances, new branches, in- cluding A. B. & N. W. Ry..	4,195,521 26	352,214 68	.....
231,815 56	Lands owned .....	414,093 11	182,277 55	.....
2,911,335 25	Cash and current assets .....	1,755,742 08		\$1,155,593 17
	Other Assets:			
377,982 39	Materials and supplies .....	669,576 77	291,594 38	.....
219,991 70	Profit and loss .....			219,991 70
\$56,891,448 65	Grand total .....	\$56,981,756 77	\$90,308 12	.....
	LIABILITIES.			
\$21,000,000 00	Capital stock .....	\$21,000,000 00		.....
33,318,404 61	Funded debt .....	33,686,697 31	368,292 70	.....
2,465,044 04	Current liabilities .....	1,526,179 35		\$938,864 69
83,000 00	Real estate mortgage, accrued interest on funded debt not yet payable .....	83,000 00		.....
25,000 00	Bills payable .....	25,000 00		.....
	Profit and loss .....	660,880 11	660,880 11	.....
\$56,891,448 65	Grand total .....	\$56,981,756 77	\$90,308 12	.....

*Comparative Tables.*

NORTHERN PACIFIC.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.		Year ending June 30, 1900.	
		Item.	Total.	Increase.	Decrease.
\$297,156,570 48	Cost of road..		\$290,999,678 48		\$6,156,892 00
14,930,396 31	Cost of equip- ment .....		17,163,139 33	\$2,232,743 02	
3,347,407 34	Stocks owned	3,111,378 31			
475,797 61	Bonds owned.	10,225,643 52	13,337,021 83	9,989,614 49	
692,157 05	Ins. fund as- sets .....		522,695 44	46,897 83	
8,511,241 01	Lands owned, Land Dep't, curr't assets .....		1,991,902 38	1,299,745 33	
1,174,239 68	Cash and cur- rent assets..		11,130,706 49	2,619,465 48	
1,763,216 26	Bet. Enlg. f'd assets .....		3,095,676 30	1,921,436 62	
110,932 60	Other Assets: Material and supplies .....		3,011,460 68	1,248,244 42	
795,991 73	Sinking fund, cash .....		281,730 66	170,798 06	
298,350 00	Advances to sub-lines .....				795,991 73
	Cash & bonds available for red. of mtg. debt .....				298,350 00
\$329,256,300 07	Grand total		\$341,534,011 59	\$12,277,711 52	\$7,251,233 73
	LIABILITIES				
\$155,000,000 00	Capital stock.		\$155,000,000 00		
160,387,600 00	Funded debt.		171,343,596 76	\$10,958,996 76	
1,612,400 00	Gen. Mtg. con- version fund .....				1,612,400 00
6,275,337 42	Cur. liabilities		7,996,813 41	1,721,475 99	
436,400 00	Accrued Int. on funded debt not yet payable .....		531,837 92	95,437 92	
647,778 95	Liquidat'n f'd		631,263 21		16,515 74
475,797 61	Ins. fund.		522,695 44	46,897 83	
3,000,000 00	Special Res. f'd for divi- dends on pfd stock .....		3,000,000 00		
1,420,986 09	Profit and loss .....		2,504,804 85	1,083,818 76	
\$329,256,300 07	Grand total		\$341,534,011 59	\$12,277,711 52	

*Comparative Tables.*

NORTHWESTERN COAL R'Y CO.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
			Total.	Increase.      Decrease.
<b>Total.</b>		<b>Total.</b>	<b>Increase.</b>	<b>Decrease.</b>
\$924,235 96	Cost of road .....	\$775,729 66		\$148,506 30
17,849 86	Cost of equipment .....	17,849 86		
999,300 00	Lands owned .....	999,300 00		
15,707 05	Cash and current assets.....	19,701 41	3,994 36	
	Other Assets:			
5,354 02	Materials and supplies ....	3,849 22		1,504 80
493 67	Sundries .....	1,150 69	757 02	
3,404 07	Profit and loss .....			
<b>\$1,966,344 63</b>	<b>Grand total .....</b>	<b>\$1,817,580 84</b>		<b>\$148,763 79</b>
	LIABILITIES.			
\$1,000,000 00	Capital stock .....	\$1,000,000 00		
944,000 00	Funded debt .....	944,000 00		150,000 00
14,401 19	Current liabilities .....	11,108 41		3,292 78
7,943 44	Accrued interest on funded debt not yet payable.....	6,616 66		1,326 78
	Profit and loss .....	5,855 77	5,855 77	
<b>\$1,966,344 63</b>	<b>Grand total .....</b>	<b>\$1,817,580 84</b>		<b>\$148,763 79</b>

OSHKOSH TRANSPORTATION CO. (OPERATED BY C. & N. W.).

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
			Total.	Increase.
<b>Total.</b>		<b>Total.</b>		
\$70,000 00	Cost of road .....	\$70,000 00		
3,756 05	Cost of equipment .....	3,848 14		\$92 09
<b>\$73,756 05</b>	<b>Grand total .....</b>	<b>\$73,848 14</b>		<b>\$92 09</b>
	LIABILITIES.			
\$70,000 00	Capital stock .....	\$70,000 00		
3,756 05	Profit and loss .....	3,848 14		92 09
<b>\$73,756 05</b>	<b>Grand total .....</b>	<b>\$73,848 14</b>		<b>\$92 09</b>

*Comparative Tables.*

ST. PAUL & DULUTH.

COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.	
			Increase.	Decrease.
Item.		Item.		
\$11,863,818 81	Cost of road .....	\$8,030,318 07		\$3,833,500 74
1,471,940 87	Cost of equipment.....	1,973,183 02	\$501,242 15	
\$13,335,759 68		\$10,003,501 09		
209,599 00	Stocks owned .....	210,068 38	469 38	
1,000 00	Bonds owned .....	1,001 00	1 00	
1,732 26	Land for quarries near Kettle River .....			1,732 26
\$212,331 26		\$211,069 38		
493,896 83	Land contracts and notes .....			493,896 83
771,625 08	Cash and current assets .....	376,232 93		395,392 15
	Other Assets:			
86,301 45	Materials and supplies .....	114,221 89	27,920 44	
152,281 79	Sinking fund .....	175,526 04	23,244 25	
91,083 20	Equipment trust .....			91,083 20
	J. P. Morgan & Co. in acct. with Redemption Fund for retirement of preferred stock .....	245,444 20	245,444 20	
\$15,143,279 29	Grand total .....	\$11,125,995 53		\$4,017,283 76
	LIABILITIES.			
\$8,759,740 51	Capital stock .....	\$4,897,351 67		\$3,862,388 84
5,010,583 20	Funded debt .....	5,265,429 73	254,846 53	
250,624 69	Current liabilities .....	244,340 55		6,284 14
63,800 00	Accrued interest on funded debt not yet payable .....	64,946 25	1,146 25	
152,281 79	Sinking fund for redemption of T. F. & S. S. R. R. bonds .....	168,163 84	15,882 05	
	Sinking fund for redemption of S. & St. P. R. R. bonds .....	7,362 20	7,362 20	
4,800 00	Preferred shares drawn for retirement but not surrendered for cancellation .....	2,800 00		2,000 00
5,128 73	Redemption fund for retirement of preferred stock.....	248,823 47	243,694 74	
28,266 13	T. F. & S. S. land and stumpage refts. ....	41,743 70	13,477 57	
506,583 83	Defined Land and S. receipts.....			506,583 83
361,470 41	Profit and loss .....	185,034 12		176,436 29
\$15,143,279 29	Grand total .....	\$11,125,995 53		\$4,017,283 76



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*Comparative Tables.*


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## WINONA BRIDGE R'Y CO.

## COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.	Year ending June 30, 1900.
Total.		Item.	Decrease.
\$784,000 00	Cost of road .....	\$784,000 00	.....
20,197 91	Profit and loss .....	16,055 90	\$4,742 01
\$804,797 91	Grand total .....	\$800,055 90	\$4,742 01
LIABILITIES.			
\$400,000 00	Capital stock .....	\$400,000 00	.....
384,000 00	Funded debt .....	384,000 00	.....
14,397 91	Current liabilities .....	9,655 90	\$4,742 01
6,400 00	Accrued interest on funded debt not yet payable .....	6,400 00	.....
\$804,797 91	Grand total .....	\$800,055 90	\$4,742 01

Comparative Tables.

WISCONSIN & MICHIGAN.  
COMPARATIVE GENERAL BALANCE SHEET.

June 30, 1899.	ASSETS.	June 30, 1900.		Year ending June 30, 1900.	
		Total.	Item.	Increase.	Decrease.
\$1,902,000 00	Cost of road .....	\$1,934,333 58	\$1,934,333 58	\$32,333 58	.....
234,483 97	Cost of equipment ...	112,294 69	112,294 69	.....	122,189 28
	Other permanent investments .....		3,992 46	.....	.....
	Cash and current assets .....		74,235 75	.....	.....
	Other Assets:				
	Materials and supplies .....		2,337 21	.....	.....
	Profit and loss .....		113,552 48	.....	.....
\$2,136,483 97	Grand total .....	\$2,046,628 27	\$2,240,746 17	\$32,333 58	\$122,189 28
	LIABILITIES.				
\$951,500 00	Capital stock .....	\$951,500 00	\$951,500 00	.....	.....
951,000 00	Funded debt .....	951,000 00	951,000 00	.....	.....
	Current liabilities .....		338,246 17	.....	.....
\$1,902,500 00	Grand total .....	\$1,902,500 00	\$2,240,746 17	.....	.....

WHITCOMB & MORRIS.

COMPARATIVE GENERAL BALANCE SHEET.

ASSETS.	June 30, 1900.
	Total.
Cost of road .....	\$7,094 40
Cost of equipment .....	2,975 00
Cash and current assets .....	424 10
Grand total .....	\$10,493 50
LIABILITIES.	
Capital stock .....	\$10,000 00
Profit and loss .....	493 50
Grand total .....	\$10,493 50

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*Comparative Tables.*


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## WISCONSIN CENTRAL.

## COMPARATIVE GENERAL BALANCE SHEET.

ASSETS.	June 30, 1900.
	Total.
Cost of road .....	\$48,101,297 45
Cost of equipment .....	4,067,632 07
Stocks owned .....	2,696,649 12
Bonds owned .....	445,000 00
Impls., real estate and improvements .....	524,705 12
Geo. Cappell, trustee .....	78,038 19
Lands owned, cont.....	259,304 98
Cash and current assets .....	1,564,985 87
Other Assets:	
Materials and supplies .....	644,477 52
Sinking fund .....	44,581 44
Sundries .....	311 39
Grand total .....	\$58,026,983 15
LIABILITIES.	
Capital stock .....	\$30,000,000 00
Funded debt .....	26,276,500 00
Current liabilities .....	854,331 47
Real estate mortgage .....	3,855 00
Accrued interest on funded debt not yet payable .....	15,520 00
Deposit under reorganization plan in suspense .....	31,899 84
Equipment renewal account .....	21,772 57
Rebuilding expense .....	4,750 00
Sundries .....	420 62
Land department income .....	324,988 51
Profit and loss .....	492,915 14
Grand total .....	\$58,026,983 15

*Comparative Tables.*

## WISCONSIN WESTERN (SUCCESSOR TO KICKAPOO V. &amp; N.)

## COMPARATIVE GENERAL BALANCE SHEET.

ASSETS.	June 30, 1900.
	Total.
Cost of road .....	\$526,767 08
Cost of equipment .....	19,304 00
Lands owned, right of way and depot grounds and 65 village lots.....	5,163 39
Cash and current assets .....	8,494 39
Other Assets:	
Materials and supplies .....	6,261 69
Profit and loss .....	
Grand total .....	\$565,990 55
LIABILITIES.	
Capital stock .....	\$521,400 00
Current liabilities .....	44,590 55
Grand total .....	\$565,990 55

## Statistical Tables.

Capital stock of local and proportional—Wisconsin, June 30, 1900.

NAME OF COMPANY.	Number of shares authorized.	Common.	Preferred.	Total.
1 Abbotsford & Northeast'n	1,200.00	1,200.00	.....	\$120,000 00
2 Ahnapee & Western .....	5,000.00	5,000.00	.....	500,000 00
3 Bayfield Transfer .....	30,000.00	30,000.00	.....	3,000,000 00
4 Chicago, Mil. & St. Paul..	225,048.26	121,119.62	103,928.64	22,504,826 00
5 Chicago & Northwestern.	190,263+	119,063.00	64,343.00	19,026,300 00
6 C., St. P., Minn. & O.*	198,500.00	119,100.00	79,400.00	19,850,000 00
7 Chi., Burlington & Q.*.	34,161.28	34,161.28	.....	3,416,128 25
8 Chi., Lake Shore & East.	1,000.00	1,000.00	.....	100,000 00
9 Chicago & Lake Superior	10,000.00	10,000.00	.....	1,000,000 00
10 Chi., Madison & North.	197.38	197.38	.....	19,738 48
11 Chippewa R. & Menom'ie	15,000.00	15,000.00	.....	1,500,000 00
12 Dul., S. Shore & Atlantic*	42,680.00	23,280.00	19,400.00	4,268,000 00
13 Dul., Superior & Western	20,000.00	25,000.00	.....	2,000,000 00
14 East. Ry. Co. of Minn. ....	.....	.....	.....	.....
15 Green Bay & Western....	25,000.00	25,000.00	.....	2,500,000 00
16 Hazelhurst & S. Eastern	4,000.00	4,000.00	.....	100,000 00
17 Iola & Northern .....	17,000.00	17,000.00	.....	1,700,000 00
18 Kewaunee, G. B. & West.	6,800.00	4,800.00	2,000.00	680,000 00
19 L. S. Ter. & Tr. Ry. Co. ....	.....	.....	.....	.....
20 Mattoon Ry. Co. ....	100.00	100.00	.....	10,000 00
21 Milwaukee & Superior....	.....	.....	.....	.....
22 Marshfield & South East.	15,000.00	7,500.00	7,500.00	1,500,000 00
23 Mar., Tomah'k & West'n	10,000.00	10,000.00	.....	1,000,000 00
24 Minnesota & Wisconsin...	2,100.00	2,100.00	.....	210,000 00
25 M., St. P. & Sault Ste. M.	44,520.00	29,680.00	14,840.00	4,452,000 00
26 Northern Pacific* .....	32,240.00	16,640.00	15,600.00	3,240,000 00
27 Northwest'n Coal Ry. Co.	10,000.00	10,000.00	.....	1,000,000 00
28 Oshkosh Transport'n Co.	700.00	700.00	.....	70,000 00
29 Winona Bridge Ry. Co.*	2,096.00	2,096.00	.....	209,600 00
30 Wisconsin & Michigan....	4,918.00	4,918.00	.....	491,800 00
31 Whitcomb & Morris .....	100.00	100.00	.....	10,000 00
32 Wis. Central Ry. Co. ....	267,132.00	155,827.00	111,305.00	26,713,290 00
33 Hawthorn, Neb. & Sup.	500.00	500.00	.....	50,000 00
34 St. Paul & Duluth Ry....	6,000.00	3,300.00	3,300.00	660,000 00
35 Wisconsin Western Ry..	6,000.00	6,000.00	.....	600,000 00
	1,227,856.82	699,382.28	421,616.00	\$122,501,682.73

\*Proportionate.

*Statistical Tables.*

## Capital stock of interstate railways.

NAME OF COMPANY.	Par value of shares.	Total amount issued and outstanding.	DIVIDENDS DECLARED 1900.	
			Rate.	Amount.
1 Abbotsford & Northeastern .....	\$100 00	\$120,000 00	.....	\$11,197 58
2 Ahnapee & Western .....	100 00	439,500 00	.....	.....
3 Bayfield Transfer .....	100 00	3,000,000 00	.....	.....
4 Chicago, Milwaukee & St. Paul..	100 00	22,504,826 00	2½, 3½	1,250,604 10
5 Chicago & Northwestern .....	100 00	19,026,321 60	.....	1,222,625 56
6 Chicago, St. Paul, Minn. & Omaha	100 00	14,134,207 56	.....	712,189 56
7 Chicago, Burlington & Quincy*..	100 00	3,416,128 25	6	202,189 82
8 Chicago, Lake Shore & Eastern ..	100 00	100,000 00	.....	.....
9 Chicago & Lake Superior .....	100 00	18,000 00	.....	.....
10 Chicago, Madison & Northern ..	100 00	19,738 48	.....	.....
11 Chippewa River & Menomonie ..	100 00	.....	.....	.....
12 Duluth, South Shore & Atlantic*	100 00	4,268,000 00	.....	.....
13 Duluth, Superior & Western .....	100 00	1,000,000 00	.....	185,070 00
14 Eastern Railway Co. of Minn.....	100 00	.....	.....	.....
15 Green Bay & Western .....	100 00	2,500,000 00	2½	62,500 00
16 Hazelhurst & South Eastern .....	25 00	100,000 00	6	6,000 00
17 Iola & Northern .....	100 00	71,400 00	.....	.....
18 Kewaunee, Green Bay & Western	100 00	664,950 00	.....	.....
19 Lake Sup. Term. & Trans. Ry. Co.	100 00	.....	.....	.....
20 Mattoon Ry. Co. ....	100 00	4,000 00	.....	.....
21 Milwaukee & Superior .....	100 00	.....	.....	.....
22 Marshfield & South Eastern .....	100 00	400,000 00	.....	.....
23 Marinette, Tomahawk & Western	100 00	161,500 00	.....	.....
24 Minnesota & Wisconsin .....	100 00	200,000 00	.....	.....
25 Minn., St. P. & Sault Ste. Marie	100 00	4,452,000 00	.....	.....
26 Northern Pacific* .....	100 00	3,240,000 00	3 & 4	112,320 00
27 Northwestern Coal Ry. Co. ....	100 00	1,000,000 00	.....	.....
28 Oshkosh Transportation Co. ....	100 00	70,000 00	.....	5,050 00
29 Winona Bridge Ry. Co. ....	100 00	209,600 00	.....	.....
30 Wisconsin & Michigan .....	100 00	491,800 00	.....	.....
31 Whitcomb & Morris .....	100 00	10,000 00	.....	.....
32 Wisconsin Central Ry. Co. ....	100 00	26,713,290 00	.....	.....
33 Hawthorn, Nebagamon & Sup....	100 00	.....	.....	.....
34 St. Paul & Duluth Ry. ....	100 00	269,254 24	7	15,360 92
35 Wisconsin Western Ry. ....	100 00	521,400 00	.....	.....
	100 00	\$109,086,016 23	.....	\$3,785,107 54

*Statistical Tables.*

FUNDED DEBT—WISCONSIN.

Mortgage bonds, miscellaneous obligations and income bonds, June 30, 1900.

NAME OF COMPANY.	Class of bonds or obligations.	TIME.	
		Date of issue.	When due.
1 Abbotsford & Northeastern.....	Com. 1st Mtg.....	Oct. 1, 1889	Oct. 1, 1919
2 Ahnapee and Western.....	1st Mtg.....	May 31, 1892	July 1, 1902
3 Big Falls R'y Co.....	Chattel Mtg.....	July 12, 1898	Jan. 12, 1900
4 Bayfield Transfer R'y.....	1st Mtg.....	Jan. 15, 1897	Jan. 15, 1927
5 Chicago, Milwaukee & St. Paul.....	Mtg. Bonds.....		
6 Chicago & Northwestern.....			
7 Chicago, St. Paul, Minn. & Omaha.....			
8 Chicago, Burlington & Quincy*	Various.....		
9 Chicago, Lake Shore & Eastern.....	1st Mtg.....	July 1, 1894	July 1, 1914
10 Chicago & Lake Superior.....	1st Mtg.....	Aug. 1, 1897	
11 Chicago, Madison & Northern.....	1st Mtg.....	1888	1905
12 Drummond & South Western.....	1st Mtg.....	Nov. 2, 1891	Nov. 2, 1921
13 Duluth, South Shore & Atlantic.....	Various.....		
14 Eastern Railway Co. of Minnesota.....	Car Companies.....		
15 Green Bay and Western.....	Income Bonds.....	Aug. 1, 1893	
16 Kewaunee, Green Bay & Western.....	1st Mtg.....	1891	1921
17 Lake Super. Term. & Transfer R'y Co.....			
18 Marshfield & South Eastern.....	1st Mtg.....	Feb. 20, 1896	Feb. 20, 1897
19 Minnesota & Wisconsin.....	1st Mtg.....	July 6, 1899	July 19, 1900
20 Minn., St. Paul & Sault Ste. Marie.....	Various.....		
21 Northern Pacific.....	Car Companies.....		
22 Northwestern Coal R'y Co.....	1st Mtg.....	1893	1923
23 Winona Bridge R'y Co.....	Various.....	Sept. 1, 1900	Sept. 1, 1915
24 Wisconsin & Michigan.....	1st Mtg.....	Jan. 1, 1895	Jan. 1, 1945
25 Wisconsin Central R'y Co.....	Various.....		
26 St. Paul & Duluth.....	Various.....		

## Statistical Tables.

## FUNDED DEBT--WISCONSIN.

Mortgage bonds, miscellaneous obligations and income bonds, June 30, 1900--Con.

NAME OF COMPANY.	Amount of authorized issue.	Amount issued.	Amount outstanding.	Cash realized on amount issued.
1 Abbotsford & Northeastern ....	\$112,000 00	\$112,000 00	\$112,000 00	Issued for
2 Ahnapee & Western.....	340,000 00	340,000 00	340,000 00	construct'n
3 Big Falls R'y Co.....			7,715 49	\$289,000
4 Bayfield Transfer R'y.....	1,500,000 00	1,500,000 00	1,500,000 00	
5 Chicago, Milwaukee & St. Paul .....			33,691,664 00	
6 Chicago & Northwestern.....		45,027,077 11	41,604,401 07	
7 Chi., St. Paul, Minn. & Omaha.....	17,529,589 98	11,646,322 48	11,313,882 58	4,112,810 83
8 Chicago, Burlington & Quincy.....	6,044,809 40	6,044,809 40	4,715,698 77	
9 Chicago, Lake Shore & East'n .....	130,000 00	130,000 00	130,000 00	
10 Chicago & Lake Superior.....	36,000 00	36,000 00	36,000 00	
11 Chicago, Madison & Northern.....	2,712,060 40	2,712,060 40	2,712,060 40	2,712,060 40
12 Drummond & South Western.....	50,000 00	50,000 00	50,000 00	50,000 00
13 Duluth, South Shore & Atlan'c .....	5,509,600 00	4,560,358 00	4,462,000 00	
14 Eastern R'y Co. of Minnesota.....	1,705,000 00	828,380 00	828,380 00	799,545 06
15 Green Bay & Western.....	7,600,000 00	7,600,000 00	7,600,000 00	
16 Kewaunee, Green Bay & West'n .....	408,000 00	408,000 00	408,000 00	
17 L. S'p'r Term. & Tran-F'r R'y Co.....			1,950 00	
18 Marshfield & South Eastern.....	1,950,000 00	450,000 00	450,000 00	
19 Minnesota & Wisconsin.....	262,000 00	262,000 00	243,750 00	
20 Minn., St. P. & S. Ste. Marie.....	12,681,268 00	9,959,612 00	8,882,560 00	7,313,212 63
21 Northern Pacific.....	4,399,728 80		3,556,841 60	
22 Northwestern Coal R'y Co.....	2,000,000 00	1,000,000 00	794,000 00	
23 Winona Bridge R'y Co.....	209,600 00	201,216 00	201,216 00	201,216 00
24 Wisconsin & Michigan.....	490,716 00	490,716 00	490,716 00	
25 Wisconsin Central R'y Co.....	31,916,829 94	29,002,410 00	22,847,341 16	
26 St. Paul & Duluth.....	501,050 00	281,050 00	269,857 50	280,401 96
Total.....	\$98,091,252 52	\$122,661,991 39	\$147,443,084 57	\$15,758,246 88



*Statistical Tables.*

FUNDED DEBT—WISCONSIN.

Mortgage bonds, miscellaneous obligations and income bonds, June 30, 1900—Con.

NAME OF COMPANY.	INTEREST.			
	Rate.	When payable.	Amount accrued during year.	Amount paid during year.
	Pr ct.			
1 Abbotsford & Northeastern .....	6	Oct. and Apr.	\$6,720 00	.....
2 Ahnapee & Western .....	6	Semi-annually.	20,400 00	12,000 00
3 Big Falls R'y Co. ....				540 08
4 Bayfield Tranfer R'y .....	5	Semi-annually.	75,000 00	.....
5 Chicago, Milwaukee & St. Paul .....			1,704,061 48	1,761,337 13
6 Chicago & Northwestern .....			2,167,199 67	2,161,823 35
7 Chicago, St. P. & Minn. & Omaha .....			601,127 48	1,598,915 10
8 Chicago, Buttington & Quincy .....			233,997 27	234,097 30
9 Chicago, Lake Shore & Eastern .....	6	Semi-annually.	7,800 00	7,800 00
10 Chicago & Lake Superior .....	6	Semi-annually.	2,160 00	.....
11 Chicago, Madison & Northern .....	6	Semi-annually.	135,603 02	135,603 02
12 Drummond & South Western .....	5	Semi-annually.	3,000 00	3,000 00
13 Duluth, South Shore & Atlantic .....			167,781 80	167,781 80
14 Eastern Railway Co. of Minnesota .....			36,975 00	36,962 65
15 Green Bay & Western .....			15,000 00	15,000 00
16 Kewaunee, Green Bay & Western .....	5	Semi-annually.	20,400 00	20,400 00
17 Lake Sup'r Term. & Tran R'y Co. ....				.....
18 Marshfield & South Eastern .....	6 & 5	Annually .....	27,000 00	.....
19 Minnesota & Wisconsin .....	4			.....
20 Minn., St. P. & Sault Ste. Marie .....	4 & 5	Semi-annually.	365,238 40	340,115 04
21 Northern Pacific .....			121,990 96	121,808 97
22 Northwestern Coal R'y Co. ....	5	Semi-annually.	40,810 57	40,616 53
23 Winona Bridge R'y Co. ....	5	Semi-annually.	10,060 80	10,060 80
24 Wisconsin & Michigan .....	5	Semi-annually.	24,535 80	142 01
25 Wisconsin Central R'y Co. ....		Semi-annually.	908,359 08	463,272 82
26 St. Paul & Duluth .....			13,295 37	13,235 75
Total .....			\$6,698,316 68	\$6,187,515 35

\* Proportionate.

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*Statistical Tables.*


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## UNDEBTED DEBT—WHOLE LINE.

Mortgage bonds, miscellaneous obligations and income bonds, June 30, 1900.

NAME OF COMPANY.	Class of bonds or obligations.	TIME.	
		Date of issue.	When due.
1 Abbottsford & Northeastern.....	Com 1st Mtg.....	Oct. 1, 1889	Oct. 1, 1919
2 Ahnapee & Western.....	1st Mtg.....	May 31, 1892	July 1, 1902
3 Big Falls R'y Co.....	Chattel Mtg.....	July 12, 1898	Jan. 12, 1900
4 Bayfield Transfer R'y.....	1st Mtg.....	Jan. 15, 1897	Jan. 15, 1927
5 Chicago, Milwaukee & St. Paul.....	Mtg. Bonds.....		
6 Chicago & Northwestern.....	Various.....		
7 Chicago, St. Paul, Minn. & Omaha.....	Various.....		
8 Chicago, Burlington & Northern.....	Various.....		
9 Chicago, Lake Shore & Eastern.....	Various.....		
10 Chicago & Lake Superior.....	1st Mtg.....	Aug. 1, 1897	
11 Chicago, Madison & Northern.....	1st Mtg.....	1888	1935
12 Drummond & South Western.....	1st Mtg.....	Nov. 2, 1891	Nov. 2, 1921
13 Duluth, South Shore & Atlantic.....	1st Mtg.....		
14 Duluth, Superior & Western.....	1st Mtg.....	Aug. 13, 1897	July 1, 1947
15 Eastern Railway Co. of Minnesota.....	1st Mtg.....	Apr., 1898	Apr., 1948
16 Green Bay & Western.....	Income Bds.....	Aug. 1, 1896	
17 Kewaunee, Green Bay & Western.....	1st Mtg.....	1891	1921
18 Marshfield & South Eastern.....	1st Mtg.....	Feb. 20, 1896	Feb. 25, 1897
19 Minnesota & Wisconsin.....	1st Mtg.....	July 1, 1895	July 19, 1919
20 Minneapolis, St. P. & Sault Ste. Marie.....	Various.....		
21 Northern Pacific.....	Various.....		
22 Northwestern Coal R'y Co.....	1st Mtg.....	1893	1923
23 Wisconsin & Michigan.....	1st Mtg.....	Jan. 1, 1895	Jan. 1, 1945
24 Wisconsin Central R'y Co.....	Various.....		
25 St. Paul & Duluth.....	Various.....		

*Statistical Tables.*

FUNDED DEBT—WHOLE LINE.

Mortgage bonds, miscellaneous obligations and income bonds, June 30, 1900—Con.

NAME OF COMPANY.	Amount of authorized issue.	Amount issued	Amount outstand- ing.	Cash real- ized on amount issued.
1 Abbotsford & Northeastern....	\$112,000 00	\$112,000 00	\$112,000 00	Issued for construct'n 289,000 00
2 Ahnapee & West'n.....	340,000 00	340,000 00	340,000 00	7,715 49
3 Big Falls R'y Co.....	1,500,000 00	1,500,000 00	1,500,000 00	131,147,000 00
4 Bayfield Transfer R'y.....	1,500,000 00	1,500,000 00	1,500,000 00	99,050,700 29
5 Chicago, Milwaukee St. Paul.....	348,171,000 00	156,748,000 00	144,833,000 00	9,908,000 08
6 Chicago & Northwestern.....	42,219,800 00	28,104,800 00	27,255,800 00	135,899,100 00
7 Chic. St. P. Minn. & Omaha.....	174,202,000 00	174,202,000 00	174,202,000 00	3,230,000 00
8 Chicago, Burlington & North'n.....	3,230,000 00	3,230,000 00	3,230,000 00	3,230,000 00
9 Chicago, Lake Shore & East'n.....	35,000 00	35,000 00	35,000 00	6,870,000 00
10 Chicago & Lake Superior.....	6,870,000 00	6,870,000 00	6,870,000 00	50,000 00
11 Chicago, Madison & Northern.....	50,000 00	50,000 00	50,000 00	12,552,000 00
12 Drummond & South Western.....	28,400,000 00	23,507,000 00	23,000,000 00	500,000 00
13 Duluth, South Shore & Atlan'c.....	500,000 00	500,000 00	500,000 00	9,700,000 00
14 Duluth, Superior & Western.....	20,000,000 00	9,700,000 00	9,700,000 00	9,403,412 50
15 Eastern R'y Co. of Minnesota.....	7,600,000 00	7,600,000 00	7,600,000 00	408,000 00
16 Green Bay & Western.....	408,000 00	408,000 00	408,000 00	450,000 00
17 Kewaunee, Green Bay & West'n.....	1,950,000 00	450,000 00	450,000 00	243,750 00
18 Marshfield & South Eastern.....	282,000 00	282,000 00	282,000 00	33,018,000 00
19 Minnesota & Wisconsin.....	49,579,000 00	36,741,000 00	33,018,000 00	27,373,138 87
20 Minn., St. P. & Sault Ste. Marie.....	210,110,000 00	210,110,000 00	171,002,000 00	1,000,000 00
21 Northern Pacific.....	2,000,000 00	1,000,000 00	794,000 00	951,000 00
22 Northwestern Coal R'y Co.....	951,000 00	951,000 00	951,000 00	26,276,500 00
23 Wisconsin & Michigan.....	36,590,000 00	33,317,000 00	26,276,500 00	5,098,217 50
24 Wisconsin Central R'y Co.....	9,110,000 00	5,110,000 00	4,906,500 00	Total
25 St Paul & Duluth.....	\$952,190,800 00	\$190,738,800 00	\$730,130,365 49	\$170,597,469 24
Total .....	\$952,190,800 00	\$190,738,800 00	\$730,130,365 49	\$170,597,469 24

## Statistical Tables.

## FUNDED DEBT—WHOLE LINE.

Mortgage bonds, miscellaneous obligations and income bonds, June 30, 1900—Con.

NAME OF COMPANY.	INTEREST.			
	Rate.	When payable.	Amount accrued during year.	Amount paid during year.
	Pr ct.			
1 Abbotsford & Northeastern .....	6	Semi-annually..	\$5,720 00	.....
2 Ahnapee & Western.....	6	Semi-annually..	20,400 00	\$12,000 00
3 Big Falls R'y Co.....				540 08
4 Bayfield Transfer R'y.....	5	Semi-annually..	*75,000 00	.....
5 Chicago, Milwaukee & St. Paul.....		semi-annually..	6,633,170 41	6,856,119 59
6 Chicago & Northwestern.....			6,938,477 21	6,921,357 28
7 Chicago, St. Paul Minn. & Omaha.....	6 & 7	Semi-annually..	1,448,151 00	1,442,821 25
8 Chicago, Burlington & Northern.....		Semi-annually..	6,743,437 29	6,885,214 98
9 Chicago, Lake Shore & Northern.....	5 & 6	Semi-annually..	168,700 00	168,700 00
10 Chicago & Lake Superior.....	6	Semi-annually..	2,180 00	.....
11 Chicago, Madison & Northern.....	5	Semi-annually..	343,500 00	343,500 00
12 Drummond & South Western.....	6	Semi-annually..	3,000 00	3,000 00
13 Duluth, South Shore & Atlantic.....	4, 5, 6	semi-annually..	859,700 00	859,700 00
14 Duluth, Superior & Western.....	4	Semi-annually..	20,000 00	20,000 00
15 Eastern R'y Co. of Minnesota.....	4 & 5	Semi-annually..	435,000 00	434,890 00
16 Green Bay & Western.....			15,000 00	15,000 00
17 Kewaunee, Green Bay & Western.....	5	Semi-annually..	20,400 00	20,400 00
18 Marshfield & South Eastern.....	5 & 6	Annually.....	27,000 00	.....
19 Minnesota & Wisconsin.....	4			
20 Minn., St. P. & Sault Ste. Marie.....	4 & 5	Semi-annually..	1,320,360 00	1,249,240 00
21 Northern Pacific.....		Semi-annually..	5,861,050 00	6,004,431 50
22 Northwestern Coal R'y Co.....	5	Semi-annually..	40,840 57	40,616 53
23 Wisconsin & Michigan.....	5	Semi-annually..	47,550 00	275 00
24 Wisconsin Central R'y Co.....		Semi-annually..	1,035,703 98	525,883 48
25 St. Paul & Duluth.....		Semi-annually..	241,734 17	240,650 00
Total.....			\$32,310,954 63	\$32,040,839 67

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*Statistical Tables.*


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**FUNDED DEBT - WISCONSIN.**

Equipment trust obligations June 30, 1900.

NAME OF COMPANY.	Series or other designation.	Cash paid on delivery of equipment.	DEFERRED PAYMENT PRINCIPAL.	
			Original amount.	Amount outstanding.
1 Chicago & Northwestern.....	.....	.....	\$3,661,052 50	\$9,124,167 77
2 Duluth, S. Shore & Atlan'c.	Car companies.	\$14,449 12	216,837 66	87,829 46
3 East'n Ry Co of Minnesota	Car trust notes.	.....	.....	15,050 10
4 Minn., St. P. & S. Ste. Marie	Car companies.	43,091 97	327,679 06	138,825 61
5 Northern Pacific.....	Car companies.	918 88	9,134 52	7,167 61
6 St. Paul & Duluth.....	Car companies.	2,461 53	24,505 08	21,078 27
<b>Total.....</b>	.....	<b>\$30,931 50</b>	<b>\$10,239,208 83</b>	<b>\$3,393,118 82</b>

*Statistical Tables.*

FUNDED DEBT—Continued—WISCONSIN.

Equipment trust obligations June 30, 1900.

NAME OF COMPANY.	DEFERRED PAYMENTS — INTEREST.				Rate.
	Original amount.	Amount outstanding.	Amount accrued during year.	Amount paid during year.	
1 Chicago & Northwestern.....			\$289,504 15	\$290,431 80	
2 Duluth, S. Shore & Atlantic.....					
3 Eastern R'y Co of Minnesota.....		None.....			
4 Minn., St. P. & S. Ste. Marie.....	\$6,701 99	\$2,938 19	1,976 78	1,976 78	5 per ct.
5 Northern Pacific.....	Interest	computed	with principal.....		
6 St. Paul & Duluth.....					
Total.....	\$6,701 99	\$2,938 19	\$291,480 93	\$292,408 5*	5 per ct.

*Statistical Tables.*

Current assets and liabilities. Cash and current assets available for payment.  
Liabilities June 30, 1900.

Name of Company.	Cash.	Bills receivable.	Due from agents, con- ductors and paymasters.	Net traffic balances due from other companies.
1 Abbotsford & Northeastern	\$949 57			\$7 92
2 Ahnapee & Western	629 18		\$20 00	
3 Big Falls R'y Co.	45 79		1,972 91	
4 Bayfield Harbor & Great Western, operated by Bayfield Transfer	261 17		3,300 46	
5 Chicago, Milw'kee & St. P.	1,307,210 17		140,348 42	
6 Chicago & Northwestern	1,152,529 83	22,183 97	664,386 93	
7 Chi., St. P., Minn. & O.*	522,743 88	513 83	155,950 12	
8 Chi., Burlington & Quincy*	110,593 25	17,704 92	178 04	
9 Chi., Lake Shore & East.*	4,582 05		9,429 47	
10 Chicago & Lake Superior			279 20	
11 Chi., Mad. & North'n, oper- ated by Illinois Central*		3,522 27		
12 Chip. Riv. & Menomonie				
13 Drummond & S. W.				
14 Duluth, S. Shore & Atl'ic*	3,454 64	31 05	13,006 78	8,460 10
15 Dul., Sup. & W. Term. Co.	173,672 80			
16 Eastern Ry. Co. of Minn.*	12,224 21	1,020 00	219 56	262,254 59
17 Green Bay & Western	37,848 80		11,228 22	6,761 19
18 Halthorne, Nebag. & Sup.	372 09			1,652 26
19 Hazelhurst & S. Eastern	1,822 76			2,074 04
20 Iola & Northern	1,931 92		169 74	
21 Kew'nec, Green Bay & W.	11,982 12		2,550 56	3,795 26
22 Marshfield & South Eastern	8,307 00			
23 Marinette, Tomah'k & W.	1,123 05		449 74	
24 Minnesota & Wisconsin	1,144 81		13,648 23	
25 M., St. P. & Sault Ste. M.	193,229 68	1,829 76	56,197 45	15,734 37
26 Northern Pacific*	192,544 42	978 72	15,915 22	6,974 61
27 Northwestern Coal Ry. Co.	754 97			
28 St. Paul & Duluth*	11,569 16	619 50	4,819 60	
29 Winona Bridge Ry. Co.*				
30 Wisconsin & Michigan	‡3,049 69		2,003 98	22,864 05
31 Whitcomb & Morris	424 10			
32 Wisconsin Central*	725,738 72	22 35	175,341 81	
33 Wis. Western (suc. to Kick- apoo V. & N.)	1,767 99		2,650 85	
	\$4,484,468 13	\$48,426 49	\$1,274,067 29	\$330,678 39

\*Proportionate.

‡Red figures.

*Statistical Tables.*

Current assets and liabilities. Cash and current assets available for payment.  
Liabilities June 30, 1900—continued.

Due from solvent companies and individuals.	Other cash assets (except material and supplies.)	Due from U. S. government.	Balance current liabilities.	Total.	Material and supplies on hand.	No.
\$439 66			\$7,061 69	\$8,458 84		1
1,525 30			108,503 37	110,677 85	\$400 00	2
				2,018 70		3
			361,499 71	365,061 34		4
57,766 77		\$90,236 31		1,595,561 67	897,489 80	5
30,009 49		122,137 38		1,991,247 60	867,448 25	6
36,112 81				715,320 77	280,837 00	7
85,657 97	\$809 07			214,943 25	118,194 78	8
17,353 92			81,876 28	113,241 72	8,357 96	9
736 13			15,614 39	16,629 72		10
945 32			1,500,871 44	1,505,339 03		11
23,254 97			30,722 58	53,977 55		12
			†111,205 31	†111,205 31	56 30	13
42,435 02			421,787 27	489,174 85	44,659 25	14
79,943 77	987 09			258,616 57		15
	158,570 34		41,118 91	276,815 45	10,849 16	16
1,840 09				257,367 55	10,376 90	17
				2,024 35		18
			591 16	4,487 96		19
57 33				2,158 99		20
	19,860 97			38,188 91		21
29,972 43				38,270 43		22
2,284 23			262,045 06	265,902 08		23
2,495 16				17,288 20	1,180 00	24
105,226 04				372,217 30	141,950 27	25
15,105 72				231,518 69	62,638 38	26
18,020 27	926 17			19,701 41	3,849 22	27
3,684 52			13,438 73	34,131 51	6,282 20	28
			5,021 06	5,021 06		29
16,516 91			136,334 98	†174,670 32		30
				424 10		31
55,270 94	1,397 40			957,771 22	†394,420 24	32
	744 55		†39,427 36	44,590 75	8,494 39	33
\$626,654 77	\$183,295 59	\$212,373 69	\$2,986,486 63	\$10,182,828 74	\$2,857,484 10	.....
†Red figures				111,205 31		
				\$10,294,034 05		

See †, \$3,049.60 deduct.



*Statistical Tables.*

Current assets and liabilities—Current liabilities accrued to and including  
June 30, 1900.

Name of Company.	Loans and bills payable	Audited vouchers and ac- counts.	Wages and salaries.	Net traffic balances due to other companies.
1 Abbotsford & Northeast'n		\$1,733 20		\$5 64
2 Ahnapee & Western	\$69,084 76		\$1,762 00	\$831.09
3 Bayfield Harbor & Great Western, operated by Bayfield Transfer	104,612 21	965 46	84 02	
4 Chicago, Mil. & St. Paul.		254,349 60	407,172 08	46,009 98
5 Chicago & Northwestern		871,685 92	506,894 86	47,447 12
6 C. S. P., Minn. & Omaha*		35,165 23	156,909 87	34,916 47
7 Chi., Burlington & Quincy*		59,990 82	22,953 75	9,053 39
8 Chi., Lake Shore & East.*		60,303 59	2,661 10	9,638 37
9 Chicago & Lake Superior.		476 80		
10 Chi., Mad. & North'n, oper- ated by Illinois Central*		1,505,329 03		
11 Chippewa R. & Menomonie				
12 Drummond & South West'n	169,459 98	1,745 33		
13 Dul., So. Shore & Atl'tic*		386,198 74	77,881 87	25,094 24
14 Dul., Sup. & W. Term. Co.		157,973 09	12,223 60	
15 Eastern Ry. Co. of Minn.*		29,147 98	13,129 96	
16 Green Bay & Western	143,550 15	15,920 03	14,859 41	
17 Hawthorne, Nebag. & Sup.				11 41
18 Hazelhurst & South East.		4,487 96		
19 Iola & Northern		60	243 33	685 44
20 Kew'nee, Green Bay & W.		1,187 66	3,284 38	983 97
21 Marshfield & South East'n		492 40		
22 Marinette, Tomah'k & W.		1,905 19	605 39	1,651 82
23 Minnesota & Wisconsin.				10,417 40
24 M., St. P. & S't Ste. Marie	1,272 00	124,208 35	45,914 12	
25 Northern Pacific*		51,394 43	29,836 45	
26 Northwestern Coal Ry. Co.		10,894 07	195 85	
27 St. Paul & Duluth*		6,624 85	3,693 19	1,431 05
28 Winona Bridge Ry. Co.				
29 Wisconsin & Michigan	60,932 03	10,391 86	2,119 12	
30 Wisconsin Central*		44,674 92	139,312 71	21,833 33
31 Wis. Western (successor to Kickapoo V. & N.)	30,000 00	6,698 48	5,056 22	2,836 05
	\$518,911 13	\$3,743,960 64	\$1,446,793 28	\$212,846 78

\*Proportionate.

†Red figures.



*Statistical Tables.*

Recapitulation — Wisconsin and whole line. A. For mileage owned by road making report, June 30, 1900.

NAME OF COMPANY.	WISCONSIN.		
	Total amount outstanding.	Apportionment.	
		To railroads.	To other properties.
1 Abbotsford & Northeastern .....	\$232,000 00	\$232,000 00	.....
2 Ahnapee & Western .....	890,177 85	890,177 85	.....
3 Bayfield Transfer R'y .....	4,500,000 00	4,500,000 00	.....
4 Chicago, Milwaukee & St. Paul .....	56,196,490 00	56,196,490 00	.....
5 Chicago & Northwestern .....	62,613,017 30	61,925,113 34	\$687,903 96
6 Chicago, St. Paul, Minn. & Om. ....	25,448,090 14	25,448,090 14	.....
7 Chicago, Burlington & Northern* ..	7,967,784 40	7,967,784 40	.....
8 Chicago, Lake Shore & Eastern .....	230,000 00	230,000 00	.....
9 Chicago & Lake Superior .....	69,614 39	69,614 39	.....
10 Chicago, Madison & Northern .....	2,731,798 88	2,731,798 88	.....
11 Chippewa River & Menomonie .....	53,977 55	53,977 55	.....
12 Duluth, South Shore & Atlantic* ..	8,953,203 44	8,953,203 44	.....
13 Duluth, Superior & Western .....	1,500,000 00	1,500,000 00	.....
14 Eastern Railway Co. of Minnesota* ..	2,199,480 60	1,792,925 60	406,555 00
15 Green Bay & Western .....	10,100,000 00	10,100,000 00	.....
16 Hazelhurst & South Eastern .....	100,000 00	100,000 00	.....
17 Iola & Northern .....	71,400 00	71,400 00	.....
18 Kewaunee, Green Bay & Western ..	1,072,950 00	1,072,950 00	.....
19 Lake Superior Ter. & Transfer Co. ....	.....	.....	.....
20 Marshfield & South Eastern .....	950,000 00	950,000 00	.....
21 Marinette, Tomahawk & Western ..	427,402 08	427,402 08	.....
22 Minnesota & Wisconsin .....	443,750 00	443,750 00	.....
23 Minn., St. Paul & Sault Ste. Marie ..	13,848,541 10	13,848,541 10	.....
24 Northern Pacific* .....	6,788,009 21	6,444,517 21	343,492 00
25 Northwestern Coal R'y Co. ....	1,805,108 41	1,231,108 41	574,000 00
26 Oshkosh Transportation Co. ....	70,000 00	70,000 00	.....
27 Winona Bridge R'y Co.* .....	407,690 00	407,680 00	.....
28 Wisconsin & Michigan .....	1,118,850 98	1,118,850 98	.....
29 Wisconsin Central R'y Co. ....	47,461,011 23	47,461,011 23	.....
30 St. Paul & Duluth .....	558,952 97	558,952 97	.....
31 Wisconsin Central .....	521,400 00	521,400 00	.....
	\$249,330,690 53	\$247,318,739 57	\$2,011,950 96

\*Proportionate.

Statistical Tables.

Recapitulation — Wisconsin and whole line. A. For mileage owned by road making report, June 30, 1900.

WISCONSIN.		WHOLE LINE.				
Amount per mile of road.		Total amount outstanding.	Apportionment.		Amount per mile of road.	
Miles.	Amount.		To railroads.	To other property.	Miles.	Amount.
15.16	\$15,303 00	\$232,000 00	\$232,000 00	.....	15.16	\$15,303 00
34.00	26,181 70	890,177 85	890,177 85	.....	34.00	26,181 70
3.86	1,165,803 11	4,500,000 00	4,500,000 00	.....	3.86	1,165,803 11
1,649.88	34,058 81	218,748,500 00	218,748,500 00	.....	6,422.67	34,058 81
1,580.63	39,177 00	217,968,073 11	215,573,345 84	\$2,394,727 27	5,502.48	39,177 00
617.52	41,208 00	61,305,926 62	61,305,926 62	.....	1,487.71	41,208 00
*211.54	*1,280 61	234,346,600 00	234,346,600 00	.....	6,221.87	37,665 00
17.33	13,272 00	3,880,000 00	3,880,000 00	.....	159.04	24,396 00
3.00	23,204 80	69,614 39	69,614 39	.....	3.00	23,204 80
91.31	29,917 85	10,740,657 44	10,740,657 44	.....	231.30	46,436 04
33.00	1,635 68	53,977 55	53,977 55	.....	3.00	1,635 68
110.38	15,903 76	47,626,950 76	47,626,950 76	.....	568.99	83,704 00
6.16	.....	1,500,000 00	1,500,000 00	.....	6.16	.....
38.15	.....	25,876,242 44	21,093,242 44	4,783,000 00	446.57	60,132 00
225.00	44,889 00	10,100,000 00	10,100,000 00	.....	225.00	44,889 00
17.00	5,882 00	100,000 00	100,000 00	.....	17.00	5,882 00
4.70	15,191 00	71,400 00	71,400 00	.....	4.70	15,191 00
36.70	29,235 00	1,072,950 00	1,072,950 00	.....	36.70	29,235 00
33.00	25,757 57	950,000 00	950,000 00	.....	33.00	25,757 57
33.30	12,834 90	427,402 68	427,402 68	.....	33.30	12,834 90
21.00	21,130 94	443,750 00	443,750 00	.....	21.00	21,130 94
271.42	51,022 55	56,442,439 39	56,442,439 39	.....	1,273.15	44,159 48
104.94	.....	326,346,596 76	321,440,096 76	4,906,500 00	5,036.99	.....
2.53	.....	1,805,108 41	1,231,108 41	574,000 00	2.53	.....
4.28	16,355 14	70,000 00	70,000 00	.....	4.28	16,355 14
.54	395,805 80	784,000 00	784,000 00	.....	1.03	761,165 00
32.82	29,936 51	2,166,510 42	2,166,510 42	.....	69.55	90,097 05
855.84	55,455 47	56,276,500 00	56,276,500 00	.....	961.14	58,518 82
12.36	2,259 40	10,162,781 40	10,162,781 40	.....	224.90	45,183 00
51.03	10,163 00	521,400 00	521,400 00	.....	51.03	10,163 00
6,118.38	\$2,122,864 60	1,295,479,558 62	1,282,821,331 35	\$12,658,227 27	29,130.11	2,719,345 04

\*Proportionate.

*Statistical Tables.*

Permanent improvements for the year ending June 30, 1900.—Wisconsin. Right of way, real estate, fences, bridges, rails, ties, buildings, shop machinery, purchase of constructed road, etc.

NAME OF COMPANY.	FOR CONSTRUCTION.		
	Total ex- penditures.	Credits, property sold.	Net additions.
1 Ahnapee & Western .....	\$2,663 66		\$1,763 66
2 Bayfield Transfer R'y .....	386 39	\$5 00	386 39
3 Chicago, Milwaukee & St. Paul*.....	52,395 86		
4 Chicago & Northwestern .....	2,189,106 51		
5 Chicago, Ct. Paul, Minn. & Omaha.....	489,983 04	†115 00	489,768 04
6 Chicago, Burlington & Northern*.....	210,498 53		
7 Chicago & Lake Superior .....	106 28		106 28
8 Chippewa River & Menomonie .....	1,257 36		
9 Duluth, South Shore & Atlantic*.....	9,376 37		9,376 37
10 Duluth, Superior & Western .....	696,578 26		696,578 26
11 Eastern Railway Co. of Minnesota*.....	109,442 06		109,442 06
12 Fairchild & North Eastern .....	28,930 56	153 52	28,777 04
13 Green Bay & Western .....	59,911 00		
14 Keweenaw, Green Bay & Western.....	16,600 00		
15 Lake Superior Ter. & Transfer R'y Co .....			
16 Mattoon R'y Co. ....	1,044 58		
17 Marshfield & South Eastern .....	2,656 64		
18 Marinette, Tomahawk & Western .....	22,016 44	75 00	
19 Minnesota & Wisconsin .....	4,779 26		
20 Minn., St. Paul & Sault Ste. Marie.....	97,223 51		97,223 51
21 Northern Pacific* .....	234,478 20	†562,441 66	
22 Northwestern Coal R'y Co. ....	9,562 32	†158,068 62	†148,506 30
23 Wisconsin & Michigan* .....	17,977 47		
24 Wisconsin Central R'y Co. ....	456,656 72	24,731 64	431,925 08
25 Hawthorn, Nebagamon & Superior .....	4,099 12		1,850 89
26 St. Paul & Duluth .....	2,413 84	112,256 38	210,084 25
27 Wisconsin Western .....	526,767 08		
	\$5,194,415 20	0295,405 16	\$3,065,176 58

\*Proportionate.

†Red figures.

*Statistical Tables.*

Permanent improvements for the year ending June 30, 1900,—Wisconsin. Locomotives, passenger cars, sleeping, dining, postal, baggage, express, combination and freight cars, other cars of all classes and floating equipment .

FOR EQUIPMENT.			Total constructi'n and equipment.	No.
Total expenditures.	Credits, property sold.	Net additions.		
\$2,625 00		\$2,625 00	\$5,288 66	1
1,642 50		1,642 50	2,028 89	2
			152,395 86	3
785,916 29			2,975,022 80	4
			489,768 04	5
22,404 77			232,903 30	6
80 00		80 00	186 23	7
†2,144 91			1887 55	8
5,108 75		5,108 75	14,485 12	9
20,355 58			716,933 84	10
16,397 86			98,844 30	11
939 58		938 58	98,844 30	12
			29,870 14	13
			59,911 00	14
			16,600 00	15
37 50			1,082 08	16
			2,656 64	17
4,127 10			26,143 54	18
29,159 62	14,571 40	43,731 00	4,779 26	19
		46,441 05	126,383 13	20
			280,919 26	21
			9,562 32	22
639,349 67		639,349 67	17,977 47	23
4,761 15		2,474 27	1,096,006 39	24
27,568 31		27,568 31	8,860 27	25
19,304 00			29,982 16	26
			546,071 08	27
\$1,563,339 82	\$14,571 40	\$769,960 13	\$6,845,439 40	

\*Proportionate.  
†Red figures.

*Statistical Tables.*

Permanent improvements for the year ending June 30, 1900.—Whole line. Right of way, real estate, fences, grading, bridges, rails, ties, buildings, shops, machinery, purchase of constructed road, etc.

NAME OF COMPANY.	FOR CONSTRUCTION.		
	Total ex- penditures.	Credits, property sold.	Net addi- tions during year.
1 Ahnapee & Western .....	\$2,663 66		\$1,763 66
2 Bayfield Terminal R'y .....	386 39	\$5 00	386 39
3 Chicago, Milwaukee & St. Paul .....	†203,954 32		
4 Chicago & Northwestern .....	7,620,704 92		
5 Chicago, St. Paul, Minn. & Omaha....	1,307,130 93	825 00	1,306,305 93
6 Chicago, Burlington & Northern .....	6,191,133 28		
7 Chicago & Lake Superior .....	106 28		106 28
8 Chippewa River & Menomonie .....	1,257 36		
9 Duluth, South Shore & Atlantic .....	48,331 81		48,331 81
10 Duluth, Superior & Western .....	696,578 26		696,578 26
11 Eastern Railway Co. of Minnesota*....	1,238,445 53		
12 Fairchild & North Eastern .....	28,930 56	153 52	28,770 04
13 Green Bay & Western .....	59,911 00		
14 Kewaunee, Green Bay Western &....	16,600 00		
15 Lake Superior Ter. & Transfer R'y Co. ....			
16 Mattoon R'y Co. ....	1,044 58		
17 Marshfield & South Eastern .....	2,656 64		
18 Marinette, Tomahawk & Western .....	22,016 44	75 00	
19 Minnesota & Wisconsin .....	4,779 26		
20 Minn., St. Paul & Sault Ste. Marie .....	495,260 99		495,260 99
21 Northern Pacific .....	11,272,990 76	†17,429,882 76	†6,156,892 00
22 Northwestern Coal R'y Co. ....	9,562 32	158,068 62	†148,506 30
23 Wisconsin & Michigan .....	32,333 58		
24 Wisconsin Central R'y Co. ....	573,149 55	24,731 64	548,417 91
25 Hawthorn, Nebagamon & Superior .....	4,099 12		1,850 89
26 St. Paul & Duluth .....	43,888 10	3,877,388 84	†3,833,500 74
27 Wisconsin Western .....	526,767 08		
	\$30,200,428 40	\$4,061,247 62	\$3,172,772 16

\*Proportionate.

†Red figures.

Statistical Tables.

Permanent improvements for the year ending June 30, 1900.—Whole line. Locomotives, passenger cars, sleeping, parlor and dining cars, baggage, express and postal cars, combination cars, freight cars, other cars of all classes and floating equipment.

FOR EQUIPMENT.			Total constructi'n and equipment.	No.
Total expenditures.	Credits, property sold.	Net additions during year.		
\$2,625 00		\$2,625 00	\$5,288 66	1
1,642 50		1,642 50	2,028 89	2
			†203,954 32	3
2,735,927 24			10,356,632 16	4
240,250 52		240,250 50	1,547,381 45	5
658,963 91			6,850,097 19	6
80 00		80 00	186 28	7
†2,144 91			†887 55	8
26,333 77		26,333 77	74,665 58	9
20,355 58			716,933 84	10
†75,269 05			1,162,876 48	11
939 58		939 58	29,870 14	12
			59,911 00	13
			16,600 00	14
				15
37 50			1,082 08	16
			2,656 64	17
4,127 10			26,143 54	18
			4,779 26	19
137,545 39	68,733 00	206,278 39	632,806 38	20
2,232,743 02		2,232,743 02	13,505,733 78	21
			†9,562 32	22
			32,333 58	23
750,970 99		750,970 99	1,324,120 54	24
4,761 15		2,474 27	†8,860 27	25
501,242 15		501,242 15	545,130 25	26
19,304 00			546,071 08	27
\$7,337,849 40	\$68,733 00	\$3,965,580 16	\$37,538,277 80	
			†76,526 41	
			\$37,451,751 39	

†Red figures.  
‡Less credits.



### Statistical Tables.

Cost of road and equipment June 30, 1900.—Wisconsin.

NAME OF COMPANY.	COST OF ROAD AND EQUIPMENT JUNE 30, 1899.	
	Wisconsin.	Whole line.
1 Abbotsford and Northeastern .....	\$232,000 00	\$232,000 00
2 Ahnapee & Western .....	479,212 74	479,212 74
3 Big Falls R'y Co. ....	7,857 64	7,857 64
4 Bayfield Transfer R'y .....	3,410,748 38	3,410,748 34
5 Chicago, Milwaukee & St. Paul .....	56,134,354 48	218,506,634 82
6 Chicago & Northwestern .....	51,178,478 13	178,162,221 61
7 Chicago, St. Paul, Minneapolis & Omaha*.....	22,452,196 24	56,554,650 09
8 Chicago, Burlington & Northern .....	10,663,699 83	226,752,657 62
9 Chicago, Lake Shore & Eastern .....	254,695 65	4,399,161 01
10 Chicago & Lake Superior .....	58,232 94	58,232 94
11 Chicago, Madison & Northern .....	3,207,793 35	10,592,931 87
12 Chippewa River & Menomonie .....	277,069 05	277,069 05
13 Drummond & Southwestern .....	171,331 65	171,331 65
14 Duluth, South Shore & Atlantic .....	8,749,986 52	45,103,023 32
15 Duluth, Superior & Western .....	768,913 03	768,913 03
16 Eastern Railway Co. of Minnesota .....	1,761,981 55	20,705,665 41
17 Fairchild & North Eastern .....	206,024 41	206,024 14
18 Green Bay & Western .....	10,076,000 00	10,076,000 00
19 Hazelhurst & South Eastern .....	102,170 89	102,170 89
20 Iola & Northern .....	37,855 71	37,855 71
21 Kewaunee, Green Bay & Western .....	1,068,350 00	1,068,350 00
22 Lake Superior Terminal & Transfer R'y Co. ....	.....	.....
23 Mattoon R'y Co. ....	37,000 00	37,000 00
24 Marinette, Tomahawk & Western .....	401,482 29	401,482 29
25 Minneapolis, St. Paul & Sault Ste. Marie.....	13,146,551 90	48,963,967 17
26 Northern Pacific .....	6,491,408 90	312,086,966 79
27 Northwestern Coal R'y Co. ....	942,085 82	942,085 82
28 Oshkosh Transportation Co. ....	70,000 00	70,000 00
29 Winona Bridge R'y Co. ....	241,500 00	784,000 00
30 Wisconsin & Michigan .....	1,102,429 39	2,136,483 97
31 Whitcomb & Morris .....	9,719 40	9,719 40
32 Wisconsin Central R'y Co. ....	43,308,495 59	50,869,540 62
33 Hawthorn, Nebagamon & Superior .....	50,000 00	50,000 00
34 St. Paul & Duluth .....	722,466 78	13,335,759 68
35 Wisconsin & Western .....	.....	.....
	<b>\$215,359,595 98</b>	<b>\$1,197,359,717 94</b>

\*Proportionate.

Statistical Tables.

Note.—Impossible to make cost of road and net additions balance with the total cost of road June 30, 1900.

Cost of road and equipment June 30, 1900.—Wisconsin.

NET ADDITIONS YEAR ENDING JUNE 30, 1900.		TOTAL COST OF ROAD AND EQUIPMENT JUNE 30, 1900.		COST PER MILE.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
		\$232,000 00	\$232,000 00	\$15,303 41	\$15,303 41	1
\$4,388 66	\$4,388 66	483,601 40	483,601 40	14,223 57	14,223 57	2
		7,857 64	7,857 64			3
2,023 89	2,023 89	3,412,772 23	3,412,772 23	844,137 88	844,137 88	4
†52,395 86	†203,954 32	56,081,958 62	218,302,680 50	33,989 40	33,989 40	5
2,975,022 80	10,356,632 16	52,541,660 59	182,907,724 52	33,240 96	33,240 96	6
489,768 04	1,546,556 45	23,286,537 17	56,101,206 54	37,709 77	37,709 77	7
22,551 42	6,850,097 19	10,686,251 25	233,602,754 81	48,012 99	37,545 43	8
	1,478,712 82	254,395 65	5,877,873 88	14,679 48	36,958 46	9
186 28	186 28	58,419 22	58,419 22	19,473 07	19,473 07	10
1,213 05	96,386 49	3,209,006 40	10,689,318 36	35,144 08	46,214 09	11
887 55	887 55	276,181 50	276,181 50	8,369 13	8,369 13	12
†354 84	†354 84	170,976 81	170,976 81	7,871 78	7,871 78	13
14,485 12	74,665 58	8,764,471 76	45,177,688 90	15,400 55	79,399 79	14
716,933 84	716,933 84	1,485,846 87	1,485,846 87			15
98,844 50	1,162,876 48	1,858,826 06	21,868,541 89	45,523 24	53,214 60	16
29,870 14	29,870 14	235,894 55	235,894 55	7,863 15	7,863 15	17
		10,075,000 00	10,075,000 00	44,777 77	44,777 77	18
6,464 02	6,464 02	108,634 91	108,634 91	6,390 29	6,390 29	19
		37,855 71	37,855 71	8,054 40	8,054 40	20
		1,068,350 00	1,068,350 00	29,110 35	29,110 35	21
		37,000 00	37,000 00			22
26,143 54	26,143 54	427,550 83	427,550 83	12,839 37	12,839 37	23
126,383 13	632,806 38	13,272,935 03	49,596,773 55	48,901 83	38,803 56	24
†81,622 29	†3,924,148 98	6,409,786 61	308,162,817 81			25
†148,506 30	†148,506 30	793,579 52	793,579 52	313,667 79	313,667 79	26
		70,000 00	70,000 00	16,355 14	16,355 14	27
		241,500 00	784,000 00	*233,592 23	761,165 04	28
		939,420 98	2,046,628 27	29,903 48	32,205 01	29
350 00	350 00	10,069 40	10,069 40	1,182 60	1,182 60	30
1,071,274 75	1,299,388 90	44,379,770 34	52,168,929 52	51,855 22	54,278 18	31
4,325 16	4,325 16	54,325 16	54,325 16	7,391 17	7,391 17	32
†183,274 22	†3,332,258 59	550,192 55	10,003,501 09	2,446 38	44,479 77	33
		546,071 08	546,071 08	10,644 66	10,644 66	34
\$5,600,527 34	\$19,288,807 98	\$242,069,719 84	\$1,216,885,426 47			35

*Statistical Tables.*

Income account June 30, 1900—Wisconsin—For roads making operating reports.

NAME OF COMPANY.	GROSS EARNINGS FROM OPERATION.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....	\$13,731 47	\$13,731 47
2 Ahnapee & Western .....	42,419 64	42,419 64
3 Big Falls Ry. Co. ....	10,390 91	10,390 91
4 Bayfield Transfer .....	7,956 27	7,956 27
5 Chicago, Milwaukee & St. Paul .....	13,180,423 51	41,884,692 00
6 Chicago & Northwestern .....	13,552,784 83	43,390,994 91
7 Chicago, St. Paul, Minneapolis & Omaha.....	3,939,823 90	10,409,863 89
8 Chicago, Burlington & Northern .....	1,397,012 41	37,962,068 42
9 Chicago, Lake Shore & Eastern .....	87,018 09	2,421,523 83
10 Chicago & Lake Superior .....	3,521 19	3,521 19
11 Chicago, Madison & Northern .....	106,050 22	1,457,182 24
12 Chippewa River & Menomonie .....	33,220 26	33,220 26
13 Drummond & South Western .....	14,978 78	14,978 78
14 Duluth, South Shore & Atlantic .....	303,046 24	2,613,942 56
15 Duluth, Superior & Western .....	332,151 17	332,151 17
16 Dunbar & Wausaukee .....	25,423 81	25,423 81
17 Eastern Railway Co. of Minnesota .....	591,241 05	3,729,437 41
18 Fairchild & North Eastern .....	34,612 66	34,612 66
19 Green Bay & Western .....	484,106 20	484,106 20
20 Hazelhurst & South Eastern .....	19,500 02	19,500 02
21 Iola & Northern .....	5,040 63	5,040 63
22 Glenwood & Northeastern .....	265 00	265 00
23 Kewaunee, Green Bay & Western .....	82,339 45	82,339 45
24 Lake Superior Terminal & Transfer Ry. Co.....		
25 Mattoon Ry. Co. ....	10,107 93	10,107 93
26 Marshfield & South Eastern .....	46,681 18	46,681 18
27 Marinette, Tomahawk & Western .....	35,323 41	35,323 41
28 Minnesota & Wisconsin .....	46,216 10	46,216 10
29 Minneapolis, St. Paul & Sault Ste. Marie.....	1,511,697 39	5,151,187 91
30 Northern Pacific .....	493,554 19	30,001,036 67
31 Northwestern Coal Ry. Co. ....	28,442 00	28,442 00
32 Winona Bridge Ry. Co. ....	11,474 46	21,887 42
33 Wisconsin & Michigan .....	60,491 64	108,680 65
34 Whitcomb & Morris .....	3,348 99	3,348 99
35 Wisconsin Central Ry. Co. ....	4,676,821 47	5,633,221 92
36 Holmes & Son .....	830 00	830 00
37 Hawthorne, Nebagamon & Superior .....	18,410 21	18,410 21
38 St. Paul & Duluth .....	21,588 36	1,904,048 85
39 Wisconsin Western .....	25,507 03	25,507 03
	<b>\$41,257,551 47</b>	<b>\$188,014,292 39</b>

Statistical Tables.

Income account June 30, 1900—Continued.

OPERATING EXPENSES.		INCOME FROM OPERATION.		DEFICIT FROM OPERATION.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$13,610 23	\$13,610 23	\$121 24	\$121 24			1
29,029 01	29,029 01	13,390 63	13,390 63			2
9,131 75	9,131 75	1,259 16	1,259 16			3
10,176 82	10,176 82			\$2,220 55	\$2,220 55	4
8,070,076 55	27,162,829 17	5,110,346 96	14,721,862 83			5
8,242,108 01	26,338,175 67	5,310,676 82	17,002,819 24			6
2,896,805 70	6,476,367 34	1,043,018 20	3,993,496 55			7
799,239 94	23,473,981 58	598,772 47	14,488,086 84			8
57,164 92	1,332,828 47	29,853 17	1,088,695 36			9
4,578 44	4,578 44			1,057 25	1,057 25	10
140,223 78	1,059,489 71		397,692 53	34,173 56		11
28,387 60	28,387 60	4,832 66	4,832 66			12
13,178 82	13,178 82	1,799 96	1,799 96			13
216,420 48	1,557,243 47	86,625 76	1,056,699 09			14
135,353 61	135,353 61	196,797 56	196,797 56			15
						16
363,163 81	1,633,048 64	228,077 24	2,096,388 77			17
14,600 09	14,600 09	20,012 57	20,012 57			18
384,927 44	384,927 44	99,178 76	99,178 76			19
12,912 53	12,912 53	6,587 49	6,587 49			20
5,047 50	5,047 50			6 87	6 87	21
15,952 99	15,952 99			15,687 99	15,687 99	22
64,098 17	64,098 17	18,241 28	18,241 28			23
						24
						25
21,308 87	21,308 87	25,372 31	24,372 31			26
37,895 64	37,895 64			2,572 23	2,572 23	27
26,354 87	26,354 87	19,861 23	19,861 23			28
656,080 85	2,683,741 93	855,616 44	2,467,445 98			29
248,986 68	14,374,347 26	244,567 51	15,626,689 41			30
20,379 86	20,379 86	8,062 14	8,062 14			31
2,483 46	4,737 72	8,991 00	17,149 70			32
58,827 53	100,848 09	1,644 11	7,832 61			33
3,908 28	3,908 28			559 29	559 29	34
3,081,174 33	3,919,119 89	1,595,647 14	1,714,102 03			35
						36
12,035 36	12,035 36	6,374 85	6,374 85			37
13,937 98	1,263,913 22	7,650 38	640,135 63			38
32,028 72	32,028 72			6,521 69	6,521 69	39
\$25,715,235 75	\$106,265,568 71	\$15,543,379 04	\$75,740,988 41	\$62,799 43	\$28,625 87	.....

*Statistical Tables.*

Income account June 30, 1900—Continued.

NAME OF COMPANY.	INCOME FROM OTHER SOURCES.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....		
2 Ahnapee & Western .....		
3 Big Falls Ry. Co. ....		
4 Bayfield Transfer Co. ....		
5 Chicago, Milwaukee & St. Paul .....	\$377,187 73	\$144,755 67
6 Chicago & Northwestern .....	466,001 95	1,491,965 58
7 Chicago, St. Paul, Minneapolis & Omaha .....	312,079 96	460,399 37
8 Chicago, Burlington & Northern .....	*85,399 80	2,461,089 46
9 Chicago, Lake Shore & Eastern .....		
10 Chicago & Lake Superior .....		
11 Chicago, Madison & Northern .....		
12 Chippewa River & Menomonie .....		
13 Drummond & South Western .....		
14 Duluth, South Shore & Atlantic .....	31 00	5,128 53
15 Duluth, Superior & Western .....		
16 Eastern Railway Co. of Minnesota .....	*55,109 35	361,780 30
17 Fairchild & North Eastern .....		
18 Green Bay & Western .....		
19 Hazelhurst & South Eastern .....	3,324 18	3,324 18
20 Iola & Northern .....		
21 Glenwood & Northeastern .....		
22 Kewaunee, Green Bay & Western .....	66 62	66 62
23 Marshfield & South Eastern .....		
24 Marinette, Tomahawk & Western .....		
25 Minnesota & Wisconsin .....		
26 Minneapolis, St. Paul & Sault Ste. Marie .....	*577 88	2,765 00
27 Northern Pacific .....	*14,258 84	685,521 30
28 Northwestern Coal Ry. Co. ....	47,084 55	47,084 55
29 Winona Bridge Ry. Co. ....		
30 Wisconsin & Michigan .....		
31 Whitcomb & Morris .....		
32 Wisconsin Central R'y Co. ....	9,230 78	12,472 19
33 Hawthorne, Nebagamom & Superior .....		
34 St. Paul & Duluth .....	*1,635 74	29,314 38
35 Wisconsin Western .....	260 00	260 00
	\$1,032,248 38	\$5,705,927 13

\*Proportionate.  
†Red figures.

Statistical Tables.

Income account June 30, 1900—Continued.

TOTAL INCOME.		DEFICIT.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$121 24	\$121 24			1
13,390 63	13,390 63			2
1,259 16	1,259 16			3
		\$2,220 55	\$2,220 55	4
5,147,534 69	14,866,618 50			5
5,776,678 77	18,494,784 82			6
1,355,098 16	4,453,895 92			7
*588,136 41	16,949,176 30			8
29,853 17	1,088,695 36			9
		1,057 25	1,057 25	10
†34,173 56	397,692 53	34,173 56	†397,692 53	11
4,832 66	4,832 66			12
1,799 96	1,799 96			13
86,656 76	1,061,827 62			14
196,797 56	196,797 56			15
*228,077 24	2,458,169 07			16
20,012 57	20,012 57			17
102,502 94	102,502 94			18
6,587 49	6,587 49			19
		6 87	6 87	20
18,307 90	18,307 90	15,687 99	15,687 99	21
25,372 31	25,372 31			22
		2,572 23	2,572 23	23
19,861 23	19,861 23			24
855,616 44	2,470,210 98			25
244,567 51	16,312,210 71			26
55,146 69	55,146 69			27
10,991 00	17,149 70			28
1,664 11	7,832 61			29
		559 29	559 29	30
1,604,877 92	1,726,574 22			31
6,374 85	6,374 85			32
*36,819 75	669,450 01			33
		6,261 69	6,261 69	34
\$16,439,939 12	\$81,446,656 54	\$62,539 43	\$28,365 87	35

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*Statistical Tables.*


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Income account June 30, 1900—Deductions from income and deficit.

NAME OF COMPANY.	TOTAL DIVIDENDS DECLARED.	
	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....	\$11,520 41	\$11,520 41
2 Ahnapee & Western .....		
3 Big Falls Ry. Co. ....		
4 Bayfield Transfer .....		
5 Chicago, Milwaukee & St. Paul .....	\$1,250,604 10	\$4,868,058 00
6 Chicago & Northwestern .....	1,222,625 56	3,914,394 00
7 Chicago, St. Paul, Minneapolis & Omaha .....	712,189 56	1,715,706 00
8 Chicago, Burlington & Quincy .....		
9 Chicago, Lake Shore & Eastern .....		
10 Chicago & Lake Superior .....		
11 Chippewa River & Menomonie .....		
12 Drummond & South Western .....		
13 Duluth, South Shore & Atlantic .....		
14 Duluth, Superior & Western Terminal Co. ....	150,000 00	150,000 00
15 Eastern Railway Co. of Minnesota.....	*136,000 00	1,600,000 00
16 Green Bay & Western .....	6,000 00	6,000 00
17 Hazelhurst & South Eastern .....		
18 Kewaunee, Green Bay & Western .....		
19 Marinette, Tomahawk & Western .....		
20 Minnesota & Wisconsin .....		
21 Minneapolis, St. Paul & Sault Ste. Marie.....	*112,320 00	5,400,000 00
22 Northern Pacific .....		
23 Northwestern Coal Ry. Co. ....		
24 St. Paul & Duluth .....	*94 57	38,083 19
25 Winona Bridge Ry. Co. ....		
26 Wisconsin & Michigan .....		
27 Whitcomb & Morris .....		
28 Wisconsin Central .....		
29 Wisconsin Western (successor to Kickapoo V. & N.)		
	\$3,601,354 20	\$17,703,761 60

\*Proportionate.

*Statistical Tables.*

Income account June 30, 1900—Continued.

SURPLUS FROM OPERATIONS.		DEFICIT FROM OPERATIONS.		SURPLUS JUNE 30, 1899, FROM GENERAL BALANCE SHEET.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
		\$18,198 68	\$18,198 68	\$11,136 99	\$11,136 99	1
		8,662 49	8,622 49	60,839 48	60,839 48	2
		240 84	240 84	1,401 69	1,401 69	3
		82,400 37	82,400 37			4
\$1,703,180 42	\$2,107,382 25			*3,258,867 20	12,779,871 41	5
481,838 38	1,542,667 95			1,678,030 81	5,372,432 83	6
	895,950 20	121,053 44			4,506,785 19	7
*73,913 39	2,173,952 79			*465,467 35	13,690,216 43	8
*21,923 74	405,995 36			*18,985 21	351,578 13	9
		8,086 25	8,086 25			10
4,667 66	4,667 66			263,310 81	263,310 81	11
		1,200 04	1,200 04	1,027 84	1,027 84	12
	128,490 83	71,923 36			1,972,291 33	13
7,499 69	7,499 69			35,511 26	35,511 26	14
*17,362 96	204,270 18			*143,343 88	1,686,399 83	15
14,195 28	14,195 28			85,672 71	85,672 71	16
487 49	487 49			7,556 26	7,556 26	17
				1,029 67	1,029 67	18
		5,211 29	5,211 29	21,360 42	21,360 42	19
		2,753 36	2,753 36	6,759 13	6,759 13	20
4,980 30	4,980 30					21
*187,790 29	898,518 17	45,978 26	219,991 70			22
*22,543 42	1,083,818 76			*29,556 51	1,420,986 99	23
11,514 46	11,514 46					24
		*7,117 26	13,582 56	*8,082 30	146,950 93	25
		41,653 05	113,552 48			26
				983 39	983 39	27
515,483 44	492,915 14					28
		6,261 69	6,261 69			29
\$3,067,380 87	\$9,977,307 51	\$420,740 38	\$4,801,141 75	\$6,098,922 91	\$42,424,102 72	.....



*Statistical Tables.*

Income account June 30, 1900—Continued.

NAME OF COMPANY.	DEDUCTION FROM INCOME.		INTEREST ON INTEREST BEARING CURRENT LIABILITIES ACCRUED NOT OTHERWISE PROVIDED FOR.	
	<i>Interest on funded debt.</i>		Wisconsin.	Whole line.
	Wisconsin.	Whole line.		
1 Abbotsford & Northeast'n	\$6,720 00	\$6,720 00		
2 Ahnapee & Western .....	20,400 00	20,400 00	\$1,483 12	\$1,483 12
3 Bayfield Transfer R'y .....	75,000 00	75,000 00	5,130 52	5,130 52
4 Chicago, Mil. & St. P. ....	1,704,061 46	6,633,170 41		
5 Chicago & Northwestern ..	2,167,169 67	6,938,474 21		
6 C., St. P., Minn. & Omaha	601,127 48	1,448,151 00		
7 Chi., Burlington & North'n	*29,276 87	6,743,437 29		
8 Chi., Lake Shore & East'n	7,800 00	168,700 00		
9 Chicago & Lake Superior..	6,480 00	6,480 00		
10 Chi., Madison & Northern	135,603 02	343,500 00		
11 Chippewa R. & Menomonie				
12 Drummond & South West'n	3,000 00	3,000 00		
13 Dul., So. Shore & Atlantic	153,244 09	359,700 00		
14 Duluth, Superior & West'n	20,000 00	20,000 00	2,245 00	2,245 00
15 Eastern Ry. Co. of Minn.	*36,975 00	435,000 00		
16 Fairchild & North Eastern				
17 Green Bay & Western ....	15,000 00	15,000 00		
18 Hazelhurst & South East'n				
19 Iola & Northern .....				
20 Kew'nee, Green Bay & W.	20,400 00	20,400 00		
21 Marshfield & South Eastern			27,000 00	27,000 00
22 Marinette, Tomah'k & W.				
23 Minnesota & Wisconsin....	9,750 00	9,750 00		
24 M., S. P. & S't Ste. Marie	*277,904 05	1,329,684 46	*41 60	199 09
25 Northern Pacific .....	*121,990 96	5,864,950 00		
26 Northwestern Coal Ry. Co.	40,616 53	40,616 53		
27 Winona Bridge Ry. Co. ....	9,985 60	19,200 00		
28 Wisconsin & Michigan .....	24,535 80	47,550 00		
29 Wis. Central Ry. Co. ....	908,359 06	1,026,953 98		
30 Hawthorne, Neb. & Sup. ....				
31 St. Paul & Duluth .....	*13,295 37	241,734 17		
	\$6,608,694 96	\$32,317,572 05	\$35,900 24	\$36,057 73

\*Proportionate.

†Actual.



## Statistical Tables.

Income account June 30, 1900—Continued.

NAME OF COMPANY.	TOTAL DEDUCTIONS FROM INCOME.		NET INCOME.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeast'n	\$6,799 51	\$6,799 51		
2 Ahnapee & Western	22,053 12	22,053 12		
3 Big Falls Ry. Co.			\$1,259 16	\$1,259 16
4 Bayfield Harbor & Great Western, operated by Bayfield Transfer	80,179 82	80,179 82		
5 Chi., Milwaukee & St. P.	2,193,750 17	7,891,178 25	2,853,784 52	6,975,440 25
6 Chicago & Northwestern	4,072,214 83	13,037,722 87	1,704,463 94	5,457,061 95
7 C. S. P., Minn. & Omaha	763,962 04	1,842,239 72	591,136 12	2,611,656 20
8 Chgo., Burlington & Quincy	*304,148 54	8,945,545 51	*272,123 34	8,003,630 79
9 Chi., Lake Shore & East'n	111,989 06	682,700 00		405,995 36
10 Chicago & Lake Superior	7,029 00	7,029 00		
11 Chi., Madison & Northern, operated by Illinois Cent.	136,988 68	382,782 88		14,909 65
12 Chippewa R. & Menomonee	165 00	165 00	4,667 66	4,667 66
13 Drummond & South West'n	3,000 00	3,000 00		
14 Dul., So. Shore & Atlantic	158,580 12	933,336 79		128,490 83
15 Dul., Sup. & W. Term. Co.	39,297 87	39,297 87	157,499 69	157,499 69
16 Eastern Ry. Co. of Minn.	*66,291 87	653,898 89	216,894 72	1,804,270 18
17 Fairchild & North Eastern	150 00		19,862 57	19,862 57
18 Green Bay & Western	25,807 66	25,807 66	76,695 28	76,695 28
19 Hawthorne, Neb. & Sup.	36 75	36 75	6,338 10	6,338 10
20 Hazelhurst & South East'n	100 00	100 00	6,487 49	6,487 49
21 Iola & Northern	23 50	23 50		
22 Kew'nee, Green Bay & W.	23,519 19	23,519 19		
23 Marshfield & South Eastern	29,656 64	29,656 64		
24 Marinette, Tomah'k & W.	181 13			
25 Minnesota & Wisconsin	14,880 93	14,880 93	4,980 00	4,980 00
26 M., St. P. & S't Ste. Marie	*328,483 79	1,571,692 81	*187,790 29	898,518 17
27 Northern Pacific	*204,430 55	9,828,391 95	*134,863 43	6,483,818 76
28 Northwestern Coal Ry. Co.	43,632 23	43,632 23	11,514 46	11,514 46
29 St. Paul & Duluth	*19,364 25	352,077 32	*17,455 49	317,372 69
30 Winona Bridge Ry. Co.	10,207 27	19,623 04	783 73	
31 Wisconsin & Michigan	32,747 26	48,142 50		
32 Wisconsin Central	1,089,394 48	1,233,659 08	515,483 44	492,915 14
33 Wisconsin Western (successor to Kick. V. & N.)				
	\$9,789,035 26	\$47,719,172 83	\$6,800,521 67	\$33,883,384 38

\*Proportionate.

†Net income whole line r(ed) figures).

*Statistical Tables.*

Income account — Continued.

DEFICIT.		DIVIDENDS COMMON STOCKS.		DIVIDENDS PREFERRED STOCK.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$6,678 27	\$6,678 27	\$11,520 41	\$11,520 41			1
8,662 49	8,662 49					2
						3
82,400 37	82,400 37					4
		604,108 06	2,351,530 00	646,496 04	2,516 528 00	5
		732,984 26	2,346,744 00	489,641 30	1,567,650 00	6
		385,100 72	927,730 00	327,088 84	787,976 00	7
		*198,209 05	5,829,678 00			8
82,135 89	†405,995 36					9
8,086 25	8,086 25					10
171,162 24	†14,909 65					11
						12
1,200 04	1,200 04					13
71,923 36	†128,490 83					14
		150,000 00	150,000 00			15
		†136,000 00	1,600,000 00			16
						17
		62,500 00	62,500 00			18
						19
		6,000 00	6,000 00			20
						21
30 37	30 37					22
5,211 29	5,211 29					23
4,284 33	4,284 33					24
2,753 36	2,753 36					25
						26
		*49,920 00	2,400,000 00	*62,400 00	3,000 000 00	27
				*15,360 92	279,289 50	28
						29
	2,473 34					30
31,053 15	40,309 92					31
						32
6,261 69	6,261 69					33
\$481,843 10	\$168,351 62	\$2,336,343 50	\$15,695,702 41	\$1,540,987 10	\$8,151,453 50	

\*Proportionate.  
†Red figures.

*Statistical Tables.*

## Income account — Continued.

NAME OF COMPANY.	DEFICIT ON JUNE 30, 1899, FROM GENERAL BALANCE SHEET.		ADDITIONS FOR YEAR.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....				
3 Big Falls R'y Co. ....			240 84	240 84
4 Bayfield Har. & Gt. West., operated by Bayfield Tr. ....	\$41,727 11	\$41,727 11		
5 Chicago, Milw. & St. P. ....				
6 Chicago & Northwestern....				
7 C., St. P., M. & O. ....				
8 Chicago, Burlington & Q'cy .....				
9 Chicago, Lake Shore & E. ....				
10 Chicago & Lake Superior..	3,108 92	3,108 92		
11 Chippewa Riv. & Menom. ....				
12 Drummond & Southwestern....				
13 Duluth, So. Shore & At... ..	804,111 50			
14 Duluth, Sup. & W. T. Co. ....				
15 East. R'y Co. of Minnesota .....				
16 Green Bay & Western.....				
17 Hawthorn, Nebag. & Sup. ....				
18 Hazelhurst & South East. ....				
19 Iola & Northern .....				
20 Kewaunee, Gr. Bay & W. ....				
21 Marinette, Tom. & West. ....				
22 M., St. P. & Sault St. M. ....				
23 Northern Pacific .....				
24 Northwestern C. R'y Co. ....	5,658 69	5,658 69		
25 St. Paul & Duluth .....				
26 Winona Bridge R'y Co. ....				
27 Wisconsin & Michigan ....	10,599 90	73,242 56		
28 Whitcomb & Morris .....	559 29	559 29	424 10	424 10
29 Wisconsin Central .....				
30 Wisconsin Western (suc- cessor to Kick. V. & N. ....				
	\$865,766 16	\$124,296 57	\$664 94	\$664 94

*Statistical Tables.*

Income account — Continued.

DEDUCTIONS FOR YEAR.		SURPLUS JUNE 30, 1900.		DEFICIT ON JUNE 30, 1900.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$1,680 00	\$1,680 00			\$8,741 69	\$8,741 69	1
				69,501 97	69,501 97	2
		\$1,160 85	\$1,160 85			3
				124,127 48	124,137 28	4
		*3,796,249 68	14,887,253 66			5
		2,159,869 19	6,915,100 78			6
207,550 00	2,500,000 00		2,902,735 39	328,603 44		7
		*539,381 75	15,864,169 22			8
		*30,908 96	757,573 49			9
				11,195 17	11,195 71	10
22,519 55	22,519 55	245,458 92	245,458 92			11
				172 20	172 20	12
			1,843,800 50	876,034 86		13
35,070 00	35,070 00	7,940 95	7,940 95			14
*31,450 08	370,001 00	129,253 86	1,520,669 01			15
1,000 00	1,000 00	98,867 99	98,867 99			16
		6,338 10	6,338 10			17
		8,043 75	8,043 75			18
		999 30	999 30			19
		16,149 13	16,149 13			20
		4,005 77	4,005 77			21
*3,688 08	17,646 36	*138,123 94	660,880 11			2
		*52,099 94	2,504,804 85			23
		5,855 77	5,855 77			24
		*10,176 87	185,034 12			25
				*8,349 06	16,055 90	26
31,053 15	40,309 92			41,653 05	113,552 48	27
						28
		515,483 44	492,915 14			29
				6,261 69	6,261 69	30
\$334,010 86	\$2,998,226 83	\$7,766,368 12	\$48,929,756 80	\$1,475,188 61	\$349,608 58	

\*Proportionate.

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*Statistical Tables.*


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Freight earnings and total passenger and freight earnings, whole line, year ending June 30, 1900.

Name of Company.		Freight earnings.	Stock yards.
1	Abbotsford & Northeastern .....	\$11,408 44	.....
2	Ahnapee & Western .....	20,842 21	.....
3	Big Falls R'y Co. ....	9,677 27	.....
	Bayfield Harbor & Grea Western .....		
4	Bayfield Transfer R'y .....	4,732 89	.....
5	Chicago, Milwaukee & St. Paul .....	31,220,217 27	38,609 55
6	Chicago & Northwestern .....	32,252,031 75	.....
7	Chicago, St. Paul, Minneapolis & Omaha .....	7,421,469 59	.....
8	Chicago, Burlington & Quincy .....	26,427,566 42	34,605 75
9	Chicago, Lake Shore & Eastern .....	1,967,964 27	.....
10	Chicago & Lake Superior .....	2,096 21	.....
11	Chicago, Madison & Northern .....	986,370 07	.....
12	Chippewa River & Menomonie .....	32,713 67	.....
13	Drummond & South Western .....	14,978 78	.....
14	Duluth, South Shore & Atlantic .....	1,653,879 81	.....
15	Duluth, Superior & Western .....	308,954 20	.....
16	Dunbar & Wausaukee .....	24,378 11	.....
17	Eastern Railway Co. of Minnesota .....	3,195,316 45	.....
18	Fairchild & North Eastern .....	32,160 49	.....
19	Green Bay & Western .....	362,351 23	.....
20	Hazelhurst & South Eastern .....	18,694 48	.....
21	Iola & Northern .....	3,665 05	.....
22	Glenwood & Northeastern .....	265 00	.....
23	Kewaunee, Green Bay & Western .....	59,828 13	.....
24	Mattoon R'y Co. ....	7,713 90	.....
25	Marshfield & South Eastern .....	39,451 72	.....
26	Marquette, Tomahawk & Western .....	29,532 79	.....
27	Minnesota & Wisconsin .....	41,821 92	.....
28	Minneapolis, St. Paul & Sault Ste. Marie .....	3,974,398 70	.....
29	Northern Pacific .....	21,783,904 19	.....
30	Northwestern Coal R'y Co. ....	28,442 00	.....
31	Winona Bridge R'y Co. ....	16,448 99	.....
32	Wisconsin & Michigan .....	80,961 38	.....
33	Whitcomb & Morris .....	3,348 99	.....
34	Wisconsin Central R'y Co. ....	4,174,776 14	.....
35	Wisconsin Western .....	19,397 05	.....
36	Hawthorn, Nebagamon & Superior .....	17,822 96	.....
37	St. Paul & Duluth .....	1,370,982 16	.....
		\$137,620,614 68	\$73,215 30

*Statistical Tables.*

Freight earnings and total passenger and freight earnings, whole line, year ending June 30, 1900.

Elevators.	Other items.	Freight earnings.	Total passenger and freight earnings.	No.
		\$11,408 44	\$13,587 02	1
		20,842 21	42,419 64	2
		9,677 27	10,390 91	3
	\$47 68	4,830 57	7,956 27	4
\$28,733 34		31,287,560 16	41,739,579 91	5
	35,108 99	32,287,140 74	43,283,815 31	6
	8,150 02	7,429,619 61	10,280,241 74	7
		26,462,172 17	37,098,758 87	8
		1,967,964 27	1,967,964 27	9
		2,096 21	3,521 19	10
		986,370 07	1,431,137 41	11
		32,713 67	33,220 26	12
		14,978 78	14,978 78	13
	11,289 30	1,665,169 11	2,557,200 51	14
		308,954 20	308,954 20	15
		24,378 11	25,423 31	16
	1,392 24	3,196,708 69	3,685,691 36	17
		32,160 49	34,612 66	18
	485 12	362,836 35	484,106 20	19
		18,694 48	19,500 02	20
		3,665 05	5,036 81	21
		265 00	265 00	22
		59,828 13	82,339 45	23
		7,713 90	9,897 38	24
207 51		39,659 23	46,681 18	25
		29,532 79	34,806 58	26
		41,821 92	46,216 00	27
	5,189 41	3,979,588 11	5,122,564 75	28
	33,884 12	21,817,788 31	29,181,733 76	29
		28,442 00	28,442 00	30
		16,448 99	21,887 42	31
	9,204 69	90,166 07	108,680 65	32
		3,348 99	3,348 99	33
	7,359 76	4,182,135 90	5,603,785 38	34
		19,397 05	25,494 53	35
		17,822 96	17,903 21	36
		1,370,982 16	1,898,624 63	37
\$28,940 85	\$113,111 34	\$137,819,903 38	\$185,280,767 56	



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*Statistical Tables.*


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Passenger earnings in Wisconsin, year ending June 30, 1900.

Name of Company.	For sale of tickets.	Mail.
1 Abbotsford & Northeastern .....	\$1,365 04	\$656 64
2 Ahnapee & Western .....	16,816 38	2,843 18
3 Big Falls R'y Co. ....	472 70	240 94
4 Bayfield Transfer R'y .....	2,965 82	159 88
5 Chicago, Milwaukee & St. Paul .....	2,510,654 25	520,120 45
6 Chicago & Northwestern .....	2,871,763 28	319,984 20
7 Chicago, St. Paul, Minneapolis & Omaha .....	986,783 91	86,824 78
8 Chicago, Burlington & Northern .....	279,976 83	32,292 46
9 Chicago & Lake Superior .....	1,216 20	143 92
10 Chicago, Madison & Northern .....	35,865 26	7,070 00
11 Chippewa River & Menomonie .....	506 59	.....
12 Duluth, South Shore & Atlantic .....	96,329 83	8,109 87
13 Dunbar & Wausaukee .....	1,045 20	.....
14 Eastern Railway Co. of Minnesota .....	45,268 14	2,953 35
15 Fairchild & North Eastern .....	1,973 58	375 60
16 Green Bay & Western .....	96,397 80	19,994 60
17 Hazelhurst & South Eastern .....	695 55	.....
18 Iola & Northern .....	1,132 06	222 72
19 Kewaunee, Green Bay & Western .....	18,494 76	3,019 18
20 Matton R'y Co. ....	2,183 48	.....
21 Marshfield & South Eastern .....	6,539 23	.....
22 Marinette, Tomahawk & Western .....	4,759 65	210 63
23 Minnesota & Wisconsin .....	3,233 70	570 65
24 Minneapolis, St. Paul & Sault Ste. Marie .....	189,286 19	38,747 81
25 Northern Pacific .....	106,377 59	5,965 40
26 Winona Bridge R'y Co. ....	2,851 20	.....
27 Wisconsin & Michigan .....	8,916 88	1,222 73
28 Wisconsin Central R'y Co. ....	929,078 53	99,940 41
29 Hawthorne, Nebagamon & Superior .....	80 25	.....
30 St. Paul & Duluth .....	3,938 22	742 69
31 Wisconsin Western .....	4,997 23	744 55
	\$8,231,965 33	\$1,153,156 64

*Statistical Tables.*

Passenger earnings in Wisconsin, year ending June 30, 1900.

Express.	News.	Extra baggage and storage.	Sleeping and parlor cars.	Miscellaneous.	Total passenger earnings.	No.
\$156 90					\$2,178 58	1
1,450 79		\$467 08			21,577 43	2
					713 64	3
					3,125 70	4
238,042 68	\$4,422 01	55,048 74	\$101,654 26	\$33,377 58	3,463,319 97	5
180,657 73		56,146 75		6,159 88	3,434,711 84	6
69,880 80		25,706 65			1,169,196 14	7
14,086 80	4,175 44				330,531 53	8
64 86					1,424 98	9
4,620 00		541 10		299 47	48,395 83	10
					506 59	11
7,270 53		780 43			112,490 66	12
					1,045 20	13
1,211 18		377 34		2,096.06	51,906 07	14
40 34		62 65			2,452 17	15
3,483 03		1,394 42			121,269 85	16
107 39		2 60			805 54	17
16 98					1,371 76	18
600 00		397 38			22,511 32	19
					2,183 48	20
482 72					7,021 95	21
303 51					5,273 79	22
589 73					4,394 08	23
14,877 48		3,500 96	8,329 61		254,742 05	24
6,497 77		1,727 57		717 29	121,285 62	25
					2,851 20	26
144 53		21 06			10,30 520	27
85,003 37		11,477 91		15,570 93	1,141,071 15	28
					80 25	29
151 20		118 88	7 72		4,958 71	30
355 59		11			6,097 48	31
\$630,095 91	\$8,597 45	\$157,771 63	\$109,991 59	\$58,221 21	\$10,349,799 76	

*Statistical Tables.*

Freight earnings and total passenger and freight earnings, Wisconsin, year ending June 30, 1900.

Name of Company.	Freight earnings.	Stock yards.
1 Abbotsford & Northeastern .....	\$11,408 44	.....
2 Ahnapee & Western .....	20,842 21	.....
3 Big Falls R'y Co. ....	9,677 27	.....
4 Bayfield Harbor & Great Western .....	.....	.....
5 Bayfield Transfer R'y .....	4,782 89	.....
6 Chicago, Milwaukee & St. Paul .....	9,606,872 37	\$38,609 55
7 Chicago & Northwestern .....	10,073,630 43	.....
8 Chicago, St. Paul, Minneapolis & Omaha .....	2,699,358 70	.....
9 Chicago, Burlington & Northern .....	1,062,110 21	.....
10 Chicago, Lake Shore & Eastern .....	39,234 09	.....
11 Chicago & Lake Superior .....	2,096 21	.....
12 Chicago, Madison & Northern .....	57,579 39	.....
13 Chippewa River & Menomonie .....	32,713 67	.....
14 Drummond & South Western .....	14,978 78	.....
15 Duluth, South Shore & Atlantic .....	189,306 58	.....
16 Duluth, Superior & Western .....	308,954 20	.....
17 Dunbar & Wausaukee .....	24,378 11	.....
18 Eastern Railway Co. of Minnesota .....	512,283 38	.....
19 Fairchild & North Eastern .....	32,160 49	.....
20 Green Bay & Western .....	362,351 23	.....
21 Hazelhurst & South Eastern .....	18,694 48	.....
22 Iola & Northern .....	3,665 05	.....
23 Glenwood & Northeastern .....	265 00	.....
24 Kewaunee, Green Bay & Western .....	59,828 13	.....
25 Mattoon R'y Co. ....	7,713 90	.....
26 Marshfield & South Eastern .....	39,451 72	.....
27 Marinette, Tomahawk & Western .....	29,532 79	.....
28 Minnesota & Wisconsin .....	41,821 92	.....
29 Minneapolis, St. Paul & Sault Ste. Marie .....	1,250,128 22	.....
30 Northern Pacific .....	327,905 16	.....
31 Northwestern Coal R'y Co. ....	28,442 00	.....
32 Winona Bridge R'y Co. ....	8,623 26	.....
33 Wisconsin & Michigan .....	45,063 10	.....
34 Whitcomb & Morris .....	3,348 79	.....
35 Wisconsin Central R'y Co. ....	3,511,973 30	.....
36 Wisconsin Western .....	19,397 05	.....
37 Hawthorne, Nebagamon & Superior .....	17,822 96	.....
38 St. Paul & Duluth .....	16,629 65	.....
	\$30,495,025 14	\$38,609 55

*Statistical Tables.*

Freight earnings and total passenger and freight earnings, Wisconsin, year ending June 30, 1900.

Elevators.	Other items.	Total freight earnings.	Total passenger and freight earnings.	No.
		\$11,408 44	\$13,587 02	1
		20,842 21	42,419 64	2
		9,677 27	10,390 91	3
	\$47 68	4,830 57	7,956 27	4
\$7,861 25		9,653,343 17	13,116,663 14	5
	10,965 98	10,084,596 41	13,519,308 25	6
	2,574 04	2,701,932 74	3,871,128 88	7
		1,062,110 21	1,392,641 74	8
		39,234 09	39,234 09	9
		2,096 21	3,521 19	10
		57,579 39	105,975 22	11
		32,713 67	33,220 26	12
		14,978 78	14,978 78	13
	841 43	190,148 01	302,638 67	14
		308,954 20	308,954 20	15
		24,378 11	25,423 31	16
	875 49	513,158 87	565,064 94	17
		32,160 49	34,612 66	18
	485 12	362,836 35	484,106 20	19
		18,694 48	19,500 02	20
		3,665 05	5,036 81	21
		265 00	265 00	22
		59,828 13	82,339 45	23
		7,713 90	9,897 38	24
207 51		39,659 23	46,681 18	25
		29,532 79	34,806 58	26
		41,821 92	46,216 00	27
	2,380 79	1,252,509 01	1,507,251 06	28
	459 87	328,365 03	449,650 65	29
		28,442 00	28,442 00	30
		8,623 26	11,474 46	31
	5,123 33	50,186 44	60,491 64	32
		3,348 79	3,348 79	33
	3,543 96	3,515,517 26	4,656,588 41	34
		19,397 05	25,494 53	35
		17,822 96	17,903 21	36
		16,629 65	21,588 36	37
				38
\$8,068 76	\$27,297 69	\$30,569,001 14	\$40,918,800 90	

*Statistical Tables.*

Earnings from operations other than passenger and freight in Wisconsin, year ending June 30, 1900.

Name of Company.	Car mileage balance.	Switching charges balance.	Telegraph companies.
1 Abbotsford & Northeastern .....			\$68 85
2 Ahnapee & Western .....			
3 Big Falls R'y Co. ....			
4 Bayfield Harbor & Great Western ] .....			
5 Bayfield Transfer R'y .....			
6 Chicago, Milwaukee & St. Paul .....			9,386 33
7 Chicago & Northwestern .....			
8 Chicago, St. Paul, Minneapolis & Omaha .....	\$31,158 67	\$25,035 63	
9 Chicago, Burlington & Northern .....	1,167 00		1,851 12
10 Chicago, Lake Shore & Eastern .....		30,429 00	
11 Chicago & Lake Superior .....			
12 Chicago, Madison & Northern .....			
13 Chippewa River & Menomonie .....			
14 Drummond & South Western .....			
15 Duluth, South Shore & Atlantic .....			192 10
16 Duluth, Superior & Western .....		22,994 50	
17 Dunbar & Wausaukee .....			
18 Eastern Railway Co. of Minnesota .....		15,503 44	24 92
19 Fairchild & North Eastern .....			
20 Green Bay & Western .....			
21 Hazelhurst & South Eastern .....			
22 Iola & Northern .....	3 82		
23 Glenwood & Northeastern .....			
24 Kewaunee, Green Bay & Western .....			
25 Mattoon Ry. Co. ....	210 55		
26 Marshfield & South Eastern .....			
27 Marinette, Tomahawk & Western .....	7 19		48 14
28 Minnesota & Wisconsin .....			
29 Minn., St. Paul & Sault Ste. Marie .....			4,871 35
30 Northern Pacific .....		29,187 34	3,452 31
31 Northwestern Coal Ry. Co. ....			
32 Winona Bridge Ry. Co. ....			
33 Wisconsin & Michigan .....			
34 Whitcomb & Morris .....			
35 Wisconsin Central Ry. Co. ....			
36 Wisconsin Western .....			
37 Holmes & Son .....		830 00	
38 Hawthorne, Nebagamon & Superior .....		507 00	
39 St. Paul & Duluth .....			
	\$32,547 23	\$124,486 91	\$19,895 12

*Statistical Tables.*

Earnings from operations other than passenger and freight in Wisconsin, year ending June 30, 1900—Wisconsin.

Rent from tracks, yards and terminals.	Other rentals.	Other sources.	Total other earnings from operations.	Total gross earnings from operations.	No.
\$75 60			\$144 45	\$13,731 47	1
				42,419 64	2
				10,390 91	3
				7,956 27	4
				63,760 37	5
	\$54,374 04		63,760 37	13,180,423 51	6
10,038 07	19,412 25	\$4,026 26	33,476 58	13,552,784 83	7
	12,500 72		68,695 02	3,939,823 90	8
981 42	†371 13	†4,370 67	†1,697,012 41		9
		17,355 00	47,784 00	87,018 09	10
				3,521 19	11
75 00			75 00	106,050 22	12
				33,220 26	13
				14,978 78	14
107 75	107 72		407 57	303,046 24	15
200 00	2 47		23,196 97	332,151 17	16
				25,423 31	17
10,452 25	195 50		26,176 11	591,241 05	18
				34,612 66	19
				484,106 20	20
				19,500 02	21
				3 82	22
				5,040 63	23
				265 00	24
				82,339 45	25
				210 55	26
				10,107 93	27
				46,681 18	28
	461 50		516 83	35,323 41	29
				46,216 00	30
		†425 02	4,446 33	1,511,697 39	31
4,791 99	6,471 90		43,903 54	493,554 19	32
				28,442 00	33
				11,474 46	34
				60,491 64	35
				3,348 99	36
889 45	4,930 44	14,413 17	20,233 06	4,676,821 47	37
		12 50	12 50	25,507 03	38
			830 00	830 00	39
			507 00	18,410 21	40
				21,588 36	41
\$26,630 11	\$99,437 96	\$36,178 06	\$38,750 37	\$41,257,551 47	.....

†Red figures.

## Statistical Tables.

## Recapitulation of earnings, year ending June 30, 1900.

NAME OF COMPANY.	WISCONSIN.			
	Passenger earnings.	Freight earnings.	Other earnings.	Total gross.
1 Abbotsford & Northeast'n	\$2,178 58	\$11,408 44	\$144 45	\$13,731 47
2 Ahnapee & Western .....	21,577 43	20,842 21	.....	42,419 64
3 Big Falls Ry. Co. ....	713 64	9,677 27	.....	10,390 91
4 Bayfield Har. & G't W.]	.....	.....	.....	.....
5 Bayfield Transfer Ry....	3,125 70	4,830 57	.....	7,956 27
6 Chicago, Mil. & St. Paul..	3,463,319 97	9,653,343 17	63,760 37	13,180,423 51
7 Chicago & Northwestern..	3,434,711 84	10,084,596 41	33,476 58	13,552,784 83
8 C., St. P., Minn. & Omaha	1,169,196 14	2,701,932 74	68,695 02	3,939,823 90
9 Chi., Burlington & North'n	330,531 53	1,062,110 21	4,370 67	1,397,012 41
10 Chi., Lake Shore & Eastern	.....	39,234 09	47,784 00	87,018 09
11 Chicago & Lake Superior..	1,424 98	2,096 21	.....	3,521 19
12 Chi., Madison & Northern	48,395 83	57,579 39	75 00	106,050 22
13 Chippewa R. & Menomonie	506 59	32,713 67	.....	33,220 26
14 Drummond & South West'n	.....	14,978 78	.....	14,978 78
15 Dul., So. Shore & Atlantic	112,490 66	190,148 01	407 57	303,046 24
16 Dul., Superior & Western	.....	308,954 20	23,196 97	332,151 17
17 Dunbar & Wausaukee ....	1,045 20	24,378 11	.....	25,423 31
18 Eastern Ry. Co. of Minn...	51,906 07	513,158 87	26,176 11	591,241 05
19 Fairchild & North Eastern	2,452 17	32,160 49	.....	34,612 66
20 Green Bay & Western....	121,269 85	362,836 35	.....	484,106 20
21 Hazelhurst & South East'n	805 54	18,694 48	.....	19,500 02
22 Iola & Northern .....	1,371 76	3,665 05	3 82	5,040 63
23 Glenwood & Northeastern.	.....	265 00	.....	265 00
24 Kew'nee, Green Bay & W.	22,511 32	59,828 13	.....	82,339 45
25 Mattoon Ry. Co. ....	2,183 48	7,713 90	210 55	10,107 93
26 Marshfield & South East'n	7,021 95	39,659 23	.....	46,681 18
27 Marinette, Tomah'k & W.	5,273 79	29,532 79	516 83	35,323 41
28 Minnesota & Wisconsin ..	4,394 08	41,821 92	.....	46,216 10
29 M., St. P. & S't Ste. Marie	254,742 05	1,252,509 01	4,446 33	1,511,697 39
30 Northern Pacific .....	121,285 62	328,365 03	43,903 54	493,554 19
31 Northwestern Coal Ry. Co.	.....	28,442 00	.....	28,442 00
32 Winona Bridge Ry. Co.....	2,851 20	8,623 26	.....	11,474 46
33 Wisconsin & Michigan ....	10,305 20	50,186 44	.....	60,491 64
34 Whitcomb & Morris .....	.....	3,348 99	.....	3,348 99
35 Wis. Central Ry. Co.....	1,141,071 15	3,515,517 26	20,233 06	4,676,821 47
36 Wisconsin Western .....	6,097 48	19,397 05	12 50	25,507 03
37 Holmes & Son .....	.....	.....	830 00	830 00
38 Hawthorne, Neb. & Sup...	80 25	17,822 96	507 00	18,410 21
39 St. Paul & Duluth .....	4,958 71	16,629 65	.....	21,588 36
	\$10,349,799 76	\$30,569,001 14	\$338,750 37	\$41,257,551 27

Statistical Tables.

Recapitulation of earnings, year ending June 30, 1900—Continued.

WHOLE LINE.				No.
Passenger earnings.	Freight earnings.	Other earnings.	Total gross earnings.	
\$2,178 58	\$11,408 44	\$144 45	\$13,731 47	1
21,577 43	20,842 21	.....	42,419 64	2
713 64	9,677 27	.....	10,390 91	3
.....	.....	.....	.....	4
3,125 70	4,830 57	.....	7,956 27	5
10,452,019 75	31,287,560 16	145,112 09	41,884,692 00	6
10,996,674 57	32,287,140 74	107,179 60	43,390,994 91	7
2,850,622 13	7,429,619 61	129,622 15	10,409,863 89	8
10,636,586 70	26,462,172 17	863,309 55	37,962,068 42	9
.....	1,967,964 27	453,559 56	2,421,523 83	10
1,424 98	2,096 21	.....	3,521 19	11
444,767 34	986,370 07	26,044 83	1,457,182 24	12
506 59	32,713 67	.....	33,220 26	13
.....	14,978 78	.....	14,978 78	14
892,031 40	1,665,169 11	56,742 05	2,613,942 56	15
.....	308,954 20	23,196 97	332,151 17	16
1,045 20	24,378 11	.....	25,423 31	17
488,982 67	3,196,708 69	43,746 05	3,729,437 41	18
2,452 17	32,160 49	.....	34,612 66	19
121,269 85	362,836 35	.....	484,106 20	20
806 54	18,694 48	.....	19,500 02	21
1,371 76	3,665 05	3 82	5,040 63	22
.....	265 00	.....	265 00	23
22,511 32	59,828 13	.....	82,339 45	24
2,183 48	7,713 90	210 55	10,107 93	25
7,021 95	39,659 23	.....	46,681 18	26
5,273 79	29,532 79	516 83	35,323 41	27
4,394 08	41,821 92	.....	46,216 00	28
1,142,976 64	3,979,588 11	28,623 16	5,151,187 91	29
7,363,945 45	21,817,788 31	819,302 91	30,001,036 67	30
.....	28,442 00	.....	28,442 00	31
5,438 43	16,448 99	.....	21,887 42	32
18,514 58	90,166 07	.....	108,680 65	33
.....	3,348 99	.....	3,348 99	34
1,421,649 48	4,182,135 90	29,436 54	5,633,221 92	35
6,097 48	19,397 05	12 50	25,507 03	36
.....	.....	830 00	830 00	37
80 25	17,822 96	507 00	18,410 21	38
527,642 47	1,370,982 16	5,424 22	1,904,048 85	39
\$47,445,885 40	\$137,833,882 16	\$2,733,524 83	\$188,014,292 39	.....



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*Statistical Tables.*


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 Passenger earnings, whole line, year ending June 30, 1900.
 

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Name of Company.	For sale of tickets.	Mail.	Express.
1 Abbotsford & Northeastern .....	\$1,365 04	\$656 64	\$156 90
2 Ahnapee & Western .....	16,816 38	2,843 18	1,450 79
3 Big Falls Ry. Co. ....	472 70	240 94	.....
4 Bayfield Harbor & Great Western ..	.....	.....	.....
5 Bayfield Transfer Ry. ....	2,965 82	159 88	.....
6 Chicago, Milwaukee & St. Paul .....	7,698,513 51	1,399,106 24	729,000 00
7 Chicago & Northwestern .....	9,194,321 87	1,024,470 83	578,399 12
8 Chicago, St. Paul, Minn. & Omaha .....	2,394,539 52	227,411 58	167,803 38
9 Chicago, Burlington & Northern .....	8,048,890 31	1,582,772 75	765,959 56
10 Chicago, Madison & Northern .....	277,270 13	37,981 51	34,993 55
11 Chippewa River & Menomonie .....	506 59	.....	.....
12 Duluth, South Shore & Atlantic .....	766,728 32	55,335 34	54,855 80
13 Dunbar & Wausaukee .....	1,045 20	.....	.....
14 Eastern Railway Co. of Minnesota .....	418,531 75	34,141 95	14,464 27
15 Fairchild & North Eastern .....	1,973 58	375 60	40 34
16 Green Bay & Western .....	96,397 80	19,994 60	3,483 03
17 Hazelhurst & South Eastern .....	695 55	.....	107 39
18 Iola & Northern .....	1,132 06	222 72	16 98
19 Kewaunee, Green Bay & Western .....	18,494 76	3,019 18	600 00
20 Mattoon Ry. Co. ....	.....	.....	.....
21 Marshfield & South Eastern .....	6,539 23	.....	482 72
22 Marinette, Tomahawk & Western .....	4,759 65	210 63	303 51
23 Minnesota & Wisconsin .....	3,233 70	570 65	589 73
24 Minn., St. Paul, & Sault Ste. Marie .....	822,908 78	195,144 67	80,744 06
25 Northern Pacific .....	6,006,155 76	696,847 91	447,101 46
26 Winona Bridge Ry. Co. ....	5,438 43	.....	.....
27 Wisconsin & Michigan .....	16,020 27	2,196 79	259 67
28 Wisconsin Central Ry. Co. ....	1,124,914 04	119,006 30	104,000 00
29 Wisconsin Western .....	4,997 23	744 55	355 59
30 Hawthorne, Nebagamon & Superior ..	80 25	.....	.....
31 St. Paul & Duluth .....	436,711 27	28,917 71	22,500 00
	\$37,372,419 50	\$5,432,372 15	\$3,007,667 85

*Statistical Tables.*

Passenger earnings, whole line, year ending June 30, 1900—Continued.

News.	Extra baggage and storage.	Sleeping and parlor cars.	Miscellaneous.	Total passenger earnings.	No.
.....	.....	.....	.....	\$2,178 58	1
.....	\$467 08	.....	.....	21,577 43	2
.....	.....	.....	.....	713 64	3
.....	.....	.....	.....	.....	4
.....	.....	.....	.....	3,125 70	5
\$13,862 32	168,735 96	\$262,377 23	\$180,424 49	10,452,019 75	6
.....	179,761 10	.....	19,721 65	10,996,674 57	7
.....	60,867 65	.....	.....	2,850,622 13	8
.....	157,145 08	.....	81,819 00	10,636,586 70	9
.....	6,694 44	.....	87,827 71	444,767 34	10
.....	.....	.....	.....	506 59	11
.....	10,678 44	.....	4,433 50	892,031 40	12
.....	.....	.....	.....	1,045 20	13
.....	3,508 43	.....	18,336 27	488,982 67	14
.....	62 65	.....	.....	2,452 17	15
.....	1,394 42	.....	.....	121,269 85	16
.....	2 60	.....	.....	805 54	17
.....	.....	.....	.....	1,371 76	18
.....	397 38	.....	.....	22,511 32	19
.....	.....	.....	.....	2,183 48	20
.....	.....	.....	.....	7,021 95	21
.....	.....	.....	.....	5,273 79	22
.....	.....	.....	.....	4,394 08	23
.....	14,407 68	.....	29,771 45	1,142,976 64	24
.....	111,743 68	.....	102,096 64	7,363,945 45	25
.....	.....	.....	.....	5,438 43	26
.....	37 85	.....	.....	18,514 58	27
.....	13,020 18	.....	60,708 96	1,421,649 48	28
.....	11	.....	.....	6,097 48	29
.....	.....	.....	.....	80 25	30
.....	6,054 84	27,069 25	6,389 40	527,642 47	31
\$13,862 32	\$734,979 57	\$289,446 48	\$591,529 07	\$47,444,460 42	.....

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*Statistical Tables.*


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Earnings from operations other than passenger and freight, whole line, year ending June 30, 1900.

Name of Company.	Car mileage balance.	Switching charges balance.	Telegraph companies.
1 Abbotsford & Northeastern .....			\$68 85
2 Ahnapee & Western .....			
3 Big Falls Ry. Co. ....			
4 Bayfield Harbor & Great Western.. }			
5 Bayfield Transfer Ry. ....			
6 Chicago, Milwaukee & St. Paul .....			33,737 12
7 Chicago & Northwestern .....			
8 Chicago, St. Paul, Minn. & Omaha...	\$68,538 03		
9 Chicago, Burlington & Quincy .....	372,834 37		98,393 97
10 Chicago, Lake Shore & Eastern.....	288,271 89	\$128,817 90	
11 Chicago & Lake Superior .....			
12 Chicago, Madison & Northern .....			
13 Chippewa River & Menomonie .....			
14 Drummond & South Western .....			1,380 39
15 Duluth, South Shore & Atlantic .....		22,994 50	
16 Duluth, Superior & Western .....			
17 Dunbar & Wausaukee .....		18,143 48	2,548 90
18 Eastern Railway Co. of Minnesota .....			
19 Fairchild & North Eastern .....			
20 Green Bay & Western .....			
21 Hazelhurst & Soutoh Eastern .....			
22 Iola & Northern .....	3 82		
23 Glenwood & Northeastern .....			
24 Kewaunee, Green Bay & Western .....			
25 Mattoon Ry. Co. ....	210 55		
26 Marshfield & South Eastern .....			
27 Marinette, Tomahawk & Western ....	7 19		48 14
28 Minnesota & Wisconsin .....			29,013 13
29 Minneapolis, St. P. & Sault Ste. Marie .....			59,090 73
30 Northern Pacific .....			
31 Northwestern Coal Ry. Co. ....			
32 Winona Bridge Ry. Co. ....			
33 Wisconsin & Michigan .....			
34 Whitcomb & Morris .....			
35 Wisconsin Central Ry. Co. ....			
36 Wisconsin Western .....			
37 Holmes & Son .....		830 00	
38 Hawthorne, Nebagamon & Superior .....		507 00	
39 St. Paul & Duluth .....			
	\$729,865 85	\$473,403 30	\$24,281 23

Statistical Tables.

Earnings from operations other than passenger and freight, whole line, year ending June 30, 1900—Continued.

Rents from tracks yards and terminals.	Other rentals.	Other sources.	Total earnings from operation.	Total gross earnings from operation.	No.
\$75 60			\$144 45	\$13,731 47	1
				42,419 64	2
				10,390 91	3
				7,956 27	4
111,374 97			145,112 09	41,884,692 00	5
32,138 18	62,150 84	12,890 58	107,179 60	43,390,394 91	6
40,526 10	20,558 02		129,622 15	10,409,863 89	7
309,678 91		82,402 30	863,309 55	37,962,068 42	8
		36,469 77	453,559 56	2,421,523 83	9
				3,521 19	10
25,161 00	883 83		26,044 83	1,457,182 24	11
				33,220 26	12
				14,978 78	13
4,486 04	2,096 09	48,779 53	56,742 05	2,613,942 56	14
200 00	2 47		23,196 97	332,151 17	15
				25,423 31	16
16,152 75	4,204 68	2,696 24	43,746 05	3,729,437 41	17
				34,612 66	18
				484,106 20	19
				19,500 02	20
				3 82	21
				5,040 63	22
				265 00	23
				82,339 45	24
			210 55	10,107 93	25
	461 50			46,681 18	26
			516 83	35,323 41	27
				462 16	28
298,755 61	135,275 83	†389 97	28,623 16	5,151,187 91	29
		24,070 32	819,302 91	30,001,036 67	30
				28,442 00	31
				21,887 42	32
				108,680 65	33
				3,348 99	34
7,501 45	5,760 24	16,174 85	29,436 54	5,633,221 92	35
		12 50	12 50	25,507 03	36
			830 00	830 00	37
			507 00	18,410 21	38
4,064 95		1,359 27	5,424 22	1,904,048 85	39
\$850,115 56	\$213,393 50	\$224,855 36	\$2,733,524 83	\$188,014,292 39	

## Statistical Tables.

## Bonds owned June 30, 1900.—Wisconsin.

NAME OF COMPANY.	WISCONSIN.			
	Total par value.	Rate.	Income or dividend received.	Valuation.
Chicago, Milwaukee & St. P.	\$2,359,754 95	.....	6,094 95	\$2,353,923 96
Chicago & Northwestern .....	17,287,754 14	5-7	429,591 56	.....
Chicago, St. P., M. & O.....	50,000 00	.....	.....	50,000 00
Chicago, Burlington & North.	.....	.....	*28,396 99	*371,169 55
Eastern R'y Co. of Minnesota	*99,875 00	.....	*4,717 50	*99,875 00
Minnesota & Wisconsin .....	18,250 00	.....	.....	.....
M., St. P. & Sault Ste. Marie	*10,073 80	4-6	29 26	*10,073 80
Northern Pacific .....	*284,718 57	.....	*2,023 57	*212,693 38
Wisconsin Central R'y Co. ...	35,000 00	6	2,100 00	35,000 00
St. Paul & Duluth .....	206 46	7	3 85	55 05
	\$20,145,632 92	5.83%	\$472,957 69	\$3,132,790 74

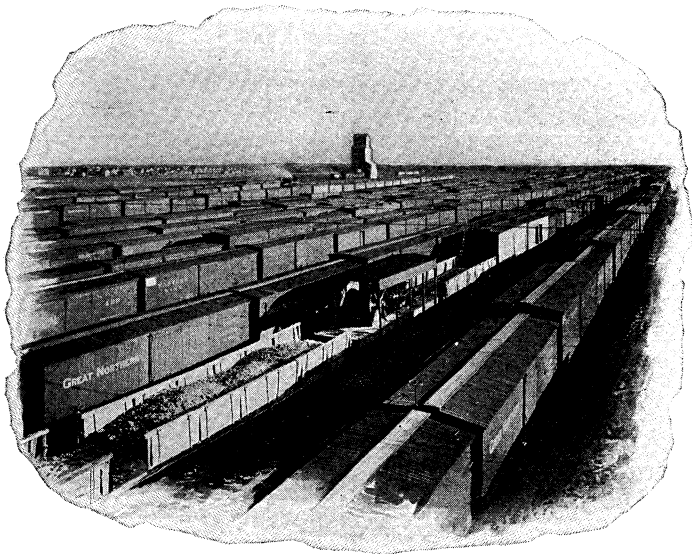
\*Proportionate.

## Bonds owned June 30, 1900.—Whole Line.

NAME OF COMPANY.	WHOLE LINE.			
	Total par value.	Rate.	Income or dividend received.	Valuation.
Chicago, Milwaukee & St. P.	\$9,185,500 00	.....	\$23,725 00	\$9,162,802 50
Chicago & Northwestern .....	55,348,982 61	5, 7,	1,375,393 00	.....
Chicago, St. P., M. & O. ....	3,284,000 00	5, 4,	5,830 00	3,284,000 00
Chicago, Burlington & North.	.....	.....	835,205 76	10,916,751 60
Eastern R'y Co. of Minnesota	1,175,000 00	4, 5, 6,	55,500 00	1,175,000 00
Minnesota & Wisconsin .....	18,250 00	.....	.....	.....
M., St. P. & Sault Ste. Marie	48,200 00	4, 6,	140 00	48,200 00
Northern Pacific .....	13,688,393 01	.....	97,287 11	10,225,643 52
Wisconsin Central R'y Co.....	45,000 00	4, 5, 6,	2,500 00	45,000 00
St. Paul & Duluth .....	3,700 00	7	70 00	1,001 00
	\$82,279,025 62	5.23%	\$2,395,650 87	\$34,858,398 52



PARTIAL VIEW EASTERN MINNESOTA RAILWAY TERMINALS.  
WEST SUPERIOR.



FREIGHT YARDS EASTERN MINNESOTA RAILWAY.  
SUPERIOR.



## Statistical Tables.

Stocks owned June 30, 1900 — Wisconsin.

NAME OF COMPANY.	WISCONSIN			
	Total par value.	Rate.	Income or dividends received.	Valuation.
Bayfield Harbor & Gt. West.				
Bayfield Transfer R'y .....	\$1,324,600 00			\$1,324,600 00
Chicago, Milwaukee & St. P..	2,942,198 63		\$718 68	91,890 67
Chicago & Northwestern .....	1,730,368 89	2%	137 43	
Chicago, St. P., M. & O. ....	15,700 00			15,300 00
Chicago, Burlington & North.			*43,704 69	*865,514 54
Chicago, Lake Shore & East..	*2,700 00			
Chicago, Madison & Northern			15,788 00	
Duluth, South Shore & Atl..	*90,026 41		123,105 35	
Eastern R'y Co. of Wisconsin	*48,084 50		*3,230 00	*48,084 50
Green Bay & Western .....	433,900 00			154,610 00
M., St. P. & Sault Ste. Marie	*63,086 65		*548 62	*63,086 65
Northern Pacific .....	*215,359 19			*64,716 66
Wisconsin Central R'y Co.....	4,010,282 65			2,394,990 19
St. Paul & Duluth .....	*93,329 91		*556 87	*11,553 76
	\$8,969,636 83		\$187,789 64	\$5,034,346 97

\*Proportionate.

Stocks owned June 30, 1900 — Whole Line.

NAME OF COMPANY.	WHOLE LINE.			
	Total par value.	Rate.	Income or dividends received.	Valuation.
Bayfield Harbor & Gt. West.				
Bayfield Transfer R'y .....	\$1,324,600 00			\$1,324,600 00
Chicago, Milwaukee & St. P..	11,452,700 00	6, 1½	\$2,797 50	358,040 75
Chicago & Northwestern .....	5,540,000 00	2	440 00	
Chicago, St. P., M. & O. ....	4,785,511 65	6, 23	111,392 00	4,314,611 65
Chicago, Burlington & North.			1,285,432 25	25,456,310 13
Chicago, Lake Shore & East..	50,000 00			
Chicago, Madison & Northern				40,000 00
Duluth, South Shore & Atl..	464,053 66			634,563 70
Eastern R'y Co. of Minnesota	565,700 00	6, 7	38,000 00	565,700 00
Green Bay & Western .....	433,900 00			154,610 00
Minnesota & Wisconsin .....				
M., St. P. & Sault Ste. Marie.	301,850 00		2,625 00	301,850 00
Northern Pacific .....	10,353,807 51			3,111,378 31
Wisconsin Central R'y Co. ....	4,055,139 96			2,696,649 12
St. Paul & Duluth .....	1,696,907 51	5, 6	10,125 00	210,068 38
	\$41,474,170 29		\$1,450,811 75	\$39,168,382 04



*Statistical Tables.*

Rents received from lease of yards, tracks and terminals — Wisconsin.

NAME OF COMPANY.	WISCONSIN.			
	Tracks.	Yards.	Terminals.	Total.
Abbotsford & Northeastern ..	\$75 60	.....	.....	\$75 60
Chicago, Milwaukee & St. P..	*9,624 35	.....	.....	\$45,436 42
Chicago & Northwestern .....	3,791 25	6,246 82	.....	10,038 07
Chicago, St. P. M. & O. ....	.....	*14,967 39	*1,121 46	*16,088 86
Chicago, Burlington & North.	.....	.....	.....	*10,529 08
Chicago, Madison & Northern	*9,824 61	.....	.....	*9,824 61
Duluth, South Shore & Atl....	107 75	.....	.....	107 75
Duluth, Superior & Western..	200 00	.....	.....	200 00
Eastern R'y Co. of Minnesota	.....	.....	10,452 25	10,452 25
Northern Pacific .....	4,791 99	.....	.....	4,791 99
Wisconsin Central R'y Co. ....	4,505,139 96	.....	.....	2,696,649 12
St. Paul & Duluth .....	*215 32	.....	*8 25	*223 57
	\$29,440 63	\$21,214 21	\$11,651 55	\$108,657 65

\*Proportionate.

Rents received from lease of tracks, yards and terminals — Whole Line.

NAME OF COMPANY.	WHOLE LINE.			
	Tracks.	Yards.	Terminals.	Total.
Abbotsford & Northeastern ..	\$75 60	.....	.....	\$75 60
Chicago, Milwaukee & St. P..	.....	.....	.....	\$152,933 07
Chicago & Northwestern .....	12,138 18	\$20,000 00	.....	\$32,138 18
Chicago, St. P. M. & O. ....	37,701 25	.....	2,824 85	40,526 10
Chicago, Burlington & North.	.....	.....	.....	309,678 91
Chicago, Madison & Northern	.....	.....	.....	25,161 00
Duluth, South Shore & Atl..	1,391 75	68 40	3,025 89	4,486 04
Duluth, Superior & Western..	200 00	.....	.....	200 00
Eastern R'y Co. of Minnesota	5,700 50	.....	10,452 25	16,152 75
Northern Pacific .....	.....	.....	.....	298,755 61
Wisconsin Central R'y Co.....	7,431 86	.....	69 59	7,501 45
St. Paul & Duluth .....	3,914 95	.....	150 00	4,064 95
	\$68,554 09	\$20,068 40	\$16,522 55	\$891,673 66

## Statistical Tables.

## Miscellaneous income June 30, 1900 — Wisconsin.

NAME OF COMPANY.	WISCONSIN.		
	Gross income.	Less expenses.	Net miscellaneous.
Chicago, Milwaukee & St. Paul .....			\$30,374 10
Chicago & Northwestern .....	\$36,782 73	\$372 34	\$36,410 29
Chicago, St. Paul, Minneapolis & Omaha .....			\$312,079 96
Chicago, Burlington & Northern .....			*11,575 34
Duluth, South Shore & Atlantic .....	31 00		31 00
Dunbar & Wausaukee .....	25,423 31	5,579 53	19,843 78
Eastern Railway Co. of Minnesota .....			44,657 10
Green Bay & Western .....	66 62		66 62
Kewaunee, Green Bay & Western .....	3,324 18		3,324 18
Northern Pacific .....	*12,235 27		*12,235 27
Northwestern Coal R'y Co. ....	160,551 66	113,467 11	47,084 55
Wisconsin Central R'y Co. ....	7,130 '8		7,130 78
Wisconsin Western .....	260 00		260 00
St. Paul & Duluth .....			*1,051 56
	\$245,805 55	\$119,418 98	\$526,124 64

\*Proportionate.

## Miscellaneous income June 30, 1900.—Whole Line.

NAME OF COMPANY.	WHOLE LINE.		
	Gross income.	Less expenses.	Net miscellaneous.
Chicago, Milwaukee & St. Paul .....			\$118,233 17
Chicago & Northwestern .....	\$117,764 69	\$1,192 11	116,572 58
Chicago, St. Paul, Minneapolis & Omaha .....			343,177 37
Chicago, Burlington & Northern .....			340,451 45
Duluth, South Shore & Atlantic .....	6,464 59	1,336 06	5,128 53
Dunbar & Wausaukee .....	25,423 31	5,579 53	19,843 78
Eastern Railway Co. of Minnesota .....			268,280 30
Green Bay & Western .....	3,324 18		3,324 18
Kewaunee, Green Bay & Western .....	66 62		66 62
Northern Pacific .....	588,234 19		588,234 19
Northwestern Coal R'y Co. ....	160,551 66	113,467 11	47,084 55
Wisconsin Central R'y Co. ....	9,972 19		9,972 19
Wisconsin Western .....	260 00		260 00
St. Paul & Duluth .....			19,119 38
	\$912,061 43	\$121,574 81	\$1,879,748 29

## Statistical Tables.

Operating expenses, Wisconsin, June 30, 1900, apportioned between passenger and freight traffic, maintenance of way and structures.

Name of Company.	Repairs of roadway.	Renewals of rails.	Renewals of ties.
1 Abbotsford & Northeastern .....	\$3,121 83	\$122 41	\$1,018 95
2 Ahnapee & Western .....	5,237 21		7,628 60
3 Bayfield Harbor & Great Western....			
3 Bayfield Transfer R'y .....	1,673 84		
4 Chicago, Milwaukee & St. Paul .....	1,078,326 98	264,022 81	241,301 09
5 Chicago & Northwestern .....	920,295 80	107,992 90	217,586 60
6 Chicago, St. Paul, Minneapolis & Om.	*336,058 37	*36,801 76	*76,255 22
7 Chicago, Burlington & Northern* .....	10,574 33	8,534 36	39,240 40
8 Chicago, Lake Shore & Eastern.....	14,230 45	2,917 20	1,225 52
9 Chicago & Lake Superior .....	915 33	188 29	
10 Chicago, Madison & Northern .....	20,724 22	43 66	9,449 28
11 Chippewa River & Menomonic .....	4,903 96		
12 Drummond & South Western .....	4,675 82		431 73
13 Duluth, South Shore & Atlantic.....	35,325 57		5,193 58
14 Duluth, Superior & Western .....	4,022 90	250 70	757 97
15 Eastern R'y Co. of Minnesota .....	32,529 73	279 70	2,950 02
16 Fairchild & North Eastern .....	3,147 15		
17 Green Bay & Western .....	55,473 13	38,509 16	27,965 02
18 Hazelhurst & South Eastern .....	1,128 02		
19 Iola & Northern .....	361 90	506 00	
20 Glenwood & Northeastern .....	663 00		150 00
21 Kewaunee, Green Bay & Western .....	8,764 62		1,448 96
22 Marshfield & South Eastern .....	192 40		309 00
23 Marinette, Tomahawk & Western .....	10,747 05	1,538 74	1,415 90
24 Minnesota & Wisconsin .....	2,439 92		1,742 80
25 Minneapolis, St. Paul & Sault St. Marie	90,331 27	*201 47	28,581 66
26 Northern Pacific .....	40,718 22	700 57	7,387 09
27 Northwestern Coal R'y Co. ....	1,457 79	72 96	
28 Winona Bridge R'y Co. ....	936 60		
29 Wisconsin & Michigan .....	8,277 46	454 94	604 82
30 Whitcomb & Morris .....	1,250 00		200 00
31 Wisconsin Central R'y Co. ....	298,342 44	81,275 54	96,757 32
32 Wisconsin Western .....	6,467 62		1,648 00
33 Hawthorne, Nebagamon & Superior.....	2,148 23	100 00	
34 St. Paul & Duluth .....	1,893 99	84	474 28
	\$3,007,457 65	\$544,514 08	\$771,723 81

\*Proportionate.

Statistical Tables.

Operating expenses, Wisconsin, June 30, 1900, apportioned between passenger and freight traffic, maintenance of way and structures.

Repairs of bridges and culverts.	Repairs of fences, road crossings, signs and cattle yards.	Repairs of buildings.	Repairs of docks and wharves.	Repairs of telegraphs.	Other expenses.	Total.	No.
\$775 15	\$24 75	\$37 82		\$673 96		\$5,774 87	1
1,774 31	77 86					14,717 98	2
	4 83	40 48	\$ 10 85		\$ 2 00	1,732 00	3
393,262 05	46,980 25	185,231 11	6,492 02	13,177 93	460,965 12	2,639,759 36	4
209,364 40	66,760 46	203,028 26	29,687 79	7,027 55	7,66 983	1,769,513 59	5
*128,998 64	*18,462 95	*95,519 65	*11,244 52	*7,337 79	*266 29	1916,568 89	6
34,718 03		25,845 31	785 51	1,846 85	47 53	222,005 75	7
	23 00	950 68		90 00		19,436 85	8
						1,104 12	9
24,204 63	2,764 49	3,759 85		200 87	240 73	61,337 73	10
				68 94		4,972 90	11
				256 04		5,363 59	12
3,982 76	439 12	2,242 58	2,584 13	492 95	8 69	50,179 38	13
18,368 30		941 52	35,704 33	134 03		60,179 75	14
						2,000 00	15
8,970 32	167 71	8,841 02	3,000 59	428 37	99 11	57,266 64	16
						3,147 15	17
24,614 67	450 43	11,241 54		660 00		158,913 95	18
		26				1,128 28	19
12 00	8 64	15 75				904 29	20
	135 00					948 00	21
16,564 83		1,485 11	19 76	24 56		28,307 84	22
	34 79	26 74			5,344 48	5,907 41	23
725 02	25 29					14,452 00	24
362 23	185 07	155 04		30 23		4,915 29	25
18,377 94	1,316 82	8,156 78		2,597 82		149,760 82	26
5,186 16	1,060 17	5,313 28	4,797 01	456 75	795 78	66,415 03	27
23 47		153 73				1,712 95	28
						936 60	29
123 55	20 85	331 32		162 63	9 98	9,985 55	30
						1,450 00	31
69,037 17	10,465 56	43,285 72	21,310 59	7,224 46	18,970 76	646,669 56	37
1,970 43	1,084 67	178 95				11,349 67	33
						2,248 23	34
562 48	67 13	618 33	43 00	18 71	1 97	3,680 73	35
‡961,983 54	‡150,559 84	‡587,400 82	‡115,680 10	‡42,820 44	‡494,422 27	‡6,994,196 75	

\*Proportionate.  
‡Actual expenses.

*Statistical Tables.*

Operating expenses, Wisconsin, year ending June 30, 1900.

NAME OF COMPANY.	MAINTENANCE OF EQUIPMENT.	
	Repairs and renewals of locomotives.	Repairs and renewals of passenger cars.
1 Abbotsford & Northeastern .....	\$1,832 37	.....
2 Alnapee & Western .....	941 13	\$400 00
3 Bayfield Harbor & Great Western .....	.....	.....
4 Bayfield Transfer Ry. ....	255 67	7 04
5 Chicago, Milwaukee & St. Paul .....	295,673 35	143,755 36
6 Chicago & Northwestern .....	666,005 09	155,530 11
7 Chicago, St. Paul, Minneapolis & Omaha.....	*131,061 81	44,155 67
8 Chicago, Burlington & Northern .....	*16,640 28	62,071 80
9 Chicago, Lake Shore & Eastern .....	697 81	.....
10 Chicago & Lake Superior .....	46 58	41 57
11 Chicago, Madison & Northern .....	4,740 47	1,436 05
12 Chippewa River & Menomonic .....	1,044 26	.....
13 Drummond & South Western .....	1,309 52	.....
14 Duluth, South Shore & Atlantic .....	9,113 92	3,654 85
15 Duluth, Superior & Western .....	1,552 95	.....
16 Eastern Railway Co. of Minnesota.....	10,562 05	2,506 48
17 Fairchild & North Eastern .....	880 41	32 01
18 Green Bay & Western .....	19,250 64	13,604 04
19 Hazelhurst & South Eastern .....	1,879 07	5 54
20 Iola & Northern .....	232 44	2 53
21 Glenwood & Northeastern .....	.....	.....
22 Kewaunee, Green Bay & Western .....	4,295 37	1,817 76
23 Mattoon Ry. Co. ....	.....	.....
24 Marshfield & South Eastern .....	175 37	.....
25 Marinette, Tomahawk & Western .....	2,205 38	47 18
26 Minnesota & Wisconsin .....	2,264 66	249 91
27 Minneapolis, St. Paul & Sault Ste. Marie.....	51,328 46	12,285 80
28 Northern Pacific .....	8,051 81	3,595 27
29 Northwestern Coal Ry. Co. ....	850 81	.....
30 Wisconsin & Michigan .....	2,882 16	303 15
31 Whitcomb & Morris .....	550 28	.....
32 Wisconsin Central Ry. Co. ....	153,962 77	59,463 82
33 Wisconsin Western .....	2,567 14	1,713 66
34 Hawthorne, Nebagamon & Superior .....	503 41	.....
35 St. Paul & Duluth .....	605 12	386 50
	\$1,393,962 56	\$507,065 80

\*Proportionate.

Statistical Tables.

Operating expenses, Wisconsin, year ending June 30, 1900—Continued.

MAINTENANCE OF EQUIPMENT.					No.
Repairs and renewals of freight cars.	Repairs and renewals of ferry boats, tugs, floats and barges.	Shop machinery tools, etc.	Other expenses.	Total.	
\$179 39		\$0 15		\$2,011 91	1
551 72		265 28		2,158 13	2
					3
264 69				527 40	4
385,541 82	\$10,170 12	27,986 57	\$480,944 79	1,344,072 01	5
323,688 04	267 31	38,737 06	166,590 64	1,350,818 25	6
162,984 11	8,896 47	18,497 51	41,100 16	406,695 13	7
51,240 01	1,840 75	6,183 44	11,974 98	149,951 23	8
4,825 02		5 54		5,528 37	9
				88 45	10
3,713 46		896 95	2,859 93	13,646 86	11
890 94		1,737 28		3,672 48	12
869 95		666 72		2,846 20	13
11,497 65		796 61	2,325 29	27,388 42	14
12,198 77	203 70			13,955 42	15
26,453 75	1,831 45	429 50	1,007 48	42,790 71	16
296 02				1,208 44	17
17,026 41		2,111 60	9,494 56	61,487 25	18
1,242 27				3,126 88	19
				234 97	20
			1,430 71	1,430 71	21
760 72			665 00	7,538 85	22
			1,264 67	1,264 67	23
			67 19	401 53	24
158 97				2,685 01	25
381 31		51 14		2,871 37	26
177 29		179 51		141,202 62	27
69,746 90		4,113 77	3,727 69	27,226 23	28
11,472 64		1,837 68	2,268 83	850 81	29
				10,256 59	30
6,896 96		136 04	38 28	725 28	31
25 00		150 00		412,999 37	32
164,521 86		11,286 28	23,764 64	5,365 92	33
106 73		246 55	731 84	2,286 88	34
1,547 20			236 27	2,343 57	35
1,016 21	121 42	83 74	130 58		
\$1,260,275 81	\$23,331 22	\$116,398 93	\$750,623 63	\$4,051,657 92	.....

## Statistical Tables.

Operating expenses, Wisconsin, year ending June 30, 1900—Conducting transportation.

Name of Company.	Wages of enginemen, firemen and roundhouse men.	Fuel for locomotives.	Water supply for locomotives.
1 Abbotsford & Northeastern .....	\$1,505 49	\$1,709 39	\$0 35
2 Ahnapee & Western .....	1,923 10	2,183 58	58 98
3 Bayfield Harbor & Great Western... }			
4 Bayfield Transfer Ry. .... }	2,388 41	1,869 56	38 00
5 Chicago, Milwaukee & St. Paul.....	721,396 07	774,075 91	26,099 59
6 Chicago & Northwestern .....	984,641 93	1,004,598 43	41,869 73
7 Chicago, St. Paul, Minn. & Omaha*....	234,957 80	296,719 27	11,611 63
8 Chicago, Burlington & Northern* .....	77,024 27	79,905 10	4,728 67
9 Chicago, Lake Shore & Eastern.....	7,650 45	7,840 31	274 85
10 Chicago & Lake Superior .....	600 00	1,277 30	
11 Chicago, Madison & Northern .....	15,130 95	9,163 44	992 41
12 Chippewa River & Northern .....	4,320 83	2,600 00	
13 Drummond & South Western .....	1,599 04	2,073 44	
14 Duluth, South Shore & Atlantic.....	21,794 82	26,471 89	1,347 58
15 Duluth, Superior & Western .....	5,695 97	5,498 47	211 69
16 Dunbar & Wausaukee .....	2,256 00	1,000 00	
17 Eastern Railway Co. of Minnesota.....	22,970 52	30,957 21	1,928 42
18 Fairchild & North Eastern .....	3,360 00	2,007 03	192 57
19 Green Bay & Western .....	29,881 19	35,759 42	1,149 28
20 Hazelhurst & South Eastern .....	3,200 29	2,818 10	
21 Iola & Northern .....	907 18	998 50	
22 Glenwood & Northeastern .....	1,974 44	1,800 00	
23 Kewaunee, Green Bay & Western.....	3,822 79	5,337 25	38 68
24 Mattoon Ry. Co. ....		2,254 98	
25 Marshfield & South Eastern .....	2,471 04	3,780 55	110 46
26 Marinette, Tomahawk & Western .....	3,745 27	6,259 43	100 00
27 Minnesota & Wisconsin .....	3,236 14	5,175 69	
28 Minn., St. Paul & Sault Ste. Marie....	70,356 41	86,717 10	4,387 53
29 Northern Pacific .....	13,902 61	27,800 32	1,907 33
30 Northwestern Coal Ry. Co. ....	2,512 18	1,948 18	169 75
31 Winona Bridge Ry. Co. ....	520 00	75 60	
32 Wisconsin & Michigan .....	4,560 90	7,820 85	416 42
33 Whitcomb & Morris .....	1,260 00	225 00	
34 Wisconsin Central Ry. Co. ....	327,100 33	384,112 60	19,746 23
35 Wisconsin Western .....	1,371 24	3,408 78	8 07
36 Hawthorne, Nebagamon & Superior....	2,361 22	2,568 08	
37 St. Paul & Duluth .....	1,332 15	1,476 82	92 55
	\$2,583,731 03	\$2,830,287 58	\$117,480 77

\*Proportionate.

*Statistical Tables.*

Operating expenses, Wisconsin, year ending June 30, 1900—Continued.

All other supplies for locomotives.	Wages of other trainmen.	All other train supplies.	Wages of switchmen, flagmen and watchmen.	Expenses of telegraphs including dispatchers and operators.	Wages of station agents, clerks and laborers.	Station supplies.
\$58 57	\$624 64	\$5 91			\$660 00	\$53 55
270 74	1,270 34	196 36	\$429 25	\$69 42	1,614 52	310 47
130 85	876 31	63 44			15 00	
29,618 45	552,185 85	84,787 90	273,108 62	78,504 64	555,985 89	54,002 70
46,352 82	691,906 30	122,445 48	332,717 80	183,896 39	575,221 83	55,581 51
10,967 96	173,732 66	32,135 73	59,751 96	50,183 51	157,120 62	17,691 97
791 63	55,150 15	16,001 44	30,770 02	43,613 87	46,698 32	3,986 69
	2,990 52	131 75	8,461 53		1,482 00	101 84
51 41	480 00		296 75		480 00	20 57
1,546 27	9,157 53	2,177 32	712 83	2,848 73	8,331 44	660 23
285 90		65 42	1,229 09			238 43
143 95	646 33	68 85				
993 23	15,255 79	2,858 59	6,699 88	4,094 78	16,290 46	889 92
252 43	76 87	201 41	7,093 45	705 24	27,225 27	710 75
	1,164 00					
1,411 90	13,985 28	4,877 58	28,464 46	6,634 11	71,008 75	6,412 57
	2,027 89		551 37			
1,343 31	19,776 07	1,642 38	6,896 94	2,367 60	19,733 93	1,829 46
212 57	1,476 74	189 82			591 84	1 50
59 10	815 60	22 38	374 50		366 62	27 79
71 65	5,752 42					
227 93	3,175 23	510 85	458 25	300 00	2,954 50	61 35
			7,070 05			
	2,091 05				2,039 21	
576 74	2,859 38	152 58	940 04		1,641 70	19 68
290 42	2,181 12		722 50		1,171 02	281 27
3,535 80	61,073 90	12,052 05	3,212 58	15,138 46	22,682 81	2,676 23
625 18	15,368 39	2,626 18	6,820 10	5,821 34	15,122 67	1,973 42
104 43			5,430 42		1,711 73	134 84
			373 10			
278 55	3,930 74	423 62	177 32	471 75	2,007 98	170 02
48 00						
13,070 92	229,987 65	47,412 53	101,480 17	77,737 81	227,367 43	16,682 22
44 82	1,530 26	88 65			2,505 38	193 50
346 29	1,040 69	41 74			820 80	92 54
77 10	871 22	286 79	596 66	234 85	1,070 66	92 19
\$114,368 92	\$1,873,466 12	\$331,466 75	\$884,939 64	\$472,622 50	\$1,763,922 38	\$164,899 21



*Statistical Tables.*

Operating expenses, Wisconsin year ending June 30, 1900—Conducting transportation.

Name of Company.	Switching charges, balance.	Car mileage balance.
1 Abbotsford & Northeastern .....		\$143 00
2 Ahnapee & Western .....		
3 Bayfield Harbor & Great Western .....		
4 Bayfield Transfer Ry. ....		
5 Chicago, Milwaukee & St. Paul.....	\$22,807 00	\$58,320 63
6 Chicago & Northwestern .....	103,770 94	84,180 51
7 Chicago, St. Paul, Minneapolis & Omaha*.....	1,731 20	
8 Chicago, Burlington & Northern*.....	314 56	5,543 01
1 9 Chicago, Lake Shore & Eastern .....		
10 Chicago & Lake Superior .....		
11 Chicago, Madison & Northern .....		
12 Chippewa River & Menomonie .....		
13 Drummond & South Western .....		
14 Duluth, South Shore & Atlantic .....	355 25	2,214 14
15 Duluth, Superior & Western .....	1 75	
16 Dunbar & Wausaukee .....		
17 Eastern Railway Co. of Minnesota .....	19,944 71	5,501 64
18 Fairchild & North Eastern .....	30 00	137 89
19 Green Bay & Western .....	8,414 10	
20 Hazelhurst & South Eastern .....		
21 Iola & Northern .....		
22 Glenwood & Northeastern .....		
23 Kewaunee, Green Bay & Western .....	1,154 56	1,947 78
24 Mattoon R'y Co. ....		244 49
25 Marshfield & South Eastern .....		
26 Tomahawk & Western .....		41 58
27 Minnesota & Wisconsin .....		†6,820 74
28 Minneapolis, St. Paul & Sault Ste. Marie.....	†961 30	2,075 78
29 Northern Pacific .....		
30 Northwestern Coal R'y Co. ....		
31 Winona Bridge R'y Co. ....		
32 Wisconsin & Michigan .....	2,908 69	†3,673 16
33 Whitcomb & Morris .....		
34 Wisconsin Central R'y Co. ....	69,703 08	2,561 03
35 Wisconsin Western .....		670 42
36 Hawthorne, Nebagamon & Superior .....		134 16
37 St. Paul & Duluth .....	†594 55	100 86
	\$231,135 84	\$163,816 92

\*Proportionate mileage basis.  
†Red figures.

## Statistical Tables.

Operating expenses, Wisconsin, year ending June 30, 1900—Conducting Transportation.

Loss and damages.	Injuries to persons.	Barges, floats, tugs, ferries, boats. Expenses including wages, fuel and supplies.	Other expenses.	Total.	No.
\$683			\$5 25	\$4,472 98	1
575 89			1,642 70	10,545 35	2
					3
			118 27	5,499 84	4
38,738 81	\$56,582 92	\$43,710 73	19,614 34	3,566,070 05	5
66,675 67	143,411 10	1,167 83	114,820 40	4,553,838 67	6
23,751 04	21,956 77	5,201 71	45,057 65	1,342,398 28	7
4,948 75	4,178 46	740 42	19,786 68	394,183 04	8
	80 00		832 08	29,845 33	9
			28 20	3,334 23	10
			3,595 27	54,316 42	11
	271 27		8,222 27	17,233 21	12
				4,531 61	13
548 75	1,160 09		4,327 93	105,303 10	14
	3,134 00		3,005 10	53,812 40	15
			1,159 53	5,579 53	16
1,320 60	2,187 37	3,795 85	26,868 48	248,269 45	17
30 00			282 00	8,618 75	18
1,468 74	993 54		3,526 67	134,782 63	19
				8,490 86	20
105 63			87 50	3,764 80	21
				9,598 51	22
256 22	573 15		1,984 97	22,803 51	23
		546 05		9,871 08	24
54 83				10,791 63	25
				16,294 82	26
51 28			449 79	13,600 81	27
8,470 11	1,965 17		17,575 16	302,066 27	28
901 69	7,052 59		30,289 37	132,288 97	29
189 94			148 26	12,349 73	30
				*968 70	31
179 82	646 08	284 56		20,604 14	32
				1,533 00	33
25,853 57	21,250 72		74,209 14	1,638,275 43	34
15 07			131 65	9,967 84	35
27 00			20 50	7,453 02	36
62 33	99 13	278 21	805 30	6,882 27	37
\$174,232 57	\$265,542 36	\$55,725 36	\$555,124 46	\$12,740,540 46	
			†169,826 80	†12,048 75	
			\$724,951 26	\$12,752,589 21	

\*Proportional mileage basis.

†Red figures.

‡Balance Burlington.

*Statistical Tables.*

Operating expenses, Wisconsin, year ending June 30, 1900—General Expenses.

Name of company.	Salaries of officers.	Salaries of clerks.	General office expenses and supplies.
1 Abbotsford & Northeastern .....	\$720 00	.....	\$22 68
2 Ahnapee & Western .....	1,200 00	.....	126 75
3 Bayfield Harbor & Great Western.....	.....	.....	.....
4 Bayfield Transfer R'y .....	1,116 65	\$404 50	452 68
5 Chicago, Milwaukee & St. Paul .....	71,547 41	69,351 59	6,085 83
6 Chicago & Northwestern .....	49,135 41	112,336 91	29,003 73
7 Chicago, St. Paul, Minn. & Omaha*..	32,630 08	27,060 83	4,623 02
8 Chicago, Burlington & Northern*.....	9,960 30	9,864 45	2,796 29
9 Chicago, Lake Shore & Eastern .....	697 55	894 88	339 45
10 Chicago, Madison & Northern .....	1,193 11	1,571 92	615 72
11 Chippewa River & Menomonie .....	1,700 00	453 72	213 92
12 Drummond & South Western .....	.....	200 00	8 82
13 Duluth, South Shore & Atlantic.....	3,004 72	3,643 49	400 99
14 Duluth, Superior & Western .....	2,033 31	900 65	254 30
15 Eastern Railway Co. of Minnesota....	3,507 89	4,451 70	503 45
16 Fairchild & North Eastern .....	1,000 00	333 29	30 00
17 Green Bay & Western .....	10,200 00	5,795 67	150 07
18 Hazelhurst & South Eastern .....	.....	.....	.....
19 Iola & Northern .....	.....	.....	.....
20 Kewaunee, Green Bay & Western....	3,700 00	577 00	.....
21 Marshfield & South Eastern .....	1,800 00	.....	1,701 04
22 Marinette, Tomahawk & Western.....	1,324 75	475 00	.....
23 Minnesota & Wisconsin .....	1,800 00	1,200 00	1,310 40
24 Minneapolis, St. Paul & Sault St. Marie	7,321 89	12,688 01	3,209 96
25 Northern Pacific .....	3,656 35	3,985 25	794 18
26 Northwestern Coal R'y Co. ....	2,350 03	1,413 41	63 52
27 Winona Bridge R'y Co.* .....	374 40	113 20	.....
28 Wisconsin & Michigan .....	2,544 62	1,444 02	240 00
29 Whitcomb & Morris .....	.....	200 00	.....
30 Wisconsin Central R'y Co. ....	55,495 77	51,498 95	19,311 03
31 Wisconsin Western .....	773 08	1,073 08	121 67
32 St. Paul & Duluth .....	522 82	244 95	57 90
	\$271,310 14	\$312,176 45	\$72,439 20

\*Proportionate.

## Statistical Tables.

Operating expenses, Wisconsin, year ending June 30, 1900--General Expenses.

Agencies including salaries and rent.	Advertis- ing.	Commis- sioners.	Insurance.	Expenses of fast freight lines.	Expense of traffic associa- tion.	Expense of stock yards and elevators.	No.
.....	.....	.....	\$26 25	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	3
.....	\$387 55	.....	.....	.....	.....	.....	4
\$112,429 45	29,318 48	.....	36,038 90	.....	.....	\$12,401 12	5
112,994 98	34,835 96	\$120,976 36	1,781 47	.....	\$18,693 93	.....	6
29,086 75	6,377 70	5,343 61	6,272 65	.....	7,554 61	26,829 27	7
.....	.....	.....	2,795 24	.....	.....	.....	8
.....	.....	.....	21 76	.....	.....	.....	9
.....	.....	.....	657 06	.....	.....	.....	10
.....	.....	.....	80 00	.....	.....	.....	11
2,240 68	415 55	.....	449 63	.....	.....	.....	12
.....	.....	.....	3,963 28	.....	.....	.....	13
.....	.....	.....	1,611 97	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	15
1,746 56	359 60	.....	1,466 94	.....	.....	.....	16
.....	.....	.....	102 91	.....	.....	.....	17
.....	.....	.....	29 75	.....	.....	.....	18
.....	17 32	.....	345 60	.....	.....	.....	19
.....	.....	.....	468 81	.....	.....	.....	20
.....	.....	.....	341 06	.....	.....	.....	21
.....	.....	.....	190 60	.....	.....	.....	22
22,551 56	3,230 63	.....	3,009 52	.....	.....	.....	23
4,528 46	1,874 53	399 93	1,650 10	.....	.....	.....	24
.....	.....	.....	523 14	.....	.....	.....	25
.....	.....	.....	26 00	.....	.....	.....	26
163 13	.....	175 63	340 71	.....	.....	.....	27
.....	.....	.....	.....	.....	.....	.....	28
90,797 36	18,166 53	12,704 89	.....	.....	.....	.....	29
.....	.....	.....	92 40	.....	.....	.....	30
.....	.....	.....	62 55	.....	.....	.....	31
.....	.....	.....	.....	.....	.....	.....	32
\$376,538 93	\$94,983 85	\$139,600 42	\$62,328 30	.....	\$26,248 54	\$39,230 39	

## Statistical Tables.

Operating expenses, Wisconsin, concluded, year ending June 30, 1900—General Expenses.

Name of Company.	Rentals of yards, tracks and terminals.	Rentals not otherwise provided for.	Legal expenses.
1 Abbotsford & Northeastern .....		\$182 03	
2 Ahnapee & Western .....			35 42
3 Bayfield Harbor & Great Western .....			
4 Bayfield Transfer R'y .....			
5 Chicago, Milwaukee & St. Paul .....	\$58,644 17	12,598 26	14,217 70
6 Chicago & Northwestern .....	29,048 22	4,355 99	40,691 41
7 Chicago, St. Paul, Minn. & Omaha* .....	45,710 84	5,167 32	3,437 52
8 Chicago, Burlington & Northern* .....			3,601 48
9 Chicago, Lake Shore & Eastern .....			275 77
10 Chicago & Lake Superior .....			
11 Chicago, Madison & Northern .....	*2,388 38		935 95
12 Chippewa River & Menomonie .....			
13 Drummond & South Western .....			40 00
14 Duluth, South Shore & Atlantic .....	19,415 01	738 02	848 86
15 Duluth, Superior & Western .....		80 00	10 00
16 Dunbar & Wausaukee .....			
17 Eastern Railway Co. of Minnesota .....			1,193 13
18 Fairchild & North Eastern .....			
19 Green Bay & Western .....	4,644 94		277 29
20 Hazelhurst & South Eastern .....			
21 Iola & Northern .....			
22 Glenwood & Northeastern .....	775 34	1,701 60	
23 Kewaunee, Green Bay & Western .....		108 00	10 00
24 Marshfield & South Eastern .....			
25 Marinette, Tomahawk & Western .....			
26 Minnesota & Wisconsin .....			466 40
27 Minneapolis, St. Paul & Sault St. Marie .....		†546 89	3,412 04
28 Northern Pacific .....		187 12	2,438 37
29 Northwestern Coal R'y Co. .....			781 24
30 Winona Bridge R'y Co. .....			
31 Wisconsin & Michigan .....	7,852 02	680 99	182 03
32 Whitcomb & Morris .....			
33 Wisconsin Central R'y Co. .....	78,186 88	11,649 27	16,137 71
34 Wisconsin Western .....			50 34
34 Hawthorne, Nebagamon & Superior .....			47 23
36 St. Paul & Duluth .....			79 43
	\$246,685 80	\$37,448 60	\$88,569 32

\*Proportionate.

†Red figures.

*Statistical Tables.*

Operating expenses, Wisconsin, concluded, year ending June 30, 1900—General Expenses.

Stationery and printing.	Other general expenses.	Total.	Percentage of operating expenses to earnings.	Mileage upon which based.	No.
\$125 76		\$1,050 47	99.12	15.16	1
213 13		1,607 55	68.	34.	2
56 20		2,417 58	129.91	9.86	3
8,507 14	\$39,035 07	470,175 12	61.23	1,649.88	4
6,273 73	7,809 40	567,937 50	60.81	1,638.60	5
23,888 26	37,160 94	261,143 40	73.53	619.11	6
1,244 71	2,312 76	31,975 33	49.10	223.10	7
88 06	36 90	2,354 57	65.69	17.33	8
	51 64	51 64	130.	3.00	9
200 55	305 49	7,868 18	132.22	91.31	10
	141 37	2,509 01	85.45	33.	11
	108 60	437 42	88.	21.72	12
1,875 57	517 06	33,549 58	71.42	112.28	13
144 40	20 10	7,406 04	40.75	6.16	14
			294.	13.50	15
468 85	3,100 02	14,837 01	61.42	38.15	16
262 46		1,625 75	42.1	30.	17
2,158 00	2,964 54	29,743 61	79.51	225.	18
25 65		128 56	66.	17.	19
63 53	50 16	143 44	100.129	4.70	20
		2,476 94		14.15	21
187 17	502 88	5,447 97	77.85	36.70	22
238 45		4,208 30	45.646	33.	23
548 45	1,772 55	4,461 81	108.88	33.30	24
		4,967 40	57.	21.	25
7,017 67	1,756 75	63,651 14	43.40	271.42	26
1,506 34	2,035 82	23,056 45		87.37	27
63 91	269 32	5,466 37	71.65	2.53	28
	*45 16	*558 76		.54	29
548 45	3,809 65	17,981 25	97.2	40.12	30
		200 00		6.	31
15,816 25	13,465 27	383,229 91	65.88	808.60	32
227 66	3,007 06	5,345 29	126.	51.3	33
		47 23	60.	7.35	34
20 39	43 37	1,031 41	64.56	13.75	35
\$71,766 74	\$120,321 88	\$1,959,091 79	2,558.95	6,229.99	36
				1177.71	

‡Average for 35 roads.

## Statistical Tables.

Recapitulation of operating expenses, year ending June 30, 1900, apportioned between passenger and freight traffic.

NAME OF COMPANY.	MAINTENANCE OF WAYS AND STRUCTURES.		MAINTENANCE OF EQUIPMENT.	
	Wisconsin.	Whole line.	Wisconsin.	Whole line.
1 Abbotsford & Northeastern	\$5,774 87	\$5,774 87	\$2,011 91	\$2,011 91
2 Ahnapee & Western	14,717 98	14,717 98	2,158 13	2,158 13
3 Big Falls R'y Co.				
4 Bayfield Harb. & G. W.				
5 Bayfield Transfer R'y	1,732 00	1,732 00	527 40	527 40
6 Chicago, Mil. & St. P.	2,689,759 36	9,053,380 57	1,344,072 01	4,523,971 75
7 Chicago & Northwestern	1,769,513 59	5,665,326 81	1,350,818 25	4,324,819 46
8 Chicago, St. P., M. & O.	916,568 89	2,045,456 12	406,695 13	907,599 03
9 Chicago, Burlington & Nor.	*222,005 75	6,529,581 05	*149,951 26	4,410,331 25
10 Chicago, L. Shore & East.	19,436 85	217,677 77	5,528 37	344,824 13
11 Chicago & Lake Superior	1,104 12	1,104 12	88 45	88 45
12 Chicago, Madison & North.	61,387 73	410,441 82	13,646 86	130,855 56
13 Chippewa River & Menom.	4,972 90	4,972 90	3,672 48	3,672 48
14 Drummond & Southwest.	5,363 59	5,363 59	2,846 20	2,846 20
15 Duluth, So. Shore & Atl.	50,179 38	384,772 00	27,388 42	210,012 93
16 Duluth Sup. & Western	60,179 75	60,179 75	13,955 42	13,955 42
17 Dunbar & Wausaukee				
18 Eastern R'y Co. of Minn.	57,266 64	357,893 81	42,790 71	249,174 94
19 Fairchild & North East.	3,147 15	3,147 15	1,208 44	1,208 44
20 Green Bay & Western	158,913 95	158,913 95	61,487 25	61,487 25
21 Hazelhurst & South East.	1,128 28	1,128 28	3,126 88	3,126 88
22 Iola & Northern	904 29	904 29	234 97	234 97
23 Glenwood & Northeastern.	948 00	948 00	1,430 71	1,430 71
24 Kewaunee, Gr. Bay & W.	28,307 84	28,307 84	7,538 85	7,538 85
25 Mattoon R'y Co.				
26 Marshfield & So. Eastern	5,907 41	5,907 41	401 53	401 53
27 Marinette, Tom. & Western	14,452 00	14,452 00	2,687 01	2,687 01
28 Minnesota & Wisconsin	4,915 29	4,915 29	2,871 37	2,871 37
29 M., St. P. & Sault St. M.	149,160 82	537,306 80	141,202 62	438,646 73
30 Northern Pacific	66,415 03	4,874,086 55	27,226 23	2,232,399 63
31 Northwestern Coal R'y Co.	1,712 95	1,712 95	850 81	850 81
32 Winona Bridge R'y Co.	*936 60	1,800 12		
33 Wisconsin & Michigan	9,985 55	17,959 64	10,256 59	18,447 12
34 Whitcomb & Morris	1,450 00	1,450 00	725 28	725 28
35 Wisconsin Central R'y Co.	646,669 56	766,684 53	412,999 37	492,259 53
36 Wisconsin Western	11,349 67	11,349 67	5,365 92	5,365 92
37 Hawthorne, Neb. & Sup.	2,248 23	2,248 23	2,286 88	2,286 88
38 St. Paul & Duluth	3,680 73	325,728 21	2,343 57	207,395 91
Totals	\$6,992,196 75	\$31,517,362 92	\$4,050,399 23	\$18,606,213 96

\*Proportionate.

Statistical Tables.

Recapitulation of operating expenses, year ending June 30, 1900, apportioned between passenger and freight traffic.

CONDUCTING TRANSPORTATION:		GENERAL EXPENSES.		TOTAL.		No.
Wisconsin.	Whole line.	Wisconsin.	Whole line.	Wisconsin.	Whole line.	
\$4,772 98	\$4,772 98	\$1,050 47	\$1,650 47	\$13,610 23	\$13,610 23	1
10,545 35	10,545 35	1,607 55	1,607 55	29,029 01	29,029 01	2
				9,131 75	9,131 75	3
						4
5,499 84	5,499 84	2,417 58	2,417 58	10,176 82	10,176 82	5
3,566,070 05	12,002,928 48	470,175 13	1,582,548 37	8,070,076 55	27,162,829 17	6
4,553,838 67	14,579,703 98	567,937 50	1,818,325 42	8,242,108 01	26,388,175 67	7
1,312,398 28	2,880,532 90	261,143 40	582,779 29	2,896,805 70	6,416,367 34	8
394,183 04	11,593,619 01	*31,975 30	940,450 27	799,239 94	†23,473,981 58	9
29,845 33	744,678 88	2,354 37	25,647 69	57,164 92	1,332,828 47	10
3,334 23	3,334 23	51 64	51 64	4,578 44	4,578 44	11
59,709 39	478,967 59	5,479 80	39,224 74	140,223 78	1,059,489 71	12
17,233 21	17,233 21	2,509 01	2,509 01	28,387 60	28,387 60	13
4,531 61	4,531 61	437 42	437 42	13,178 82	13,178 82	14
105,303 10	807,458 62	33,549 58	154,999 07	216,420 48	1,557,243 47	15
53,812 40	53,812 40	7,406 04	7,406 04	135,353 61	135,353 61	16
				5,579 53	5,579 53	17
248,269 45	928,554 22	14,837 01	97,425 67	363,163 81	1,633,048 64	18
8,618 75	8,618 75	1,625 75	1,625 75	14,600 09	14,600 09	19
134,782 63	134,782 63	29,743 61	29,743 61	384,927 44	384,927 44	20
8,528 81	8,528 81	128 56	128 56	12,912 53	12,912 53	21
3,764 80	3,764 80	143 44	143 44	5,047 50	5,047 50	22
9,598 51	9,598 51	3,975 77	3,975 77	15,952 99	15,952 99	23
22,803 51	22,803 51	5,447 97	5,447 97	64,098 17	164,098 17	24
				11,135 75	11,135 75	25
10,791 63	10,791 63	4,208 30	4,208 30	21,208 87	21,308 87	26
16,294 82	15,294 82	4,461 81	4,461 81	37,895 64	37,895 64	27
13,600 81	13,600 81	4,967 40	4,967 40	26,354 87	26,354 87	28
302,066 27	1,251,626 17	63,651 14	456,162 23	656,080 85	2,683,741 93	29
132,288 97	6,494,209 40	23,056 45	773,651 68	248,986 68	14,374,347 26	30
12,349 73	12,349 73	5,466 37	5,466 37	20,379 86	20,379 86	31
*1,013 94	1,949 90	*513 60	987 70	*2,463 61	4,737 72	32
20,604 14	37,057 82	17,981 25	27,383 46	58,827 53	100,848 04	33
1,533 00	1,533 00	200 00	200 00	3,908 28	3,908 28	34
1,638,275 49	1,952,632 74	383,229 91	707,493 09	3,061,174 23	3,919,119 89	35
9,967 48	9,967 48	5,345 29	5,345 29	32,028 72	32,028 72	36
7,453 02	7,453 02	47 23	47 23	12,035 36	12,035 36	37
6,882 27	639,514 17	1,031 41	91,274 93	13,937 98	1,263,913 22	38
\$12,370,565 53	\$54,753,301 00	\$1,958 157 06	\$7,379,594 82	\$25,582,859 63	\$158,283,283 99	

\*Proportionate.



*Statistical Tables.*

Rentals paid according to the report of June 30, 1900. A. Rentals paid for lease of roads.

NAME OF COMPANY.	WISCONSIN.	
	Cash.	Total.
Chicago & Northwetsern .....	\$8,513 74	\$8,513 74
Chicago, Burlington & Northern .....	*9,765 82	9,765 82
Duluth, Superior & Western .....	3,216 00	3,216 00
Eastern Railway Co. of Minnesota .....	4,807 74	4,807 74
Northern Pacific .....		
St. Paul & Duluth .....		
	\$26,303 30	\$16,537 48
		\$9,765 82
		\$26,303 30

\*Proportionate.

Rentals paid according to the report of June 30, 1900. A. Rentals paid for lease of roads.

NAME OF COMPANY.	WHOLE LINE.			
	Interest on bonds guaranteed.	Interest on stocks guaranteed.	Cash.	Total.
Chicago & Northwestern .....			\$27,257 85	\$27,257 85
Chicago, Burlington & North. ....			287,230 27	287,230 27
Duluth, Superior & Western .....			3,216 00	3,216 00
Eastern Railway Co. of Minn. ....			89,077 62	89,077 62
Northern Pacific .....	61,520 00		51,331 86	112,851 86
St. Paul & Duluth .....			28,684 53	28,684 53
	\$61,520 00		\$486,798 13	\$261,087 86
			61,520 00	287,230 27
			\$548,318 17	\$548,318 17

## Statistical Tables.

Rentals paid according to report of June 30, 1900. B. Rentals paid for lease of other property.

NAME OF COMPANY.	WISCONSIN.			
	Tracks.	Yards.	Terminals.	Total.
Chicago, Milw. & St. Paul.....				\$104,080 59
Chicago & Northwestern .....	\$6,120 68	\$3,748 09	\$19,179 45	\$29,048 22
Chi., St. P., Minn. & Omaha..	*24,986 06		*20,734 77	*45,720 73
Chicago, Burlington & North'n ..	8,932 01			*8,932 01
Chi., Lake Shore & Eastern..				
Chicago, Madison & Northern ..				
Duluth, So. Shore & Atlantic ..	17,531 20		1,883 81	19,415 01
Eastern Ry. Co. of Minnesota ..	17,005 67		3,231 57	20,237 24
Green Bay & Western .....	1,200 00			1,200 00
Minnesota & Wisconsin .....			69 27	69 27
Minn., St. Paul & Ashland....				
Minn., St. P. & S't Ste. Marie ..				
Northern Pacific .....	14,707 34			14,707 34
Wisconsin & Michigan .....	7,852 02			7,852 02
Wisconsin Central Ry. Co. ....	51,426 91	375 00	26,384 97	78,186 88
St. Paul & Duluth .....			187 80	187 80
	\$149,761 89	\$4,123 09	\$71,671 64	\$329,637 11

Proportionate.

Rentals paid according to report of June 30, 1900. B. Rentals paid for lease of other property--Continued.

NAME OF COMPANY.	WHOLE LINE.			
	Tracks.	Yards.	Terminals.	Total.
Chicago, Milwaukee & St. P. ....				\$350,321 75
Chicago & Northwestern .....	\$19,596 16	\$12,000 00	\$61,405 49	93,001 65
Chi., St. P., Minn. & Omaha..	62,937 20		52,203 47	115,140 67
Chi., Burlington & Northern ..			262,706 25	262,706 25
Chi., Lake Shore & Eastern..	198,320 58			198,320 58
Chicago, Madison & Northern ..		6,061 90		6,061 90
Duluth, So. Shore & Atlantic ..	32,350 00	650 00	13,615 22	46,615 22
Eastern Ry. Co. of Minnesota ..	54,447 38		48,463 85	102,911 23
Green Bay & Western .....		3,464 94		3,464 94
Minnesota & Wisconsin .....			69 27	69 27
Minn., St. Paul & Ashland....				
Minn., St. P. & S't Ste. Marie ..	38,563 08		90,595 86	129,158 94
Northern Pacific .....	9,165 43			165,502 15
Wisconsin & Michigan .....	170,646 58	24,012 00	149,249 63	343,908 21
Wisconsin Central Ry. Co. ....	13,457 88		33,624 73	47,082 61
St. Paul & Duluth .....				
	\$599,484 29	\$26,188 84	\$711,933 77	\$1,873,426 80

## Statistical Tables.

Employes and salaries, year ending June 30, 1900.

NAME OF COMPANY.	GENERAL OFFICERS.			OTHER OFFICERS AND GENERAL OFFICERS' CLERKS.		
	No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.
1 Abbotsford & Northeast'n	4	.....	.....	2	\$4 00	\$720 00
2 Ahnapee & Western.....	2	\$4 00	\$1,200 00	.....	.....	.....
Bayfield Har. & Gt. W. ]	.....	.....	.....	.....	.....	.....
3 Bayfield Transfer Ry....	1	3 06	1,116 65	1	1 80	404 50
4 Chi., Milwaukee & St. P.	9	16 49	132,590 30	110	2 36	69,351 59
5 Chicago & Northwestern..	3	10 65	9,999 96	18	3 82	21,522 91
6 C., St. P., Minn. & Omaha	3	9 13	9,999 96	5	2 79	5,083 87
7 Chi., Burl'gton & North'n	3	10 59	11,592 00	6	2 94	5,520 00
8 Chi., Lake Shore & East'n	.....	2 23	699 96	1	.....	.....
9 Chicago & Lake Superior	6	.....	.....	.....	.....	.....
10 Chi., Madison & North'n	.....	.....	.....	.....	.....	.....
11 Chip. R. & Menomonic..	2	3 13	1,700 00	1	1 53	453 72
12 Drummond & S. Western	5	.....	.....	1	64	200 00
13 Dul., Superior & Western	1	3 11	2,113 31	2	2 42	883 05
15 Dunbar & Wausaukee....	.....	.....	.....	.....	.....	.....
16 Eastern Ry. Co. of Minn.	.....	7 74	5,257 22	4	2 69	925 27
17 Fairchild & North East'n	4	.....	.....	1	.....	.....
18 Green Bay & Western ...	5	5 19	11,400 00	10	2 32	6,515 67
19 Hazelhurst & So. Eastern	5	.....	.....	.....	.....	.....
20 Iola & Northern .....	4	.....	.....	.....	.....	.....
21 Kew'nee, Green B. & W.	5	2 18	4,300 00	2	1 80	577 00
22 Mattoon Ry. Co. ....	.....	.....	.....	.....	.....	.....
23 Marshfield & So. Eastern	2	4 57	2,850 00	.....	.....	.....
24 Marinette, Tomah'k & W.	1	4 26	1,324 75	2	1 15	472 65
25 Minnesota & Wisconsin..	2	2 88	1,800 00	1	3 83	1,200 00
26 M., St. P., & S't Ste. M.	2	4 81	23,211 71	40	2 08	20,458 64
27 Northern Pacific .....	.....	.....	.....	.....	.....	.....
28 Northwest'n Coal Ry. Co.	3	7 70	2,350 03	4	2 83	1,413 '41
29 Winona Bridge Ry. Co...	1	81	300 00	1	1 15	420 00
30 Whitcomb & Morris.....	.....	.....	200 00	.....	.....	.....
31 Wis. Central Ry. Co. ....	23	9 19	131,521 52	301	2 16	212,496 34
32 Wisconsin Western .....	1	4 13	773 08	3	1 91	1,073 08
33 St. Paul & Duluth.....	11	11 29	508 13	59	2 41	588 61
	108	.....	\$356,808 58	575	.....	\$350,280 31

Statistical Tables.

Employees and salaries, year ending June 30, 1900—Continued.

STATION AGENTS.			OTHER STATION MEN.			ENGINE MEN.			No.
No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	
1	\$2 13	\$660 00				1	\$2 88	\$900 00	1
3	1 41	1,324 46	1	\$0 93	\$290 06	1	4 34	1,358 69	2
						2	2 71	1,220 00	3
291	1 74	158,031 22	814	1 53	390,711 87	384	3 48	393,964 23	4
240	2 09	156,055 18	679	1 54	337,056 33	458	3 57	533,029 20	5
67	2 24	47,079 42	83	1 74	45,322 84	108	4 14	139,856 12	6
31	1 60	18,060 00	24	1 63	12,264 00	32	3 74	43,704 00	7
1	2 47	900 00	2	1 30	582 00	6	2 58	4,769 07	8
2	1 02	480 00				1	1 92	600 00	9
15	1 53	8,375 42	2	1 23	900 00	6	3 77	6,622 04	10
						2	2 74	2,023 10	11
						2	2 63	836 12	12
9	2 32	6,076 40	9	1 71	5,028 10	7	3 61	7,909 51	13
1	4 38	1,600 20	36	1 97	25,710 10				14
						2	2 78	825 00	15
6	2 30	3,911 38	255	1 86	28,389 04	13	3 85	13,122 05	16
2						3	2 25		17
31	1 54	14,828 60	13	1 22	4,905 33	16	3 60	18,043 50	18
2	2 10	545 04				2	2 49	1,718 99	19
1	2 12	660 00	1	1 10	31 20	1	2 91	907 18	20
3	1 60	1,620 06	3	1 20	1,334 50	3	3 50	2,560 50	21
						2			22
5	1 43	2,039 21				2	3 47	1,280 38	23
1	1 50	540 00	2	1 25	912 50	4	2 30	2,829 00	24
1	1 92	600 00	3	1 61	571 02	2	3 00	1,697 26	25
34	1 50	18,658 05	8	1 28	3,743 92	34	3 81	47,287 11	26
5	2 62	4,781 83	15	1 70	9,103 34	8	4 11	12,500 00	27
1	2 72	795 00	2	1 89	916 73	1	3 46	1,498 21	28
						2	1 96	950 00	29
						1		720 00	30
102	1 70	64,370 91	155	1 70	75,929 78	165	3 55	190,127 79	31
11	1 22	2,501 80				2	3 50	675 50	32
1	2 25	820 80				2	1 77	1,157 23	33
2	2 91	2,128 88	3	2 14	2,340 00	1	2 81	720 36	34
869		\$517,441 80	2,110		\$946,042 66	1,276		\$1,435,422 08	.....

## Statistical Tables.

Employees and salaries, year ending June 30, 1900—Wisconsin—Continued.

NAME OF COMPANY.	FIREMEN.			CONDUCTORS.		
	No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.
1 Abbotsford & Northeast'n	1	\$1 92	\$605 49	1	\$2 45	\$765 40
2 Ahnapee & Western	1	1 80	564 41			
3 Bayfield Har. & G. W. ] Bayfield Transfer Ry....	2	1 67	711 42	2	1 93	832 72
4 Chi., Milwaukee & St. P.	384	2 30	260,828 76	258	3 33	269,149 93
5 Chicago & North-western.	507	2 21	362,762 41	280	3 43	312,602 79
6 C., St. P., Minn. & Omaha	108	2 56	86,559 97	76	3 60	85,750 93
7 Chi., Burlington & North'n	32	2 20	25,728 00	32	3 14	36,672 00
8 Chi., Lake Shore & East'n	4	1 86	2,881 38	3	2 69	2,749 30
9 Chicago & Lake Superior				1	1 53	480 00
10 Chi., Madison & Northern	7	2 21	3,880 76	6	3 55	5,928 69
11 Chip. R. & Menomonee..	2	1 17	991 65			
12 Drummond & So. West'n	2	1 52	449 40			
13 Dul., So. Shore & Atlantic	7	2 20	4,820 20	7	3 03	6,638 73
14 Dunbar & Wausauke	1	1 96	588 00	1	2 00	600 00
15 Eastern Ry. Co. of Minn.	14	2 26	7,612 47	11	3 23	7,864 82
16 Fairchild & North East'n	3	1 70		1	3 66	
17 Green Bay & Western....	17	2 15	11,837 69	12	2 60	9,983 40
18 Hazelhurst & So. East'n	2	1 74	1,263 18	1	2 50	791 87
19 Iola & Northern	1	1 20	374 50			
20 Kew'nee, Green B. & W.	3	2 00	1,262 29	2	2 50	1,560 00
21 Mattoon Ry. Co.	2			1		
22 Marshfield & So. Eastern	2	1 98	690 50	2	2 84	956 07
23 Marinette, Tomah'k & W.	4	1 70	2,091 00	3	2 17	2,061 50
24 Minnesota & Wisconsin..	2	1 65	951 30	1	3 44	1,080 00
25 M., St. P. & S't Ste. M.	34	2 02	18,725 23	22	3 37	27,060 62
26 Northern Pacific	8	2 30	7,003 84	8	3 26	9,680 74
27 Northwest'n Coal Ry. Co.	2	1 80	1,320 51			
28 Whitcomb & Morris	1		540 00			
29 Wis. Central Ry. Co.	167	2 19	114,060 85	104	3 27	108,495 61
30 Wisconsin Western	4	2 11	407 53	2	2 88	580 50
31 Hawthorne, Neb. & Sup.	2	1 51	609 99	1	1 75	563 00
32 St. Paul & Duluth	1	2 19	414 03	1	3 33	406 43
	1,327		\$920,526 76	829		\$893,225 05

Statistical Tables.

Emploves and salaries, year ending June 30, 1900—Wisconsin—Continued.

OTHER TRAINMEN.			MACHINISTS.			CARPENTERS.			No.
No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	No.	Daily compensation.	Total yearly compensation.	
1	\$1 90	\$624 64					\$1 69	\$223 58	1
1	1 61	504 94	1	\$0 95	\$166 59	2	1 56	286 06	2
									3
520	1 97	320,371 39	94	2 40	66,226 42	204	1 88	108,644 13	4
558	2 01	365,974 17	174	2 04	114,172 56	255	2 11	180,537 53	5
180	2 13	120,064 44	79	1 82	44,970 65	226	1 83	129,221 78	6
48	1 81	31,632 00	33	2 09	21,540 00	39	1 94	23,640 00	7
						3	2 28	2,568 40	8
									9
11	2 15	5,905 54				43	2 27	12,069 41	10
3	1 64	1,306 08	2	2 78	1,044 26	1	2 06	504 21	11
4	1 56	646 33	1	3 29	966 13	1	1 51	283 59	12
17	1 50	10,109 90				8	2 33	5,505 65	13
1	1 72	516 00							14
25	2 10	9,715 36	35	2 33	21,533 62	47	2 32	33,730 39	15
1	1 69		1	3 83					16
18	1 65	9,792 67	14	2 55	12,020 17	13	1 90	7,806 51	17
1	1 79	677 23							18
1	1 61	501 92							19
4	1 50	1,615 23							20
2									21
3	1 72	1,134 98	2	1 32	500 16				22
						3	2 04	1,815 60	23
3	1 64	1,002 50							24
67	1 52	37,055 85				19	1 92	11,226 10	25
16	2 03	11,466 48				4	2 35	2,597 00	26
									27
223	1 99	136,882 18	85	1 97	59,358 40	149	2 01	99,761 42	28
9	1 92	936 77	1	2 71	511 41	13	2 00	1,678 94	29
2	1 57	477 69							30
2	1 76	551 77	1	2 44	329 06	1	2 51	443 47	31
									32
1,721		\$1,069,466 06	523		\$343,339 43	1,034		\$622,543 77	

## Statistical Tables.

Employees and salaries, year ending June 30, 1900—Wisconsin—Continued.

NAME OF COMPANY.	OTHER SHOPMEN.			SECTION FOREMEN.		
	No.	Daily compensation.	Yearly compensation.	No.	Daily compensation.	Yearly compensation.
1 Abbotsford & Northeast'n				1	\$1 70	\$524 46
2 Ahnapee & Western				4	1 39	1,732 24
3 Bayfield Har. & G. W.						
3 Bayfield Transfer Ry..	1	\$1 77	\$72 50	1	1 85	575 40
4 Chi., Milwaukee & St. P.	551	1 80	292,797 72	278	1 73	151,259 42
5 Chicago & Northwestern	592	1 70	518,850 74	282	1 75	155,601 69
6 C., St. P., Minn. & Omaha	95	1 72	51,077 78	108	1 80	60,720 91
7 Chi., Burlington & North'n	161	1 54	77,844 00	37	1 50	20,280 00
8 Chi., Lake Shore & East'n	2	2 28	1,650 00	1	1 97	720 00
9 Chicago & Lake Superior						
10 Chi., Madison & Northern				16	1 71	6,408 55
11 Chip. R. & Menomonie..	1	2 23	386 73	1	1 75	525 00
12 Drummond & So. Western	1	1 90	643 46	1	1 69	369 27
13 Dul., So. Shore & Atlantic	7	1 62	3,546 17	20	1 64	11,969 05
14 Dul., Superior & Western				1	1 62	581 95
15 Eastern Ry. Co. of Minn.	285	1 64	107,668 07	9	1 50	5,089 00
16 Fairchild & North East'n				2	1 65	
17 Green Bay & Western....	39	1 50	20,002 52	37	1 50	17,760 00
18 Hazelhurst & So. Eastern				1	1 69	398 45
19 Iola & Northern				1	1 10	343 20
20 Kew'nee, Green Bay & W.	1	1 50	480 00	6	1 50	2,700 00
21 Mattoon Ry. Co.				1		
22 Marshfield & So. Eastern				5	1 57	2,515 53
23 Marinette, Tomah'k & W.				4	1 84	2,213 52
24 Minnesota & Wisconsin				3	1 60	1,379 64
25 M., St. P. & S't Ste. M.	1	1 19	365 14	41	1 49	22,334 97
26 Northern Pacific	2	2 12	1,800 64	16	1 53	8,959 90
27 Northwest'n Coal Ry. Co.				1	2 00	504 26
28 Winona Bridge Ry. Co.						
29 Whitcomb & Morris				1		325 00
30 Wis. Central Ry. Co.	168	1 99	108,202 71	128	1 57	73,071 32
31 Wisconsin Western	2	1 72	498 37	7	1 71	2,008 02
32 Hawthorne, Neb. & Sup.	2	1 80	1,000 00	1	1 75	525 00
33 St. Paul & Duluth	2	1 96	896 92	2	1 58	1,152 00
	1,913		\$987,783 47	1,017		\$552,547 55

Statistical Tables.

Emploves and salaries, year ending June 30, 1900—Wisconsin—Continued.

OTHER TRACKMEN.			SWITCHMEN, FLAGMEN AND WATCHMEN.			TELEGRAPH OPERATORS AND DISPATCHERS.			No.
No.	Daily compensation.	Yearly compensation.	No.	Daily compensation.	Yearly compensation.	No.	Daily compensation.	Yearly compensation.	
10	\$1 25	\$2,278 80							1
10	1 31	3,593 76	1	\$1 18	\$429 25				2
10	1 58	3,573 88	1	1 25	456 99				3
946	1 23	364,903 10	399	1 98	247,149 35	268	\$2 09	\$175,575 20	4
2,140	1 34	669,225 14	374	2 16	277,511 09	211	1 87	137,305 46	5
576	1 43	257,666 61	47	2 34	34,466 33	76	1 99	47,310 16	6
130	1 15	46,872 00	23	1 74	14,640 60	18	2 52	13,260 00	7
16	1 40	7,715 33	10	2 21	8,746 27				8
3	1 25	889 74	1	1 11	396 75				9
47	1 25	11,725 75				2	1 64	1,200 00	10
14	1 56	4,378 96	3	1 19	1,229 02				11
14	1 40	4,306 55	2	1 28	313 52				12
50	1 44	22,124 05	1	1 28	106 50	12	1 57	5,044 90	13
13	1 91	8,907 55	8	2 53	6,929 05	2	82	599 95	14
328	1 64	52,193 78	49	2 27	25,949 69	17	2 30	8,705 47	15
11	1 50								16
94	1 10	26,121 80	15	1 60	6,896 94	4	2 00	2,988 50	17
2	1 48	660 12	1	1 73	229 44				18
14	1 10	5,177 31	1	1 50	458 25	1	2 00	600 00	19
5									20
12	1 22	2,829 15							21
16	1 60	5,360 00	2	1 30	949 00				22
21	1 48	5,993 78	2	94	722 50				23
209	1 17	75,436 66	4	2 67	3,383 94	20	1 68	12,243 48	24
86	1 54	41,204 29	7	2 71	6,729 61	8	1 70	5,113 90	25
2	1 75	905 48	3	2 08	5,454 42				26
			2	1 45	709 33				27
1		325 00							28
727	1 33	311,899 56	113	2 06	78,621 23	87	1 79	55,057 10	29
50	1 25	3,757 71	2	1 33	289 26				30
6	1 65	1,419 00							31
6	1 37	2,370 00	1	1 16	60 00	1	1 48	540 00	32
5,569		\$1,943,814 86	1,072		\$722,787 73	727		\$465,544 12	33



## Statistical Tables.

Employes and salaries, year ending June 30, 1900—Wisconsin.

NAME OF COMPANY.	EMPLOYES ACCOUNT, FLOATING EQUIPMENT.			ALL OTHER EMPLOYES AND LABORERS.		
	No.	Daily compensa- tion	Yearly compensa- tion.	No.	Daily compensa- tion.	Yearly compensa- tion.
1 Abbotsford & Northeast'n						
2 Ahnapee & Western						
3 Bayfield Har. & G. W. } Bayfield Transfer Ry... }						
4 Chicago, Mil. & St. Paul				1,714	2 13	\$1,204,306 71
5 Chicago & Northwestern				636	1 85	396,926 34
6 C. St. P., Minn. & Omaha				505	1 82	288,417 68
7 Chi., Burling'ton & North'n				7	2 42	5,292 00
8 Chi., Lake Shore & East'n						
9 Chicago & Lake Superior						
10 Chi., Madison & North'n				28	2 47	11,841 50
11 Chip. R. & Menomonie...	6	\$1 60	\$2,600 00	15	1 97	8,222 27
12 Drummond & So. Western						
13 Dul., So. Shore & Atlantic				4	1 44	1,968 45
14 Duluth, Sup. & Western				24	2 04	17,540 06
15 Dunbar & Wausaukee...						
16 Eastern Ry. Co. of Minn.				217	1 99	88,910 27
17 Fairchild & Northeastern						
18 Green Bay & Western	17	1 23	6,772 07	11	1 12	3,865 01
19 Hazelhurst & So. Eastern				1	1 67	406 65
20 Iola & Northern						
21 Kew'nee, Green B. & W.	6	1 25	2,240 10	4	1 25	1,432 83
22 Mattoon Ry. Co.						7,070 05
23 Marshfield & So. Eastern						
24 Marinette, Tomah'k & W.						
25 Minnesota & Western				1	1 47	539 75
26 M., St. P. & S't Ste. M.				78	1 40	33,554 14
27 Northern Pacific				15	1 97	9,193 34
28 Northwest'n Coal Ry. Co.						
29 Winona Bridge Ry. Co...						
30 Whitcomb & Morris						
31 Wisconsin Cent. Ry. Co.				691	1 69	294,535 63
32 Wisconsin Western				63	1 52	1,516 56
33 Hawthorne, Neb. & Sup.				1	1 65	594 00
34 St. Paul & Duluth				2	1 83	1,067 88
	29	\$4 08	\$11,612 17	4,017	\$33 70	\$2,377,201 11

*Statistical Tables.*

Emploees and salaries, year ending June 30, 1900, Wisconsin--Continued.

DISTRIBUTION OF FOREGOING EMPLOYEES.				TOTAL EXCLUDING GENERAL OFFICERS.			No
General administration. No.	Maintenance of ways and structures. No.	Maintenance of equipment. No.	Conducting transportation. No.	No.	Daily compensation.	Yearly compensation.	
6		11	4	17	\$1 76	\$6,536 97	1
2	16	1	9	26	1 55	10,015 86	2
2	11	1	7	20	1 74	7,847 11	3
119	2,408	1,204	3,493	7,215	2 01	4,534,314 03	4
3	3,079	428	3,897	7,407	1 96	4,394,133 50	5
3	627	508	1,204	2,339	2 04	1,513,505 63	6
9	208	196	243	653	1 82	396,948 00	7
1	17	5	26	49	1 97	33,981 71	8
	3		5	8	1 32	2,846 49	9
1	127	3	52	183	1 96	74,857 66	10
3	15	4	31	51	1 78	23,665 00	11
6	15	3	10	29	1 58	9,014 37	12
	78	7	73	158	1 84	90,847 61	13
3	14		71	87	2 03	62,831 90	14
			5	5		2,539 00	15
4	384	320	607	1,315	1 96	420,578 40	16
5	12	1	13	25			17
6	161	64	135	361	1 65	181,340 38	18
5	3		10	13	1 95	6,690 27	19
4	1		5	6	1 50	2,818 00	20
6	26	5	21	53	1 50	24,218 01	21
	1	5	7	13		7,070 05	22
2	17	2	14	33	1 60	11,945 73	23
3	20	3	16	41	1 74	19,244 77	24
3	24		15	40	1 62	15,737 75	25
33	275	27	278	611	1 73	349,530 39	26
1	121	3	73	198	1 95	130,194 91	27
7	3	1	8	16	2 19	12,808 02	28
1			5	5	1 55	2,079 33	29
	1	1	2	4	1 62	1,910 00	30
324	1,747	201	1,116	3,365	1 91	2,007,419 06	31
4	127	9	30	169	1 58	16,435 45	32
	7	2	9	18	1 73	7,166 71	33
11	6	10	69	85	1 89	14,007 41	34
577	9,554	3,025	11,563	24,618	\$55 13	\$14,386,078 53	...

*Statistical Tables.*

Passenger train mileage, Wisconsin, 1900—Passenger traffic.

Name of Company.	Number of passengers carried earning revenue.	Number of passengers carried one mile.	Average distance carried.	Total passenger revenue.
1 Abbotsford & Northeastern	2,617	39,000	14.90	\$1,365 04
2 Ahnapee & Western .....	23,421	796,314	34	16,816 38
3 Big Falls Ry. Co. ....				
4 Bayfield Har. & G. W. } Bayfield Transfer Ry. ... }	23,704	91,497	3.86	2,965 82
5 Chi., Milwaukee & St. P.				2,510,654 25
6 Chicago & Northwestern..	5,228,408	143,408,514	274.29	2,871,763 21
7 C., St. P., Minn. & Omaha	822,635	41,167,456	50.04	986,783 91
8 Chi., Burlington & North'n	*3,110	*125,837	*3.75	*273,662 27
9 Chicago & Lake Superior..	9,274	27,892	3.00	1,216 20
10 Chi., Madison & Northern	84,316	1,666,306	19.76	35,865 26
11 Chippewa R. & Menomonic	845	12,675	15	506 59
12 Dul., So. Shore & Atlantic	92,828	4,484,099	48.31	96,329 83
13 Dunbar & Wausaukee.....				
14 Eastern Ry. Co. of Minn.	126,104	2,106,821	16.70	45,268 14
15 Fairchild & North Eastern	2,607	52,371	20.9	1,973 58
16 Green Bay & Western ....	186,297	4,059,883	21.79	96,397 80
17 Hazelhurst & South East'n	1,874	18,252	9.73	695 55
18 Iola & Northern .....	5,958	28,003	4.70	1,132 06
19 Kew'nee, Green Bay & W.	29,979	653,451	21.80	18,494 76
20 Mattoon Ry. Co. ....				
21 Marshfield & South East'n				
22 Marinette, Tomah'k & W.	15,496	116,220	7.50	4,759 65
23 Minnesota & Wisconsin...				3,233 70
24 M., St. P. & S't Ste. Marie	145,633	9,193,147	63.13	189,286 19
25 Northern Pacific .....	140,751	4,337,387	30.82	106,377 59
26 Winona Bridge Ry. Co.*...	11,312			2,827 90
27 Wisconsin & Michigan .....				
28 Wisconsin Cent. Ry. Co...	844,923	45,622,719	51.63	929,078 53
29 Wisconsin Western .....	9,121	193,565	21.22	4,997 23
30 Hawthorne, Neb. & Sup...	321	2,359	7.35	
31 St. Paul & Duluth .....	32,239	185,258	5.75	3,938 22
	7,843,873	258,389,026	503.06	\$8,206,389 66

\*Proportionate.

*Statistical Tables.*

Passenger train mileage, Wisconsin, 1900—Passenger traffic—Continued.

Average amount received from each passenger.	Average receipts per passenger per mile.	Estimated cost to carry each passenger one mile.	Total passenger earnings.	Passenger earnings per mile of road.	Passenger earnings per train mile.	No.
\$0.5216	\$0.035		\$2,178 58	\$143 71		1
.718	.02112		21,577 43	634 63	\$0.50689	2
			713 64			3
						4
.12512	.03241		3,125 70	317 01	.24199	5
			3,463,319 97	2,099 13	2.58284	6
.54926	.02003	\$0.02216	3,434,711 84	2,096 13	.95644	7
1.19954	.02397		1,169,196 14	1,888 51	.91264	8
.0858	*.00007		330,531 53	1,525 91	*.0348	9
.13114	.04371		1,424 98	474 99	.75877	10
.42537	.02152		48,395 83	530 02	.65621	11
.60	.04	.03418	506 59	15 35	.01299	12
1.03772	.02148		112,490 66	1,001 87	.80957	13
			1,045 20			14
.35897	.02149		51,906 07	1,360 58	.94786	15
.757	.0376	.0015	2,452 17	817 39		16
.51716	.02374		121,269 85	538 98	.4060	17
.37116	.03811	.02515	805 54	47 38	.03303	18
.19	.04037		1,371 76	291 86	.1550	19
.61692	.02830		22,511 32	613 39	.46377	20
			2,183 48			21
			7,021 95	212 78		22
.30715	.04095	.08151	5,273 79	158 37	.50050	23
			4,394 08	209 24		24
1.29975	.02059		254,742 05	938 55	.81775	25
.75579	.02453		121,285 62	1,388 18	1.61718	26
.13	.0124		2,851 20	2,745 60		27
			10,305 20			28
1.09960	.02130		1,141,071 15	1,411 17	.76318	29
.54788	.02582		6,097 48	118 85	.31412	30
			80 25	25	.034	31
.12215	.02126		4,958 71	360 63	.30942	
\$12.4667	\$0.8925	\$0.1645	\$10,349,799 76	\$21,940 46	\$13.83495	

\*Proportionate.

## Statistical Tables.

Passenger and freight and train mileage, Wisconsin, 1900 — Freight traffic.

Name of Company.	Number of tons carried of freight earning revenue.	Number of tons carried one mile.	Average distance haul of one ton.	Total freight revenue.
1 Abbotsford & Northeast.	37,119	502,647	13.54	\$11,408 44
2 Ahnapee & Western	31,766	1,080,044	34.	20,842 21
3 Bayfield Har. & G. W. ]	23,800	160,385	6.739	4,782 89
4 Bayfield Transfer R'y ]				
5 Chicago, Mil. & St. P.				9,606,872 37
6 Chicago & Northwestern	7,987,934	1,204,124,250	151.	10,073,630 43
7 Chicago, St. P., M. & O.	1,744,685	277,711,800	159.18	2,699,358 70
8 Chicago, Burlington & N.*	523,369	102,422,039.4	13.47	898,537 20
9 Chicago, L. Shore & E.	559,781			39,234 09
10 Chicago & L. Superior.	4,801	403	3.	2,096 21
11 Chicago, Madison & Nor.	113,290	3,316,541	29.27	57,579 39
12 Chippewa Riv. & Menom.	115,000	1,725,000	15.	32,713 67
13 Drummond & So. West.	47,171	471,710	10.	14,978 78
14 Duluth, S. S. & Atlantic	305,337	18,020,960	59.02	189,306 58
15 Duluth, Sup. & Western	1,235,817			308,954 20
16 Eastern R'y Co. of Minn.	4,356,261	80,799,142	18.55	512,283 38
17 Fairchild & Northeastern	73,333	728,386	9.9	32,160 49
18 Green Bay & Western.	362,012	37,215,837	102.80	362,351 23
19 Hazelhurst & South East.	109,638	1,011,425	9.22	18,694 48
20 Iola & Northern	9,721	45,689	4.70	3,665 05
21 Kewaunee, G. B. & West.	166,975	5,669,767	33.96	59,828 13
22 Marshfield & South East.				
23 Marinette, Tom. & West.	57,630	648,337	11½	29,532 79
24 Minnesota & Wisconsin.	116,801	5,562		41,822 02
25 M., St. P. & S. Ste. Marie	1,860,643	255,263,855	137.19	1,250,128 22
26 Northern Pacific	1,334,564	27,447,327	20.6	327,905 16
27 Northwestern C. R'y Co.	403,584	1,021,067	2.53	28,442 00
28 Winona Bridge R'y Co.*				8,553 47
29 Wisconsin Cent. R'y Co.	3,832,600	485,967,591	126.80	3,511,973 30
30 Wisconsin Western	22,202	7,983,177	35.96	19,397 05
31 Hawthorne, Neb. & Sup.	43,364	318,725	7.35	17,822 96
32 St. Paul & Duluth.	252,536	629,173	2.49	16,629 65
	25,731,734	2,504,304,839.	101.751	\$30,201,484 54

\*Proportionate.

*Statistical Tables.*

Passenger and freight and train mileage, Wisconsin, 1900 — Freight traffic.

Average amount received for each ton of freight.	Average receipts per ton per mile.	Estimated cost of carrying one ton one mile.	Total freight earnings.	Freight earnings per mile of road.	Freight earnings per train mile.	No.
\$0.30735	\$0.02270	\$0.02707	\$11,408 44	752.53	\$1.19837	1
.65612	.01930		20,842 21	.61301	.48962	2
.....	.....	.....	.....	.....	.....	3
.20096	.02982		4,830 57	489.32	.37397	4
.....	.....	.....	9,653,343 17	5,850.93	1.61032	5
1.26111	.00836	.00421	10,084,596 41	6,154.40	2.17063	6
1.54719	.00972		2,701,932 74	4,364.22	1.90770	7
.1271	.00029		899,713 85	142.57	.0583	8
.07009			39,234 09	2,263.94		9
.43662	.14554		2,096 21	698.74	.37206	10
.50825	.01736		57,579 39	630.59	.76298	11
.28447	.01896	.01620	32,713 67	991.32	.83881	12
.3175	.03175	.02772	14,978 78	689.63		13
.61999	.0105		190,148 01	1,693.52	1.31983	14
.25			308,954 20	50,154.90		15
.11760	.00634		513,158 87	13,451.08	4.92678	16
.439	.044	.011	32,160 49	1,072.05		17
1.009	.00974		362,836 35	1,612.61	1.54448	18
.17051	.01848	.01219	18,694 48	1,099.68	.76654	19
.37702	.08022		3,665 05	779.80	.41413	20
.35831	.01055		59,828 13	1,630.20	1.23255	21
.....	.....	.....	39,659 23	1,201.79		22
.51245	.04555	.04381	29,532 79	886.87	.92790	23
.....	.....	.....	41,822 02	1,991.52		24
.67188	.00490		1,252,509 01	4,614.65	1.79661	25
.24570	.01195		328,365 03	3,758.33	2.89597	26
.0747	.62786		28,442 00	11,241.90		27
.....	.....	.....	8,553 47	8,251.77		28
.9163	.00723		3,515,517 26	4,347.66	1.86870	29
.87366	.02430		19,397 05	378.11	.99944	30
.411	.559	.25	17,822 96	1,637.46	.0194	31
.06585	.02643		16,629 55	1,209.43	1.21280	32
12.82973	1.19085	.03945	.....	134,655.08	31.62849	

## Statistical Tables.

Passenger and freight and train mileage, Wisconsin, 1900—Passenger and freight.

Name of Company.	Passenger and freight revenue.	Passenger and freight revenue per mile of road.	Passenger and freight earnings.	Passenger and freight earnings per mile of road.
1 Abbotsford & Northeastern	\$12,773 48	\$842 58	\$13,587 02	\$896 24
2 Ahnapee & Western .....	37,658 59	1,107 61	42,419 64	1,247 64
3 Big Falls R'y Co. ....			10,390 91	
4 Bayfield Har. & Gt. West.				
4 Bayfield Transfer R'y ....	7,748 71	785 87	7,956 27	806 92
6 Chicago, Mil. & St. Paul..	12,117,526 62	7,344 49	13,116,663 14	7,950 07
7 Chicago & Northwestern ..	12,945,393 64	7,900 28	13,519,308 25	8,250 52
8 Chicago, St. P., M. & O. ...	3,686,142 61	5,953 94	3,871,123 88	6,252 73
9 Chicago, Burlington & N.	*1,172,199 52	*185 75	1,692,641 74	*199 88
10 Chicago, L. Shore & East.				
11 Chicago & Lake Superior..	3,312 41	1,104 14	3,521 19	1,173 73
12 Chicago, Madison & North.	93,444 65	1,023 38	105,975 22	1,160 61
13 Chippewa Riv. & Menom.	33,220 26	1,006 67	33,220 26	1,006 67
14 Drummond & So. Western			14,978 78	
15 Duluth, So. Shore & At...	285,636 41	2,543 97	302,638 67	2,695 39
16 Duluth, Sup. & Western...	308,954 20	50,154 90	308,954 20	50,154 90
17 Dunbar & Wausaukee			25,423 31	
18 Eastern R'y Co. of Minn..	557,551 52	14,614 72	565,064 94	14,811 66
19 Fairchild & North Eastern	34,612 66	1,153 75	34,612 66	1,153 75
20 Green Bay & Western ....	458,749 03	2,151 58	484,106 20	2,151 58
21 Hazelhurst & So. Eastern	19,390 03	1,140 59	19,500 02	1,147 06
22 Iola & Northern .....	4,797 11	1,020 70	5,036 81	1,071 66
23 Glenwood & Northeastern..			265 00	
24 Kewaunee, G. B. & West.	78,322 59	2,134 14	82,359 45	2,243 58
25 Mattoon R'y Co. ....			9,897 38	
26 Marshfield & South Eastern	46,681 18	1,414 58	46,681 18	
27 Marinette, Tom. & Western	34,292 44	1,029 80	34,806 58	1,045 24
28 Minnesota & Wisconsin ....	46,216 10	2,200 76	46,216 00	
29 M., St. P. & S. St. Marie..	1,439,414 41	5,303 27	1,507,251 06	5,553 20
30 Northern Pacific .....	434,282 75	4,970 62	449,650 65	5,146 51
31 Northwestern C. R'y Co. ...			28,442 00	
32 Winona bridge R'y Co.* ..			11,474 46	
33 Wisconsin & Michigan ....			60,491 64	
34 Whitcomb & Morris .....			3,348 99	
35 Wisconsin Cent. R'y Co. ...	4,441,051 83	5,492 27	4,656,588 41	5,758 83
36 Wisconsin Western .....	24,394 28	475 52	25,494 53	497 21
37 Holmes & Son .....				
38 Hawthorne, Neb. & Sup...	17,903 21	2,435 81	17,903 21	2,435 81
39 St. Paul & Duluth .....	20,567 87	1,495 84	21,588 36	1,570 06
	\$38,352,238 41	\$126,987 53	\$41,179,566 81	\$126,381 45

\*Proportionate.

Statistical Tables.

Passenger and freight and train mileage, Wisconsin, 1900—Passenger and freight.

Gross earnings from operation.	Gross earnings from operation per mile of road.	Expenses.	Expenses per mile of road.	Income from operation.	Income from operation per mile of road.	No.
\$13,731 47	\$905 77	\$13,610 23	\$897 77	\$121 24	\$8 00	1
42,419 64	1,247 64	29,029 01	853 79	13,390 63	393 84	2
10,390 91						3
7,956 27	806 92	10,176 82	1,032 13	†2,220 55	225 16	4
13,180,423 51	7,988 71	8,070,076 55	4,891 31	5,110,346 96	3,097 40	5
13,552,784 83	8,270 95	8,242,108 01	5,029 97	5,310,676 82	3,240 98	6
3,939,823 90	6,363 69	2,896,805 70	4,678 98	1,043,018 20	1,684 71	7
1,697,012 41	*204 53	*798,115 37	*126 47	598,772 47	2,683 38	8
87,018 09	5,021 24	57,164 92	3,298 61	29,853 17	1,722 63	9
3,521 19	1,173 72	4,578 44	1,526 15			10
106,050 22	1,161 43	140,223 78	1,535 69	†34,173 56	†374 26	11
33,220 26	1,006 67	28,387 60	860 23	4,832 66	146 44	12
14,978 78						13
303,046 24	2,699 02	216,420 48	1,927 51	86,625 76	771 51	14
332,151 17	53,920 64	135,353 61	21,972 98	196,797 56	31,947 66	15
25,423 31						16
591,241 05	15,497 79	363,163 81	9,519 36	228,077 24	5,978 43	17
34,612 66	1,153 75	14,600 09	486 67	19,862 57	662 09	18
484,106 20	2,151 58	384,927 44	1,710 79	99,178 76	440 79	19
19,500 02	1,147 06	12,912 53	759 56	6,587 49	387 50	20
5,040 63	1,072 47	5,047 50	1,073 94	6 87	1 47	21
265 00						22
82,339 45	2,243 58	64,098 17	1,746 54	18,307 90	497 04	23
10,107 93						24
46,681 18		21,308 87	645 72	25,372 31	768 85	25
35,323 41	1,060 76	37,895 64	1,138 01			26
46,216 10		26,354 87	1,254 99	4,980 30	237 15	27
1,511,697 39	5,569 58	656,080 85	2,417 21	855,616 54	3,152 37	28
493,554 19	5,649 01	248,986 68	2,849 80	244,567 51	2,799 21	29
28,442 00	11,241 89	20,379 86	8,055 28	8,062 14	3,186 61	30
11,474 46	*11,050 60	*2,463 60	*2,391 80	8,917 84	8,658 09	31
60,491 64						32
3,348 99						33
4,676,821 47	5,783 85	3,081,174 33	3,810 50	1,595,647 14	1,973 35	34
25,507 03	497 21	32,028 72	624 34	6,261 69	122 06	35
830 00						36
18,410 21	2,504 79	12,035 36	1,637 46	6,338 10	862 34	37
21,588 36	1,570 06	13,937 98	1,013 67	7,650 38	556 39	38
41,557,551 47	\$158,964 92	\$21,639,446 82	\$89,767 23	\$15,523,601 69	\$75,856 76	39

\*Proportionate.  
†Red figures.



*Statistical Tables.*

Passenger and freight and train mileage, Wisconsin, 1900—Train mileage.

Name of Company.	Miles run by passenger trains.	Miles run by freight trains,
1 Abbotsford & Northeastern .....		9,520
2 Ahnapee & Western .....		
3 Bayfield Harbor & Great Western .....		
4 Bayfield Transfer Ry. ....		
5 Chicago, Milwaukee & St. Paul .....	946,224	204,792
6 Chicago & Northwestern .....	3,502,676	4,375,456
7 Chicago, St. Paul, Minneapolis & Omaha .....	1,219,890	1,255,109
8 Chicago, Burlington & Northern* .....	327,641.61	498,914.94
9 Chicago, Lake Shore & Eastern .....		
10 Chicago & Lake Superior .....		
11 Chicago, Madison & Northern .....	73,750	75,466
12 Chippewa River & Menomonie .....		39,000
13 Duluth, South Shore & Atlantic .....	138,931	144,070
14 Eastern Railway Co. of Minnesota .....	51,069	100,454
15 Green Bay & Western .....	243,785	180,013
16 Hazelhurst & South Eastern .....		
17 Iola & Northern .....		
18 Kewaunee, Green Bay & Western .....		
19 Marinette, Tomahawk & Western .....		380
20 Minneapolis, St. Paul & Sault Ste. Marie .....	195,494	581,128
21 Northern Pacific .....	74,998	113,387
22 Wisconsin Central Ry. Co. ....	1,456,458	1,842,273
23 Wisconsin Western .....		
24 Hawthorne, Nebagamon & Superior .....		9,172
25 St. Paul & Duluth .....	5,047	2,730
	8,234,984	9,431,865

*Statistical Tables.*

Passenger and freight and train mileage, Wisconsin, 1900—Train mileage—Con.

Miles run by mixed trains.	Total mileage trains earning revenue.	Miles run by switching engines.	Miles run by construction and other trains.	Grand total train mileage.	No.
.....	9,520	.....	.....	9,520	1
42,568	42,568	.....	.....	42,568	2
.....	.....	.....	.....	.....	3
12,917	12,917	.....	.....	12,917	4
394,673	7,545,689	.....	.....	7,546,689	5
353,891	8,232,023	2,806,128	1,112,730	12,150,881	6
61,224	2,636,223	450,217	197,858	3,284,298	7
25,630.2	852,186.77	.....	.....	.....	8
.....	.....	143,490	.....	143,490	9
7,512	7,512	.....	.....	7,512	10
.....	149,216	10,164	6,171	165,551	11
.....	39,000	.....	.....	39,000	12
.....	283,021	.....	3,696	286,117	13
3,703	155,226	.....	26,209	181,435	14
54,912	478,710	68,725	12,628	560,063	15
24,388	24,388	.....	.....	24,388	16
8,850	8,850	.....	.....	8,850	17
45,540	48,540	.....	.....	48,540	18
41,930	45,730	5,160	5,400	56,290	19
116,022	892,644	44,952	24,059	961,635	20
.....	188,385	.....	9,017	197,402	21
38,690	3,337,721	567,624	503,782	4,409,127	22
19,403	19,408	.....	1,850	21,258	23
.....	9,172	.....	.....	9,172	24
10,982	18,759	11,850	.....	30,609	25
1,265,840	23,737,409	4,108,316	902,780	30,196,312	.....

*Statistical Tables.*

Passenger and freight train mileage, Wisconsin, 1900—Mileage of cars and average of loads.

Name of Company.	Mileage of loaded freight cars north or east.	Mileage of loaded freight cars south or west.	Mileage of empty freight cars north or east.	Mileage of empty freight cars south or west.
1 Abbotsford & Northeastern .....				
2 Alnapee & Western .....				
3 Bayfield Har. & G. W. ... ]				
4 Bayfield Transfer Ry. ... ]	12,917	25,834	12,917	12,917
5 Chi. Mil. & St. Paul* .....				
6 Chicago & Northwestern ..	43,138,101	44,628,893	18,844,567	16,695,396
7 C. St. P., Minn. & Omaha ..				
8 Chi., Burlington & North'n*	8,453,973.45		3,164,351.21	
9 Chi., Lake Shore & Eastern ..				
10 Chi., Madison & Northern ..	242,196	322,298	109,407	82,845
11 Chippewa R. & Menomonic ..	19,500			19,500
12 Dul., So. Shore & Atlantic ..	854,765	604,159	224,385	660,978
13 Eastern Ry. Co. of Minn. ..	1,167,703	1,061,442	272,673	1,123,587
14 Fairchild & North aEastern ..				
15 Green Bay & Western .....	1,199,866	1,277,193	254,401	389,120
16 Hazelhurst & South East'n ..	12,272	113,715	113,715	12,272
17 Iola & Northern .....				
18 Kew'nee, Green Bay & W. ..	123,816	144,863	46,055	24,516
19 Marinette, Tomah'k & W. ..	58,060	32,060	13,500	54,600
20 Minnesota & Wisconsin ..				
21 M., St. P. & S't St. Marie ..	8,437,698	8,028,862	1,146,115	2,222,037
22 Northern Pacific .....	1,103,238	762,610	357,922	682,951
23 Northwest'n Coal Ry. Co. ...				
24 Wisconsin Cent. Ry. Co. ...	17,915,757	18,247,055	7,089,881	6,061,759
25 Wisconsin Western .....	53,269	54,289	17,815	13,446
26 Hawthorne, Neb. & Sup. ...	28,620	15,157	16,530	26,285
27 St. Paul & Duluth .....	25,665	35,616	18,497	8,896
	82,847,416	75,354,046	31,702,711	28,091,105

\*Proportionate.

## Statistical Tables.

Passenger and freight train mileage, Wisconsin, 1900—Mileage of cars and average of loads—Continued.

Average number of freight cars in train.	Average number of loaded cars in train.	Average number of empty cars in train.	Average number of tons of freight in train.	Average number of tons of freight in each loaded train.	Mileage upon which based.	No.
					15.16	1
					34	2
6	4	2	6	1½	9.86	3
597.72	428.9	168.8	5,230.81	311.10	1,649.88	4
26.07	18.56	7.51	254.61	13.72	1,638.60	5
					619.11	6
						7
						8
					17.33	9
10.03	7.48	2.55	43.95	5.88	91.31	10
6	6	6	90	15	33	11
16	10	6	125.085	12.35	112.28	12
34.80	21.4	13.4	775.74	36.25	38.15	13
					30	14
13	10	3	158.42	15.20	225	15
10	5	5	41	8	17	16
					4.70	17
7	5	2	116.81	21.10	36.70	18
4.3	3.1	2.1	34.2	16	33.30	19
					21	20
23	24	5	366	15.5	271.42	21
25.64	16.4	9.18	242.07	14.71	87.37	22
					2.53	23
26.21	19.22	6.99	258.32	13.44	808.60	24
7.15	5.54	1.61	41.13	7.42	51.3	25
9.43	4.77	4.66	34.73	7.28	7.35	26
6.47	4.47	2.00	45.88	10.27	13.75	27
833.82	593.84	247.80	7,864.75	524.72	5,868.70	.....

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*Statistical Tables.*


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Freight traffic movement, Wisconsin, (company's material excluded).

NAME OF COMPANY.	PRODUCTS OF AGRICULTURE.			
	Grain.	Flour.	Other mill products.	Hay.
1 Ahnapee & Western .....	7,249	305	.....	2,295
2 Bayfield Har. & G. W. ]	.....	.....	.....	.....
3 Bayfield Transfer Ry. ...]	100	10	87	357
4 Chi., Mil. & St. Paul.....	501,010	83,155	27,312	20,948
5 Chicago & Northwestern ..	502,606	122,672	53,541	30,514
6 C., St. P., Minn. & Omaha	137,430	14,483	5,577	46,606
7 Chi., Madison & Northern	5,316	2,017	599	64
8 Dul., So. Shore & Atlantic	16,326	15,886	5,045	4,290
9 Eastern Ry. Co. of Minn.*	.....	.....	.....	.....
10 Fairchild & North Eastern	1,156	302	.....	54
11 Green Bay & Western ....	92,482	18,065	.....	5,515
12 Hazelhurst & South East'n	233	51	100	291
13 Iola & Northern .....	327	219	.....	.....
14 Kewaunee, Green B. & W.	51,306	7,049	.....	5,338
15 Marinette, Tomah'k & W.	1,187	386	629	1,310
16 Minnesota & Wisconsin...	2,957	608	156	724
17 M., St. P. & S't St. Marie	96,025	372,653	9,713	9,097
18 Northern Pacific .....	705,829	32,336	5,056	7,981
19 Wisconsin & Michigan ....	4,932	1,345	1,067	520
20 Wisconsin Cent. Ry. Co....	93,313	179,919	57,488	14,820
21 Wisconsin Western .....	741	154	88	.....
22 Hawthorne, Neb. & Sup...	233	105	.....	617
23 St. Paul & Duluth .....	47,668	1,829	5,127	1,317
	2,268,436	853,549	171,585	152,658

Statistical Tables.

Freight traffic movement, Wisconsin, 1900 (company's material excluded)—Con.

PRODUCTS OF AGRICULTURE.			Freight originating on road in Wisconsin. Whole tons.	Freight received from this road originating outside of Wisconsin and all other freight received from connecting roads and other carriers. Whole tons.	TOTAL FREIGHT TONNAGE.	
Tobacco.	Cotton.	Fruit and vegetables.			Whole ton.	Per cent.
		286	9,062	1,073	10,135	31.905
		62	616		616	1.59
31,621	†24,049	68,259	110,819	477,216	756,354	14.930
7,873	280	110,819	477,216	351,089	828,306	13.32
793		30,593	202,969	32,513	235,482	18.17
		1,688	4,023	5,661	9,684	8.55
		3,468	15,214	29,811	45,025	14.73
	†131,150			131,150	131,150	3.005
		593	1,993	112	2,105	28.69
		35,953	75,483	76,532	152,015	41.99
2		116		793	793	.73
		5,126	5,369	303	5,672	58.34
		2,740	28,152	38,281	66,433	39.79
1		168	500	3,181	3,681	6.38
		60	3,599	906	4,505	.04
	†2,127	9,837	494,987	4,465	499,452	26.84
	†22	5,326	3,174	753,376	756,550	56.79
		98	434	7,528	7,962	4.28
1,061		128,273	215,127	259,747	474,874	12.39
525		29	1,078	459	1,537	6.92
1	†90		262	784	1,046	2.39
		6,633	8,965	53,609	62,574	24.75
41,877	157,718	410,127	1,548,223 1,756,354	1,751,373	4,055,950	416.52
			2,304,577			

\*Proportionate.  
 †Other agricultural products.  
 ‡St. Paul.

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*Statistical Tables.*


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 Freight traffic movement, Wisconsin, 1900 (company's material excluded)—Con.
 

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NAME OF COMPANY.	PRODUCTS OF ANIMALS.				
	Live stock.	Dressed meats.	Other packing house products	Poultry, game and fish.	Wool.
1 Ahnapee & Western .....	1,032			263	
2 Bayfield Harbor & Gt. West. ]					
3 Bayfield Transfer Ry. .... ]		36	22	70	
4 Chicago, Milwaukee & St. Paul	140,797	20,781	10,267	42,651	3,422
5 Chicago & Northwestern .....	127,928	5,404	73,767	8,055	2,298
6 Chi., St. Paul, Minn. & Omaha	24,948	2,098	1,245	3,472	305
7 Chicago, Madison & Northern..	12,961		75		173
8 Duluth, South Shore & Atlantic	412	3,149		160	2,912
9 Eastern Ry. of Minnesota*....					
10 Fairchild & North Eastern .....	206				
11 Green Bay & Western .....	10,302			219	
12 Hazelhurst & South Eastern....	49	330	33	2	
13 Iola & Northern .....	62				
14 Kewaunee, Green Bay & West.	2,576			1,299	
15 Marinette, Tomahawk & West.	139	48	9	15	
16 Minnesota & Wisconsin.....	1,060				83
17 Minn., St. P. & S't Ste. Marie	3,952	5,286	5,500	3,439	2,768
18 Northern Pacific .....	1,287		84	6,966	1,766
19 Wisconsin & Michigan .....			240		
20 Wisconsin Central Ry. Co. ....	22,274	2,466	3,542	1,795	1,349
21 Wisconsin Western .....	2,151				17
22 Hawthorne, Nebagamon & Sup.	67	4			
23 St. Paul & Duluth .....	894	606	444		
	353,097	40,108	95,228	68,406	15,093

\*Proportionate.

*Statistical Tables.*

Freight traffic movement, Wisconsin, 1900 (company's material excluded)—Con.

PRODUCTS OF ANIMALS.		Freight originating on road in Wisconsin. Whole tons.	Freight received from this road originating outside of Wisconsin and all other freight received from connecting roads and other carriers. Whole tons.	TOTAL FREIGHT TONNAGE.		No.
Hides and leather.	All other.			Whole tons.	Per cent.	
		1,087	208	1,295	14.076	1
		128		128	.54	2
11,112			229,030	229,030	4.521	3
26,380		217,053	26,779	243,832	3.93	4
262		20,258	12,072	32,330	2.02	5
130		12,782	557	13,339	11.77	6
12		165	6,480	6,645	1.17	7
	*1,668		*1,668	1,668	.085	8
		206		206	2.80	9
		9,654	867	10,521	2.91	10
		414		414	.37	11
		62		62	.64	12
		3,355	520	3,875	2.32	13
6		130	87	217	.38	14
6		1,116	33	1,149	.02	15
1,200		18,642	3,503	22,145	1.187	16
63		115	10,051	10,166	.73	17
			240	240	.12	18
22,397		33,336	20,487	53,823	1.39	19
		2,153	15	2,168	9.77	20
	2	23	50	73	.14	21
		605	1,339	1,944	.77	22
61,568	1,670	321,284	313,986	635,270	51.609	....



*Statistical Tables.*

Freight traffic movement, Wisconsin, 1900 (company's material excluded)—  
Product of mines.

Name of Company.	Coal adthracite.	Coal. bituminous.	Coke.	Ores.
1 Ahnapee & Western .....	280	315		
2 Bayfield Har. & G. W. )				
3 Bayfield Transfer Ry. . . )	92			
4 Chicago, Mil. & St. Paul..	261,514	130,227	3,611	81,400
5 Chicago & Northwestern ..	259,563	342,644	6,407	227,390
6 C., St. P., Minn. & Omaha	112,078	171,013	27,509	7,882
7 Chl., Lake Shore & East'n		1,131,105	1,611,315	391,709
8 Chl., Madison & Northern	5,691	14,639	275	370
9 Dul., So. Shore & Atlantic	172	536		4,678
10 Eastern Ry. Co. of Minn.				
11 Fairchild & North Eastern	46	535		
12 Green Bay & Western.....	4,379	19,420		
13 Hazelhurst & South East'n	23			
14 Iola & Northern .....	32			
15 Kew'nee, Green Bay & W.	333	55,655		
16 Marinette, Tomah'k & W.	250	1,474		
17 Minnesota & Wisconsin ..		5,284	23,529	33,148
18 M., St. P. & S't Ste. Marie	18,578	50,747	70	437,588
19 Northern Pacific .....	59,091	57,375	9,055	25,778
20 Northwestern Coal Ry. Co.	80,329	320,364	2,891	
21 Wisconsin & Michigan .....			78	
22 Wisconsin Central Ry. Co.	42,336	182,876	4,556	1,467,450
23 Wisconsin Western .....	29	1,001		
24 Hawthorne, Neb. & Sup....	13	1		
25 St. Paul & Duluth .....	59,561	65,667	1,698	
	904,392	2,550,878	1,690,994	2,677,388

\*Proportional.

*Statistical Tables.*

Freight traffic movement, Wisconsin, 1900 (company's material excluded)—  
Product of mines—Continued.

Stone, sand and other like articles.	Originating on this road in Wisconsin. Whole tons.	Freight received from this road originating outside of Wisconsin. All other freight received from connecting roads and carriers.	Whole tons.	Per cent.	No.
424	25	994	1,019	3.207	1
106	198		198	.82	2
249,545		726,297	726,297	14.357	3
190,353	923,403	102,054	1,026,357	16.50	4
12,871	294,567	36,786	331,353	22.75	5
803,925	948,846	2,989,208	3,938,054	63.91	6
1,292	1,391	20,876	22,267	19.64	7
1,046	612	5,815	6,427	2.11	8
		*194,084	194,084	4.21	9
		581	581	7.90	10
1,673	10,233	15,239	25,472	7.04	11
		23	23	.02	12
17		49	49	.51	13
351	41,993	14,296	56,289	33.71	14
		1,724	1,724	2.99	15
5,170	30,264	36,867	67,131	.58	16
4,990	1,328	510,645	511,973	27.523	17
2,914	4,315	150,900	154,215	11.60	18
	403,584		403,584	100	19
		78	78	.03	20
61,570	383,673	1,375,115	1,758,788	45.89	21
	1,030		1,030	4.64	22
	14		14	.02	23
5,004	125,099	6,831	131,930	52.26	24
					25
1,341,201	3,170,575	6,188,462	9,358,937	447.197	....

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*Statistical Tables.*


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Freight traffic movement, Wisconsin, 1900 (company's material excluded--  
Products of the forest.

Name of Company.	Lumber.	Other forest products.	Freight originating on line in Wisconsin. Whole tons.
1 Abobtsford & Northeastern .....			
2 Ahnapee & Western .....	10,284	392	8,664
3 Bayfield Haror & Great Western.....]			
4 Bayfield Transfer Ry. ....	4,695	15,605	20,300
5 Chicago, Milwaukee & St. Paul.....	1,859,958		1,859,958
6 Chicago & Northwestern.....	1,984,005		1,738,157
7 Chi., St. Paul, Minn. & Omaha.....	403,137		354,870
8 Chicago, Lake Shore & Eastern.....		14,597	14,597
9 Chicago, Madison & Northern.....	27,902		2,960
10 Chippewa River & Menomonie.....	113,500		113,500
11 Drummond & South Western.....	46,750		46,750
12 Duluth, South Shore & Atlantic.....	104,070	91,078	159,214
13 Eastern Ry. Co. of Minnesota*.....		33,182	
14 Fairchild & Eastern .....	22,102	43,573	65,284
15 Green Bay & Western .....	74,590		37,769
16 Hazelhurst & South Eastern .....	29,078	78,818	106,980
17 Iola & Northern .....	1,804		1,700
18 Kewaunee, Green Bay & Western .....	15,881		5,598
19 Marinette, Tomahawk & Western .....	29,748	19,375	49,111
20 Minnesota & Wisconsin .....	10,006	14,674	23,260
21 Minneapolis, St. Paul & Sault St. Marie	677,480	67	653,381
22 Northern Pacific .....	88,786	194,855	245,185
23 Wisconsin & Michigan .....	62,720	93,964	156,684
24 Wisconsin Central Ry. Co. ....	448,253	441,941	707,758
25 Wisconsin Western .....	3,838	9,319	11,899
26 Hawthorne, Nebagamon & Superior....	16,171	34,841	40,842
27 St. Paul & Duluth .....	20,015	8,749	10,135
	6,054,773	1,085,030	6,433,496

\*Proportionate.

*Statistical Tables.*

Passenger and freight and train mileage, Wisconsin, 1900—Train mileage.

Name of Company.	Other freight received from connecting roads. Whole tons.	Whole tonnage.	Per cent.
1 Abbotsford & Northeastern .....			95.
2 Ahnapee & Western .....	2,012	10,676	34.943
3 Bayfield Harbor & Great Western.....			
4 Bayfield Transfer R'y .....		20,300	85.30
5 Chicago, Milwaukee & St. Paul .....		1,859,958	36.716
6 Chicago & Northwestern .....	245,848	1,984,005	31.92
7 Chicago, St. Paul, Minneapolis & Omaha	48,267	403,137	27.67
8 Chicago, Lake Shore & Eastern .....		14,597	.25
9 Chicago, Madison & Northern .....	25,002	27,902	24.63
10 Chippewa River & Menomonie .....		113,500	
11 Drummond & South Western .....		46,750	
12 Duluth, South Shore & Atlantic .....	35,934	195,148	63.91
13 Eastern R'y Co. of Minnesota .....	33,182	33,182	.719
14 Fairchild & North Eastren .....	391	65,675	895.56
15 Green Bay & Western .....	36,821	74,590	20.60
16 Hazelhurst & South Eastern .....	916	107,896	98.41
17 Iola & Northern .....	104	1,804	18.56
18 Kewaunee, Green Bay & Western .....	10,283	15,881	9.51
19 Marinette, Tomahawk & Western .....	12	49,123	85.24
20 Minnesota & Wisconsin .....	1,420	24,680	.20
21 Minneapolis, St. Paul & Sault St. Marie	24,166	677,547	36.413
22 Northern Pacific .....	38,456	283,641	21.27
23 Wisconsin & Michigan .....		156,684	85.
24 Wisconsin Central R'y Co. ....	182,436	890,194	23.42
25 Wisconsin Western .....	1,258	13,157	59.26
26 Hawthorne, Nebagamon & Superior ..	170	41,012	.946
27 St. Paul & Duluth .....	18,629	28,764	11.40
	705,307	7,139,803	940.843

*Statistical Tables.*

Freight traffic movement, Wisconsin, 1900 (company's material excluded)—Continued.

Name of company.	Petroleum and other oils.	Sugar.	Naval stores.	Iron, pig and blown.
1 Ahnapee & Western .....				
2 Bayfield Harbor & G. W. ..				
3 Bayfield Transfer R'y ..	13	5		
4 Chicago, Mil. & St. Paul.	2,301			
5 Chicago & Northwestern ..	10,599	12,097	479	90,951
6 Chicago, St. P., M. & O...	3,410	7,396		18,493
7 Chicago, Lake Shore & E..	13,444	50,554	225,474	352,073
8 Chicago, Madison & North.	768	596	15	48
9 Duluth, So. Shore & Atl...	204	983		2,947
10 Fairchild & North Eastern	115	108		
11 Green Bay & Western ....	596	222		
12 Hazelhurst & South East.	41	23		
13 Iola & Northern .....				
14 Kewaunee, G. B. & W.....	50	876		
15 Marinette, Tom. & W.....	18	44		71
16 Minnesota & Wisconsin....	179			14,421
17 Minn., St. P. & S. S. M...	7,247	2,961		5,701
18 Northern Pacific .....	6,462	5,652		3,772
19 Wisconsin & Michigan ....	88			
20 Wisconsin Central R'y Co..	20,335	4,007		21,246
21 Wisconsin Western .....				
22 Hawthorne, Neb. & Sup...	44			
23 St. Paul & Duluth .....	5,790			287
Totals .....	71,704	85,524	225,968	510,010

*Statistical Tables.*

Freight traffic movemnt, Wisconsin, 1900 (company's material excluded)—Continued.

Iron and steel rails.	Other castings and machinery.	Bar and sheet metal.	Cement, brick and lime.	Agricultural implements.	Wagons, carriages, etc.	No.
.....	150	35	477	254	148	1
890	380	.....	381	.....	79	2
241,819	56,176	131	107,833	48,561	27,312	3
48,748	51,480	117,369	149,885	41,651	39,821	4
8,077	7,114	2,216	27,312	3,245	1,826	5
783,834	18,087	220,343	97,449	148,170	.....	6
.....	559	425	3,128	.....	175	7
1,004	6,785	1,756	4,219	881	551	8
717	.....	.....	698	34	.....	9
.....	1,816	1,413	6,891	1,548	348	10
.....	53	16	2	.....	19	11
.....	12	47	326	52	11	12
.....	361	4,686	1,400	280	159	13
623	197	28	310	5	25	14
31	208	.....	749	52	40	15
4,318	2,974	16,601	12,828	1,120	728	16
15,640	1,849	1,139	27,789	289	223	17
1,390	720	.....	1,020	355	80	18
12,859	27,649	18,113	46,275	5,520	5,952	19
.....	129	.....	361	268	55	20
171	112	99	55	.....	.....	21
584	980	70	1,834	.....	178	22
1,120,705	187,791	384,487	491,222	252,443	77,730	23

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*Statistical Tables.*


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Freight traffic movement, Wisconsin, 1900 (company's material excluded)—Manufactures.

Name of Company.	Wines, liquors and beer.	Household goods and furniture.	Freight originating on this road in Wisconsin. Whole tons.
1 Abbotsford & Northeastern .....			444
2 Ahnapee & Western.....	263	166	
3 Bayfield Harbor & Great Western.....			761
4 Bayfield Transfer Ry .....		13	
5 Chicago, Milwaukee & St. Paul .....	265,728	22,097	
6 Chicago & Northwestern .....	205,708	86,706	763,978
7 Chi., St. Paul, Minneapolis & Omaha	6,500	6,965	55,379
8 Chicago, Lake Shore & Eastern .....			1,600,065
9 Chicago, Madison & Northern .....	143	340	1,006
10 Duluth, South Shore & Atlantic.....	949	423	3,627
11 Eastern R'y Co. of Minnesota*.....			
12 Fairchild & North Eastern .....	19	26	39
13 Green Bay & Western .....	2,912	1,197	7,024
14 Hazelhurst & South Eastern .....	42	17	7
15 Iola & Northern .....	13	40	18
16 Kewaunee, Green Bay & Western.....	526	238	5,630
17 Marinette, Tomdawk & Western.....	68	81	156
18 Minnesota & Wisconsin .....	395	54	14,539
19 Minneapolis, St. Paul & Sault St. Marie	3,399	2,244	22,708
20 Northern Pacific .....	1,848	1,433	7,111
21 Wisconsin & Michigan .....	296	90	839
22 Wisconsin Central R'y Co. ....	19,006	12,465	78,774
23 Wisconsin Western .....	145	205	202
24 Hawthorne, Nebagamon & Superior.....		86	232
25 St. Paul & Duluth .....	681	548	6,280
Totals .....	508,641	135,434	2,569,819

\*Proportionate.

*Statistical Tables.*

Freight traffic movement, Wisconsin, 1900 (company's material excluded)—Manufactures.

Name of Company.	All other freight received from connecting roads. Whole tons.	Total freight tonnage. Whole tons.	Total freight tonnage. Per cent.
1 Abbotsford & Northeastern .....			
2 Ahnapee & Western .....	1,049	1,493	4.700
3 Bayfield Harbor & Great Western.....			
4 Bayfield Transfer R'y .....		1,761	2.40
5 Chicago, Milwaukee & St. Paul.....	771,958	771,958	14.24
6 Chicago & Northwestern.....	106,516	865,404	13.94
7 Chicago, St. Paul, Minneapolis & Omaha	37,175	92,554	6.36
8 Chicago, Lake Shore & Eastern.....	309,363	1,909,428	30.96
9 Chicago, Madison & Northern .....	6,072	7,078	6.26
10 Duluth, South Shore & Atlantic .....	16,352	19,979	6.57
11 Eastern Railway Co. of Minnesota .....		16,865	3.65
12 Fairchild & North Eastern.....	1,678	1,717	23.40
13 Green Bay & Western .....	9,919	16,943	3.67
14 Hazelhurst & South Eastern .....	206	213	.19
15 Iola & Northern .....	483	501	6.07
16 Kewaunee, Green Bay & Western ....	2,946	8,576	5.13
17 Marinette, Tomahawk & Western .....	1,314	1,470	2.55
18 Minnesota & Wisconsin .....	1,590	16,129	.15
19 Minneapolis, St. Paul & Sault St. Marie	37,413	60,121	3.23
20 Northern Pacific .....	58,985	66,096	4.92
21 Wisconsin & Michigan .....	3,200	4,039	2.08
22 Wisconsin Central R'y Co. ....	114,653	193,427	4.92
23 Wisconsin Western .....	961	1,163	5.23
24 Hawthorne, Nebagamon & Superior....	335	567	1.30
25 St. Paul & Duluth .....	4,672	10,952	2.05
Totals .....	1,481,840	4,068,524	151.68



## Statistical Tables.

Freight traffic movement, Wisconsin, 1900 (company material excluded)—Merchandise and miscellaneous products.

NAME OF COMPANY.	Merchandise.	Miscellaneous, other commodities not mentioned heretofore.	Freight originating on this line Wisconsin. Whole tons.	Freight received from this road and other freight from connections. Whole line.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....	4,006	3,142	4,032	3,116
3 Bayfield Har. & G. W. ....				
4 Bayfield Transfer R'y .....	797		797	
5 Chicago, Mil. & St. Paul..	496,468	225,725		
6 Chicago & Northwestern..	587,752	679,149	1,006,902	259,999
7 Chicago, St. P., M. & O. ....	72,514	239,331	283,157	78,688
8 Chicago, Lake Shore & E. ....		299,857	212,808	87,049
9 Chicago & Lake Superior..				
10 Chicago, Madison & North..	16,259	16,761	17,813	15,107
11 Chippewa Riv. & Menom. ....	1,500		1,500	
12 Drummond & South West..	421		421	
13 Duluth, So. Shore & Atl. ....	32,113		13,727	18,386
14 Duluth, Superior & W. ....				
15 Eastern R'y Co. of Minn.* ..	3,443.43	4,328.2		
16 Fairchild & North East.....	2,249	800	2,045	1,004
17 Green Bay & Western.....	25,477	56,994	49,924	32,547
18 Hazelhurst & South East..	168	131	25	274
19 Iola & Northern .....	1,430	114	575	969
20 Kewaune, G. B. & W. ....	9,329	6,592	8,988	6,933
21 Marinette, Tom. & West....	1,075	340	817	593
22 Minnesota & Wisconsin .....	2,828	406	1,122	1,112
23 Minn., St. P. & S. S. M. ....	42,847	46,558	14,024	65,381
24 Northern Pacific .....		63,898	10,338	53,560
25 Northwestern C. R'y Co. ....				
26 Wisconsin & Michigan .....	8,552	7,701	14,135	148
27 Wisconsin Cent. R'y Co. ....	119,607	342,876	270,371	191,123
28 Wisconsin Western .....	2,434	676	1,088	2,022
29 Hawthorne, Neb. & S. ....	652		169	483
30 St. Paul & Duluth .....	6,802	9,570	7,519	8,853
Totals .....	1,438,723.42	2,054,319	2,022,297	827,352

\*Proportionate.

## Statistical Tables.

Freight traffic movement, Wisconsin, 1900 (company material excluded)—Merchandise and miscellaneous products.

Total freight tonnage.	Per cent.	Grand total freight originating on road named in Wisconsin Whole line.	Grand total freight received from this road outside of Wisconsin and all other freight received from connecting roads and carries. Whole tons.	GRAND TOTAL FREIGHT TONNAGE.		No.
				Whole line.	Per cent.	
7,148	22.502	35,123	1,996	37,119		1
		23,314	8,462	31,776	100	2
797	3.35	23,800		23,800	100	3
722,193	14.256		5,065,796	5,065,790	100	4
1,266,901	20.39	5,127,709	1,087,185	6,214,894	100	5
261,845	24.83	1,211,200	245,501	1,456,701	100	6
299,857	4.88	2,776,316	3,385,620	6,161,936	100	7
				4,801		8
23,020	29.15	40,015	73,275	113,290	100	9
1,500		113,500	1,500	115,000	100	10
421		47,171		47,171	100	11
32,113	10.51	192,559	112,778	305,337	100	12
			1,235,817	1,235,817	100	13
7,771.63	.168		391,973	391,973	100	14
3,049	41.65	69,567	3,766	73,333	100	15
82,471	22.79	190,087	171,925	362,012	100	16
299	.28	107,012	2,626	109,638	100	17
1,544	1.17	7,724	1,997	9,721	100	18
15,921	9.54	93,716	73,259	166,975	100	19
1,415	2.46	50,714	6,916	57,630	100	20
2,334	.02	73,873	42,928	116,801	100	21
89,405	4.80	1,215,070	645,573	1,860,643	100	22
63,898	4.79	269,236	1,065,328	1,334,564	100	23
		403,584		403,584	100	24
15,623	8.46	172,092	12,534	184,626	100	25
461,494	12.04	1,689,039	2,143,561	3,832,600	100	26
3,110	14.01	16,420	5,782	22,202	100	27
652	1.50	41,528	1,836	43,364	100	28
16,372	6.43	158,603	93,933	252,536	100	29
						30
3,381,154	260.026	14,153,773	15,881,860	30,035,633	100	

*Statistical Tables.*

Description of equipment, whole lines, 1900—Locomotives.

NAME OF COMPANY.	PASSENGER.		FREIGHT.		SWITCHING.		LEASED.	
	N'mb'r added during year.	Total numb'r at end of year.	N'mb'r added during year.	Total numb'r at end of year.	N'mb'r added during year.	Total numb'r at end of year.	N'mb'r added during year.	Total numb'r at end of year.
1 Abbotsford & Nor.				1				
2 Ahnapee & West.		2						
3 B. H. & G. W.								
4 Bayfield Tr. Co.	1	1	1	1				
5 C., M. & St. Paul								
6 Chicago & N. W.*								
7 C., St. P., M. & O.*								
8 Chicago, B. & N.*								
9 C., L. S. & E....						4		
10 Chicago & L. S....		1						
11 Chippewa R. & M.				3				
12 Drum'nd & S. W.			3					
13 D., S. S. & Atl...								
14 Dul. Sup. & Wes.					2	2		
15 E. R'y Co. of M.*								
16 Fairchild & N. E.				4				
17 Gr. Bay & West.		16		14		2		
18 Hazelh't & S. E.				1		1		
19 Iola & Northern.				1				
20 K., Gr. Bay & W.		1		1				
21 Mattoon R'y Co..				2				
22 Marshfield & S. E.		2		1				
23 Mar. Tom. & W.				3		3		
24 Minn. & Wis....				2				
25 M., St. P., & S. S. M.		5	1	8		2		7
26 Northern Pacific*								
27 Nor. C. R'y Co..						2		
28 Wis. & Michigan.		2		3				
29 White'b & Morris				1				
30 W. Cen. R'y Co.*								
31 Wis. Western....		3						
32 Holmes & Son....			1	3		3		
33 Hawth., N. & S....				3				
34 St. P. & Duluth*..								
	1	33	5	52	2	19		7

\*Proportionate.

Statistical Tables.

Description of equipment—Whole line, 1900—Locomotives—Continued.

TOTAL.		EQUIPPED WITH TRAIN BRAKE.		FITTED WITH AUTOMATIC COUPLERS.		No.
N'mb'r added during year.	Total num'b'r at end of year.	Total num. ber.	Kind.	Total number.	Kind.	
	1	1				1
	2	1	Westinghouse.			2
1	2	2	Westinghouse & New York.			3
						4
6	213	428				5
14	293	393		238		6
2.4	109.1	109.8		105.07		7
.34	20.5	19.8		19.8		8
	4	4	American.	.3	Tower.	9
	1	1	Westinghouse.			10
	3					11
3						12
	18	14				13
2	2	2	New York.			14
3	4	3				15
	4	2	Westinghouse.	.1	Chicago.	16
	22	22	Westinghouse.			17
	2	1	Westinghouse.			18
	1	1	Westinghouse.			19
	2	2	Westinghouse.			20
	2					21
	3	2	Westinghouse.			22
	6	3	Westinghouse.			23
	2	2	Westinghouse.	.1	Tower.	24
1	22	22	Westinghouse.	.22	Washburn.	25
4	12	12	Westinghouse.	.7		26
	2	2	Westinghouse.	.2	Tower.	27
	5	5				28
	1					29
9	89	89		.23		30
	3	3	Westinghouse.	.3	Hein.	31
1	6	3	Westinghouse.			32
	3	2	Westinghouse.			33
	3	3	Westinghouse.			34
39.14	802.6	1,053.9		424.87		

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*Statistical Tables.*


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Description of equipment, whole line, 1960—Cars in passenger service.

NAME OF COMPANY.	FIRST CLASS.		SECOND CLASS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Ahnapee & Western .....		1		
2 Bayfield Harbor & Great West.]				
3 Bayfield Transfer R'y.....	1	1		
4 Chicago, Milwaukee & St. Paul*..				
5 Chicago & Northwestern*.....				
6 Chicago, St. Paul, M. & O.*.....				
7 Chicago, Burlington & Northorn*..				
8 Chicago & Lake Superior .....				
9 Chippewa River & Menomonie .....				
10 Duluth, South Shore & Atlantic*..				
11 Eastern Railway Co. of Minn.*.....				
12 Fairchild & North Eastern .....				
13 Green Bay & Western .....		7		5
14 Hazelhurst & South Eastern .....				
15 Iola & Northern .....				
16 Kewaunee, Green Bay & Western .....		2		
17 Marshfield & South Eastern .....				
18 Marinette, Tomahawk & Western .....		1		
19 Minnesota & Wisconsin .....				
20 Minn. St. P. & Sault St. Marie....		3		3
21 Northern Pacific*.....				
22 Wisconsin & Michigan .....		1		
23 Wisconsin Central R'y Co.* .....				
24 Wisconsin Western .....		2		
25 Hawthorne, Nebagamon & Sup....				
26 St. Paul & Duluth*.....				
	1	18		8

\*Proportionate.

*Statistical Tables.*

Description of equipment, whole line, 1900—Cars in passenger service.

COMBINATION.		EMIGRANT.		DINING CARS.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
	1					1
	1					2
						3
						4
						5
						6
						7
	1					8
	1					9
						10
						11
1	2					12
	3					13
	1					14
	1					15
	2					16
	2					17
	2					18
	1					19
	1		4		1	20
						21
	1					22
						23
	1					24
1	1					25
						26
2	22		4		1	

*Statistical Tables.*

Description of equipment, whole line, 1900—Cars in passenger service.

NAME OF COMPANY.	PARLOR CARS.		SLEEPING CARS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Ahnapee & Western .....				
2 Bayfield Harbor Great Western ] .....				
3 Bayfield Transfer Ry. ....				
4 Chicago, Milwaukee & St. Paul. ....				
5 Chl., St. Paul, Minn. & Omaha. ....				
7 Chl., Burlington & Northern .....				
8 Chicago & Lake Superior .....				
9 Chippewa River & Menomonie. ....				
10 Duluth, South Shore & Atlantic. ....				
11 Eastern Railway Co. of Minnesota .....				
12 Fairchild & North Eastern. ....				
13 Green Bay & Western. ....				
14 Hazelhurst & South Eastern .....				
14 Hazelhurst & South Eastern .....				
15 Iola & Northern .....				
16 Kewaunee, Green Bay & Western .....				
17 Marshfield & South Eastern. ....				
18 Marinette, Tomahawk & Western .....				
19 Minnesota & Wisconsin .....				1
20 Minn., St. P. & Sault Ste. Marie .....				2
21 Northern Pacific .....				
22 Wisconsin & Michigan .....				
23 Wisconsin Central Ry. Co. ....				
24 Wisconsin Western .....				
25 Hawthorne, Nebagamon & Sup. ....				
26 St. Paul & Duluth .....				
				3

*Statistical Tables.*

Description of equipment, whole line, 1900—Cars in passenger service—Continued.

BAGGAGE, EXPR'SS, POSTAL.		OTHER CARS.		TOTAL.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
.....	1	.....	.....	.....	3	1
.....	.....	.....	.....	1	2	2
.....	.....	.....	.....	14	212	3
.....	.....	.....	.....	14	25	4
.....	.....	.....	.....	7.9	87.7	5
.....	.....	.....	.....	14	18	6
.....	.....	.....	.....	.....	1	7
.....	.....	.....	.....	.....	1	8
.....	.....	.....	.....	.....	9.11	9
.....	.....	.....	.....	1.19	2.46	10
.....	.....	.....	.....	.....	.....	11
.....	7	.....	.....	.....	22	12
.....	.....	.....	.....	.....	1	13
.....	.....	.....	.....	.....	1	14
.....	.....	.....	.....	.....	5	15
.....	1	.....	.....	.....	2	16
.....	.....	.....	.....	.....	6	17
.....	.....	2	2	2	6	18
.....	.....	.....	.....	.....	1	19
.....	4	.....	.....	.....	18	20
.....	.....	.....	.....	.....	58	21
.....	.....	.....	.....	.....	2	22
.....	.....	.....	.....	.....	73.4	23
.....	.....	.....	.....	.....	3	24
.....	.....	.....	.....	1	1	25
.....	.....	.....	.....	.....	4	26
.....	13	2	2	42	511.07	.....



*Statistical Tables.*

Description of equipment, whole line, 1900—Cars equipped with train brake and automatic couplers; passenger and freight service.

NAME OF COMPANY.	CARS IN PASSENGER SERVICE.			
	Equipped with Train Brake.		Equipped with Automatic Couplers.	
	No.	Kind.	No.	Kind.
Abbotsford & Northeast'n.	3.	Westinghouse	3.	Miller
Ahnapee & Western	1.	Westinghouse		
Bayfield Transfer R'y*	211.		210.	
Chicago, Milw'kee & St. P.	25.3		25.3	
Chicago & Northwestern*	87.7		87.7	
Chic., St. P., Minn. & O.*	18.		18.	
Chic., Burl'ton & North'rn*	1.	Westinghouse		
Chic. L. Shore & Eastern				
Chicago & Lake Superior.				
Chippewa R. & Menomonie				
Drummond & So. Western	9.1		9.1	
Duluth, S. Shore & Atlan'c	2.4		2.4	
Eastern R'y of Minn*	2.	Westinghouse	2.	Chicago & Miller
Fairchild & North East'n.	22.	Westinghouse	22.	Miller
Green Bay & Western	1.	Westinghouse		
Hazelhurst & So. Eastern	1.	Westinghouse	1.	Miller
Iola & Northern	5.	Westinghouse	5.	Miller
Kewaunee, Green B. & W.				
Marshfield & South East'n.				
Minnesota & Wisconsin			1.	Standard
Minn., St. Paul & Ashland	18.	Westinghouse	18.	Trojan & Washburn.
Minn., St. P. & S. S. Marie	10.4		10.4	
Northern Pacific				
Northwestern Coal R'y Co.				
Whitcomb & Morris	73.44		73.44	
Wisconsin Central R'y Co.	3.	Westinghouse	3.	Hein
Wisconsin Western Co.				
Holmes & Son				
Hawthorne & Nebragamon & Son				
St. Paul & Duluth	4.01		4.01	
Total	498.35		495.05	

\* Proportionate.

*Statistical Tables.*

Description of equipment, whole line, 1900—Cars equipped with train brake and automatic couplers; passenger and freight service—Continued.

CARS IN FREIGHT SERVICE.				Total passenger cars.	Total freight cars.
EQUIPPED WITH TRAIN BRAKE.		EQUIPPED WITH AUTOMATIC COUPLERS.			
No.	KIND.	No.	Kind.		
22.	Westinghouse.....	22.	Miller.....	3.	4. 21.
682.27				212.4	7,407.4
8,845.52		11,283.4		25.3	11,286.4
3,392.76		4,070.44			
453.		927.		18.08	936.49
56.	Westinghouse.....	56.	Tower.....		
37.	Westinghouse.....	45.	Tower.....	1.	122.
207.7			Detroit.....		77.
410.2		408.8		9.1	523.8
4.	Westinghouse.....	4.	Hein.....	2.46	420.83
297.	Westinghouse.....	39.	Miller & Trojan.....	2.	64.
				22.	437.
1.	Westinghouse.....	1.	Miller.....	1.	4.
	Westinghouse.....		Miller.....	5.	
20.	Hand brake.....			2.	42.
1,108.	Westinghouse.....	1,509.	Washburn.....	18.	1,490
385.6		447.5		10.4	445.45
		1.			
4,108.3		4,491.4			7.
4.	Westinghouse.....	4.	Hein.....	73.4	4,876.41
24.	Westinghouse.....			3.	2.
					134.
137.6				1	60.
				4.01	140.74
26,336.38		22,672.54		414.15	28,581.52

*Statistical Tables.*

Description of equipment, whole line, 1900—Cars in freight service.

NAME OF COMPANY.	BOX CARS.		FLAT CARS.		STOCK CARS.		COAL CARS.	
	Num-ber added during year.	Total num-ber at end of year.	Num-ber added during year.	Total num-ber at end of year.	Num-ber added during year.	Total num-ber at end of year.	Num-ber added during year.	Total num-ber at end of year.
1 Abbots'f'd & N. E.				4				
2 Ahnapee & West.		1	15	20				
3 B. H. & G. W.								
4 Bay. Tr. Ry.				19				
5 C. M., & St. P.*								
6 Chicago & N. W.*								
7 C., St. P. Minn. & Omaha*								
8 C., Bur. & North.*								
9 C., L. Shore & E.				82				
10 C. & L. Superior	1	1		2				
11 C. R. & Menom.								
12 D., So. S. & Atl.*								
13 E. Ry. Co. of M.*								
14 Fairchild & N. E.		4		55				
15 Green Bay & W.		372		59				
16 Hazelh'st & S. E.								
17 Iola & Northern		1		3				
18 Mattoon Ry. Co.		13						
19 Marshfield & S. E.		7		35				
20 M., Toma. & W.				10				
21 Minnesota & Wis.				20				
22 M., St. P. & Sault Ste. Marie	42	1,262	1	145		21		16
23 Northern Pacific*								
24 Whitcomb & M.				3				
25 Wis. C. Ry. Co.*								
26 Wis. Western		2						
27 Hawth'ne N. & S.								
28 St. Paul & Dul.*								
	43	1,663	15	457		21		10

\*Proportionate.

Statistical Tables.

Description of equipment, whole line, 1900—Cars in freight service—Continued.

TANK CARS.		REFRIGERATOR CARS.		OTHER CARS.		TOTAL.	TOTAL.	No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Total number added during year.	Total number box cars in freight service at end of year.	
.....	.....	.....	.....	.....	.....	.....	4	1
.....	.....	.....	.....	.....	.....	15	21	2
.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	19	4
.....	.....	.....	.....	.....	.....	643.1	7,407.4	5
.....	.....	.....	.....	.....	.....	1,188.4	11,286.4	6
.....	.....	.....	.....	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	189.76	4,070.44	8
.....	.....	.....	.....	.....	.....	29.1	936.4	9
.....	.....	.....	.....	.....	40	.....	122	10
.....	.....	.....	.....	.....	75	1	1	11
.....	.....	.....	.....	.....	.....	1.9	523.8	12
.....	.....	.....	.....	.....	.....	39.18	420.8	13
.....	.....	.....	1	.....	4	.....	64	14
.....	.....	.....	6	.....	.....	.....	437	15
.....	.....	.....	.....	.....	63	.....	63	16
.....	.....	.....	.....	.....	.....	.....	4	17
.....	.....	.....	.....	.....	16	.....	29	18
.....	.....	.....	.....	.....	.....	.....	42	19
.....	.....	.....	.....	4	40	4	50	20
.....	.....	.....	.....	.....	.....	.....	20	21
.....	.....	.....	15	1	37	48	1,490	22
.....	.....	.....	.....	.....	.....	17.2	445.45	23
.....	.....	.....	.....	.....	4	.....	7	24
.....	.....	.....	.....	.....	.....	397.8	4,876.41	25
.....	.....	.....	.....	.....	.....	.....	2	26
.....	.....	.....	.....	.....	60	.....	60	27
.....	.....	.....	.....	.....	.....	.....	140.7	28
.....	.....	.....	22	4	339	1,574.44	32,547.80	....

*Statistical Tables.*

Description of equipment, whole line, June 30, 1900—Cars in company's service; cars contributed to fast freight line service, cars leased.

NAME OF COMPANY.	GRAVEL CARS.		DERRICK CARS.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & Northeastern .....				
2 Ahnapee & Western .....				
3 Bayfield Harbor & G. W. ....				
4 Bayfield Transfer Ry. ....				
5 Chicago, Milwaukee & St. P.* .....				
6 Chicago & Northwestern* .....				
7 Chi., St. P., Minn. & Omaha* .....				
8 Chicago, Burlington & Northern* .....				
9 Chicago, Lake Shore & Eastern* .....				
10 Chicago & Lake Superior .....				
11 Chippewa River & Menomonie .....				1
12 Drummond & South Western .....				
13 Duluth, South Shore & Atlantic* .....				
14 Duluth, Superior & Western .....				
15 Dunbar & Wausaukee .....				
16 Fairchild & Northeastern .....				
17 Green Bay & Western .....				
18 Hazelhurst & South Eastern .....				
19 Iola & Northern .....				
20 Kewaunee, Green Bay & Western .....				
21 Mattoon Ry. Co. ....				
22 Marshfield & South Eastern .....				
23 Marinette, Tomahawk & Western .....				1
24 Minnesota & Wisconsin .....				
25 Minn., St. P. & Sault Ste. Marie .....		11		1
26 Northern Pacific* .....				
27 Northwestern Coal Ry. Co. ....				
28 Whitcomb & Morris .....				
29 Wisconsin Central Ry. Co.* .....				
30 Wisconsin Western .....		27		2
31 Holmes & Son .....		4		1
32 Hawthorne, Nebagamon & Sup. ....				
33 St. Paul & Duluth* .....				
		42		6

\*Proportionate.

Statistical Tables.

Description of equipment, whole line, June 30, 1900—Cars in company's service; cars contributed to fast freight line service, cars leased—Continued.

CABOOSE CARS.		OTHER ROAD CARS.		TOTAL.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
	1		1		5	1
					1	2
			3		3	3
				2.8	153.51	4
				77	250.6	5
				64.3	126.74	6
				1.19	12.07	7
						8
						9
	2		2		5	10
1		78		79		11
				1.7	31.23	12
					7.05	13
						14
1	6		21		28	15
	1				1	16
						17
	2				2	8
	1					19
					2	20
1	15		2	1		21
				6.65	29	22
	1				59.29	23
					1	24
						25
	2			10.4	53.24	26
	2	14	127	14	31	27
					134	28
						29
					2.53	30
						31
						32
3	32	92	156	256.85	938.26	33

## Statistical Tables.

Description of equipment, whole line, June 30, 1900—Cars in company's service; cars contributed to fast freight line service, cars leased—Continued.

NAME OF COMPANY.	FAST FREIGHT LINE.		TOTAL OWNED.	
	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.
1 Abbotsford & Northeastern .....				5
2 Ahnapee & Western .....				25
3 Bayfield Har. & G. W. ] .....				24
4 Bayfield Transfer Ry. . . ] .....				24
5 Chicago, Mil. & St. P.* .....			660.19	9,557.65
6 Chicago & Northwestern* .....			1,279.8	11,790.44
7 C., St. P., M. & Omaha* .....				4,284.42
8 Chicago, Burlington & N.* .....				122
9 Chicago, Lake Shore & E. .....				2
10 Chicago & Lake Superior .....				83
11 Chippewa R. & Menomonie .....				79
12 Drummond & South West .....				564.15
13 Dul., So. Shore & Atlantic .....				37.99
14 Duluth, Superior & W. ....				430.35
15 Dunbar & Wausaukee ....				487
16 Fairchild & North Eastern .....				65
17 Green Bay & Western .....				5
18 Hazelhurst & South East'n .....				5
19 Iola & Northern .....				31
20 Kew'nee, Green Bay & W. ....				44
21 Mattoon Ry. Co. ....				58
22 Marshfield & So. Eastern .....			6	21
23 Marinette, Tomah'wk & W. ....				21
24 Minnesota & Wisconsin .....				49
25 M., St. P. & S't Ste. Marie .....			24.52	1,024
26 Northern Pacific* .....				515.13
27 Northwestern Coal Ry. Co. ....				1
28 Whitcomb & Morris .....				408.28
29 Wisconsin Cent. Ry. Co.* .....				5,003.1
30 Wisconsin Western .....				36
31 Holmes & Son .....			14	134
32 Hawthorne, Neb. & Sup. ....				61
33 St. Paul & Duluth* .....				119.84
			2,558.78	34,498.08

\*Proportionate.

Statistical Tables.

Description of equipment, whole line, June 30, 1900—Cars in company's service; cars contributed to fast freight line service, cars leased—Continued.

CARS LEASED.		GRAND TOTAL.		GRAND TOTAL.		No.
Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	Number added during year.	Total number at end of year.	
.....	.....	.....	5	1	.....	1
.....	.....	.....	25	3	.....	2
.....	.....	.....	.....	.....	3	3
.....	.....	.....	24	.....	.....	4
.....	.....	660.19	9,557.65	7,040	9,492.63	5
.....	.....	1,299.8	11,790.44	9,193.28	11,790.44	6
.....	.....	262	4,284.42	3,541.24	4,284.42	7
.....	.....	28.11	966.65	481.64	956.28	8
.....	.....	.....	122	56	56	9
.....	.....	.....	2	1	.....	10
.....	.....	.....	83	37	45	11
.....	.....	79	.....	79	.....	12
.....	.....	.....	564.15	.....	.....	13
.....	.....	.....	.....	2	.....	14
.....	.....	37.99	430.35	413.1	420.83	15
.....	.....	.....	66	8	7	16
.....	.....	.....	487	319	421	17
.....	.....	.....	65	2	65	18
.....	.....	.....	5	1	1	19
.....	.....	.....	5	7	5	20
.....	.....	.....	31	.....	.....	21
.....	.....	.....	44	2	.....	22
.....	.....	6	64	3	5	23
.....	.....	.....	21	22	2	24
.....	513	49	1,537	1,126	1,527	25
.....	.....	24.52	515.13	406.99	458.03	26
.....	.....	.....	1	2	2	27
.....	.....	.....	7	.....	.....	28
.....	.....	408.28	5,003.1	4,209.9	4,604.07	29
.....	.....	.....	36	37	7	30
.....	.....	14	134	24	.....	31
.....	.....	.....	61	2	.....	32
.....	.....	.....	147.29	143	142.67	33
.....	513	2,849	26,085.18	36,083	34,295.57	.....



*Statistical Tables.*

Description of equipment, whole line, 1900.

Name of Company.	Locomotives of all kinds.	Cars in passenger service of all kinds.	Cars in freight service of all kinds.	Cars of all kinds in company's service.
1 Abbotsford & Northeastern	1	.....	4	5
2 Ahnapee & Western	2	3	21	22
3 Bayfield Har. & G. W. }				
4 Bayfield Transfer Ry. }	2	2	19	3
5 Chi., Milwaukee & St. P...	837	833	36,046	602
6 Chicago & Northwestern..	1,060	918	40,893	908
7 C., St. P., Minn. & Omaha	275	221	10,253	318
8 Chi., Burlington & North'n	603	532	27,544	355
9 Chi., Lake Shore & East'n	54	.....	4,270	21
10 Chicago & Lake Superior ..	1	1	1	.....
11 Chippewa R. & Menomonie	3	1	77	5
12 Drummond & South West.	3	.....	.....	79
13 Dul., So. Shore & Atlantic	92	47	2,700	161
14 Dul., Superior & Western	2	.....	.....	.....
15 Eastern Ry. Co. of Minn.	44	29	4,951	83
16 Fairchild & North Eastern	4	2	64	.....
17 Green Bay & Western.....	22	22	437	28
18 Hazelhurst & South East'n	2	1	63	1
19 Iola & Northern .....	1	1	4	.....
20 Kew'nee, Green Bay & W.	2	5	.....	.....
21 Mattoon Ry. Co. ....	2	.....	29	2
22 Marshfield & South East'n	3	2	42	.....
23 Marinette, Tomah'k & W.	6	6	50	2
24 Minnesota & Wisconsin....	2	1	20	.....
25 M., St. P. & S't Ste. Marie	97	84	7,031	134
26 Northern Pacific .....	594	501	21,416	2,849
27 Northwestern Coal Ry. Co.	2	.....	.....	1
28 Wisconsin & Michigan ....	5	2	202	6
29 Whitcomb & Morris .....	1	7	.....	.....
30 Wisconsin Central Ry. Co.	145	120	7,968	87
31 Wisconsin & Western.....	3	3	2	31
32 Holmes & Son .....	6	.....	.....	134
33 Hawthorne, Neb. & Sup...	3	1	60	8
34 St. Paul & Duluth.....	62	73	2,559	46
	4,941	3,418	1,667,26	5,883

## Statistical Tables.

Description of equipment, whole line, 1900—Continued.

Name of Company.	Cars contributed to fast freight line service.	Total owned.	Grand total.	Cars leased.
1 Abbotsford & Northeastern		5	5	
2 Ahnapee & Western		25	25	
3 Bayfield Har. & G. W.				
4 Bayfield Transfer Ry.		24	24	
5 Chi., Milwaukee & St. P.		37,481	37,481	
6 Chicago & Northwestern		42,719	42,719	
7 C., St. P., Minn. & Omaha		10,792	10,792	
8 Chicago, Burlington & N.		28,431	28,431	
9 Chi., Lake Shore & Eastern		4,291	4,291	
10 Chicago & Lake Superior		2	2	
11 Chippewa R. & Menomonie		83	83	
12 Drummond & South West		79	79	
13 Dul., So. Shore & Atlantic	100	2,908	2,908	
14 Dul., Superior & Western				
15 Eastern Ry. Co. of Minn.		5,063	5,063	
16 Fairchild & North Eastern		66	66	
17 Green Bay & Western		487	487	
18 Hazelhurst & South East		65	65	
19 Iola & Northern		5	5	
20 Kew'nee, Green Bay & W.		5	5	
21 Mattoon Ry. Co.		31	31	
22 Marshfield & South East		44	44	
23 Marinette, Tomah'k & W.		58	64	
24 Minnesota & Wisconsin		21	21	
25 M., St. P. & S't Ste. Marie	467	4,829	7,249	2,420
26 Northern Pacific		24,766	24,766	
27 Northwestern Coal Ry. Co.		1	1	
28 Wisconsin & Michigan		210	210	
29 Whitcomb & Morris		7	7	
30 Wisconsin Central Ry. Co.		8,175	8,175	
31 Wisconsin Western		36	36	
32 Holmes & Son		134	134	
33 Hawthorne, Neb. & Sup.		61	61	
34 St. Paul & Duluth		2,179	2,678	499
	567	172,083	56,008	2,919

*Statistical Tables.*

Milage, Wisconsin, 1900—Milage of road operated.

NAME OF COMPANY.	LINE IN USE.		LINE IN USE.			
	Miles of single track.	Miles of second track.	Miles of third track.	Miles of fourth track.	Miles of yard track and sidings.	Total milage operated (all track).
1 Abbotsford & N. E. . . . .	15.16	.....	.....	.....	.58	15.74
2 Ahnapee & Western..	34	.....	.....	.....	2	36
3 Bayfi'd H. & G. W. }	.....	.....	.....	.....	.....	.....
Bayfield Trans. Ry. }	9.86	.....	.....	.....	.66	10.52
4 C., Milw'kee & St. P.	1,649.88	48.54	1.62	9.97	634.33	2,344.34
5 Chicago & Northwest.	1,640.65	142.69	.....	.....	.....	1,783.34
6 C., St. P., M. & Omaha	619.11	3.23	.....	.....	185.85	808.19
7 C., Burlington & N...	223.10	6.13	.....	.....	32.40	261.63
8 C., L. Shore & Eastern	.....	.....	.....	.....	.....	.....
9 Chi. & Lake Superior	9	.....	.....	.....	.25	3.25
10 C., Madison & North'n	91.31	.....	.....	.....	11.31	102.62
11 Chip. R. & Menom...	33	.....	.....	.....	.....	33
12 Drummond & S. W...	21.72	.....	.....	.....	10	31.72
13 D., So. Shore & Atl'ic	112.28	.....	.....	.....	14.12	126.40
14 Dul., Sup. & Western	6.16	.....	.....	.....	8.31	14.47
15 Eastern Ry. of Minn.	38.15	16.41	.....	.....	61.75	116.31
16 Green Bay & Western	225	.....	.....	.....	23.08	248.08
17 Hazelhurst & S. E....	17	.....	.....	.....	1	18
18 Iola & Northern.....	4.70	.....	.....	.....	.....	4.70
19 Kewaunee, G. B. & W.	36.70	.....	.....	.....	9.69	46.39
20 Marshfield & S. E....	33	.....	.....	.....	.....	33
21 Marquette, Tom. & W.	33.30	.....	.....	.....	.....	33.30
22 Minn. & Wisconsin...	21	.....	.....	.....	5	26
23 M., St. P. & S. Ste. M	271.42	.....	.....	.....	47.56	318.98
24 Northern Pacific .....	104.94	.85	.....	.....	31.33	137.12
25 N. W. Coal Ry. Co....	2.53	.64	.....	.....	4.83	8
26 Win. Bridge Ry. Co...	.....	.....	.....	.....	.....	.....
27 Wis. & Michigan.....	40.12	.....	.....	.....	.....	32.82
28 Whitcomb & Morris...	6	.....	.....	.....	.....	6
29 Wis'cin Cen. Ry. Co.	884.76	8.42	.....	.....	183.99	1,077.17
30 Wisconsin Western ..	51.68	.....	.....	.....	3.87	55.55
31 Haw., Neb. & Superior	7.35	.....	.....	.....	.....	7.35
32 St. Paul & Duluth....	13.75	.....	.....	.....	3.18	16.93
	6,250.63	226.91	1.62	9.97	1,275.09	7,756.92

Statistical Tables.

Mileage, Wisconsin, 1900—Mileage of road operated—Continued.

LINE REPRESENT'D BY CAPITAL STOCK.		Line of pro- prietary com- panies.	Line oper- ated under lease.	Line oper- ated under con- tract, etc.	Line oper- ated under rights track- age.	New line con- struc- ted dur- ing year.	RAILS.		Total mile- age oper- ated.	No.
Main line.	Br'ches and spurs.						Iron.	Steel.		
15.74							14.94	.80	15.74	1
					36			36	36	2
										3
4.52				6.00				10.52	10.52	
234.07					23.27		168.83	2,152.24	2,344.34	4
1,096.54	610.72	16.06		60.02		49.30	20	1,763.34	1,733.34	5
806.60					1.59	2.90	51.6	.755	808.19	6
261.10					.53			261.10	261.63	7
			17.33						17.33	8
3.25								3.25	3.25	9
102.62								102.62	102.62	10
25	8					8		33	33	11
31.72									31.72	12
120.65	1.68				4.07	1.45	.32	122.01	126.40	13
14.47						8.32		14.47	14.47	14
116.31						26.57		67.58	116.31	15
233	15.08						19	229.08	248.08	16
14	4							18	18	17
								4.70	4.70	18
44.64	1.75						9.69	36.70	46.39	19
53								33	33	20
33.30							15.50	17.80	33.30	21
26							5	21	26	22
310.36	8.62							318.98	318.98	23
119.22	17.07					.83	1.21	135.08	137.12	24
8								8	8	25
								.54	.54	26
					7.30			32.82	40.12	27
6									6	28
646.87	392.96				37.34	39.43	327.20	712.63	1,077.17	29
55.55								55.55	55.55	30
7.35								7.35	7.35	31
	16.56				.37			16.93	16.93	32
6,456.88	1,076.44	16.06	17.33	66.02	111.30	135.97	633.29	6,969.09	7,602.38	

*Statistical Tables.*

Mileage—Whole line.

NAME OF COMPANY.	LINE IN USE.		LINE IN USE.			
	Miles of single track.	Miles of second track.	Miles of third track.	Miles of fourth track.	Miles of yard track and sidings.	Total mileage operated (all tracks).
Abbotsford & Northeast.	15.16				.58	15.74
Ahnapee & Western .....	34				2	36
Bayfield Transfer R'y .....	9.86				.66	10.52
Chicago, Milw. & St. P. ....	6,461.56	285.33	6.16	1.72	1,613.26	8,368.03
Chicago & Northwestern .....	5,571.23	632.36			1,893.75	8,097.34
C., St. P. M. & O. ....	1,557.30	25.57			458.65	2,041.52
Chicago, Burlington & N. ....	6,412.48	333.17	23.55		1,388.29	8,157.49
Chicago, Lake Shore & E. ....	323.65	8.56				332.21
Chicago & Lake Superior .....	3				.25	3.25
Chicago, Madison & Noro. ....	231.30	6.08			53.82	291.20
Chippewa Riv. & Menom. ....	33					33
Drummond & South West. ....	21.72				10	31.72
Duluth, So. Shore & Atl. ....	578.74	2.44			128.10	709.28
Duluth, Sup. & Western. ....	6.16				8.31	14.47
Eastern R'y Co. of Minn. ....	446.60	21.02			130.53	598.15
Green Bay & Western. ....	225				23.08	248.08
Hazelhurst & South East. ....	17				1	18
Iola & Northern .....	4.70					4.70
Kewaunee, G. B. & West. ....	36.70				9.69	46.39
Marshfield & So. Eastern. ....	33					33
Marquette, Tom. & West. ....	33.30					33.30
Minnesota & Wisconsin. ....	21				5	26
Minn., St. P. & S. S. M. ....	1,297.95				170.80	1,468.75
Northern Pacific .....	5,036.99	46			925.28	6,008.27
Northwestern Coal Ry Co. ....	2.53	.64			4.83	8
Winona Bridge R'y Co. ....	1.03					1.03
Wisconsin & Michigan .....	72.07					72.07
Whitcomb & Morris .....	6					6
Wisconsin Cent. R'y Co. ....	1,025.93	35.27	7.02	7.02	212.15	1,287.39
Wisconsin Western .....	51.65				3.87	55.55
Hawthorne, Neb. & Sup. ....	7.35					7.35
St. Paul & Duluth .....	246.24	246.24	16.88		113.70	376.82
	29,824.23	1,642.68	53.61	8.74	7,157.60	38,440.61



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*Statistical Tables.*


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## Renewals of rails and ties, Wisconsin, 1900.

NAME OF COMPANY.	NEW RAILS LAID DURING YEAR.			
	Iron, tons.	Steel, tons.	Weight, per yard.	Average price per ton at distributing point.
1 Abbotsford & Northeastern .....		1,339	60	\$27 00
2 Ahnapee & Western.....				
3 Chicago, Milwaukee & St. P .....		18,606	75, 85	25 25
4 Chicago & Northwestern .....		11,943	90, 80, 70, 60	20 04
5 Chicago, St. Paul, M. & O. ....		6,524	80	19 00
6 Chicago, Burlington & Nor. ....		394	75	35 15-18 05
7 Chicago, Lake Shore & E. ....		90	70, 75	32 00
8 Chicago, Madison & North. ....				
9 Chippewa Riv. & Menom. ....	115		50	25 00
10 Drummond & South West. ....				
11 Duluth, South Shore & Atl. ....				
12 Duluth, Superior & West. ....				
13 Eastern R'y Co. of Minn. ....		11,965	75	21 70
14 Green Bay & Western.....		1,478	77.5	25 60
15 Hazelhurst & South East. ....				
16 Iola & Northern .....				
17 Marinette, Tom. & West. ....		500	60	22 00
18 Minnesota & Wisconsin .....				
19 Minn., St. P. & S. S. M. ....				
20 Northern Pacific .....		¼	66	19 80
22 Wisconsin & Michigan .....				
23 Wisconsin Cent. R'y Co. ....		2,151	80, 85	26 47
24 Wisconsin Western .....				
25 St. Paul & Duluth .....		756	70	20 00
	115	55,746¼		

*Statistical Tables.*

Renewals of rails and ties, Wisconsin, 1900.

NEW TIES LAID DURING YEAR.			
Kind.	Total number.	Average price at distributing point.	No.
Hemlock, oak and elm .....	6,067	16.8	1
Hemlock and cedar .....	34,675	.22	2
Mixed .....	543,050	42.40	3
Oak, etc. ....	678,991	.35	4
Mixed .....	285,158	.35	5
Cedar and oak .....	79,309	30-40, 38-60	6
Oak and hemlock .....	3,225	34, 57	7
Oak .....	36,827	.35	8
Hemlock .....	10,230	.....	9
Soft wood .....	3,660	.1	10
Mixed .....	23,880	.2175	11
Pine and cedar .....	1,654	.47	12
Mixed .....	7,740	.31	13
Hemlock, Cedar and oak .....	74,292	.27	14
Hemlock .....	2,000	.25	15
Cedar, oak, etc. ....	10,163	25	16
Tamarack, etc. ....	14,000	17	17
Elm and butternut .....	9,134	16, 20, 10	18
Mixed .....	120,945	28	19
Oak and Tamarack .....	27,216	28	20
Tamarac and pine .....	225	.32	21
Cedar .....	3,000	.20	22
Mixed .....	313,675	.314	23
Mixed .....	4,722	.37	24
Oak and tamarack .....	10,466	.26	25
	2,284,304	64.98	



*Statistical Tables.*

## Consumption of fuel by locomotives, Wisconsin, 1900.

NAME OF COMPANY.	PASSENGER, TONS.		FREIGHT, TONS.	
	Anthracite.	Bituminous.	Anthracite.	Bituminous.
1 Abbotsford & Northeastern .....				433
2 Annapee & Western .....		641		
3 Bayfield Transfer R'y .....				
4 Chicago, Milw. & St. Paul .....		121,513		240,666
5 Chicago & Northwestern .....		145,896		324,146
6 Chicago, St. Paul, M. & O. ....		38,850		77,391
7 Chicago, Burlington & Nor. ....		210,436		571,965
8 Chicago, Lake Shore & E. ....				
9 Chicago, Madison & North. ....		2,543		4,615
10 Chippewa Riv. and Menom. ....				
11 Drummond & South West. ....				656
12 Duluth, South Shore & Atl. ....		3,804		6,560
13 Duluth, Superior & West. ....				
14 Green Bay & Western .....		4,380		7,139
15 Hazelhurst & South East. ....				807
16 Iola & Northern .....				
17 Kewaunee, Gr. Bay & W. ....				2,123
18 Marinette, Tom. & West. ....				25
19 Minnesota & Wisconsin .....				
20 Minn., St. Paul & S. S. M. ....		5,974		36,563
21 Northern Pacific .....		1,837		7,879
22 Northwestern Coal R'y Co. ....				
23 Hawthorne, Neb. & Sup. ....				625
24 Wisconsin Central R'y Co. ....		56,353		136,206
25 Wisconsin Western .....				676
26 Hawthorne, Neb. & Sup. ....				625
27 St. Paul & Duluth .....		199		320

## Statistical Tables.

Consumption of fuel by locomotives, Wisconsin, 1900.

NAME OF COMPANY.	SWITCHING, TONS.		CONSTRUCTION, TONS.		Total.
	Anthra- cite.	Bitumin- ous.	Anthra- cite.	Bitumin- cite.	
1 Abbotsford & Nor.....					433
2 Ahnapee & Western.....					641
3 Bayfield Transfer R'y.....					44,625
4 Chicago, M. & St. P.....		56,998		17,921	437,093
5 Chicago & Northw.....		71,277		24,789	566,108
6 C., St. P. M. & O.....		19,119		9,120	144,480
7 Chicago, Bur. & Nor.....		147,911		24,366	954,680
8 Chicago, L. S. & East.....		3,008			3,008
9 Chicago, Mad. & Nor.....		560		222	7,940
10 Chippewa Riv. & M.....					656
11 Drummond & S. W.....					10,455
12 Duluth, S. S. & Atl.....				90	2,458
13 Duluth, Sup. & West.....		2,458			13,012
14 Green Bay & West.....		1,193		300	1,407
15 Hazelhurst & S. E.....		600			327
16 Iola & Northern.....					2,345
17 Kewaun., G. B. & W.....		222			16,756
18 Mar., Tom. & West.....		267		275	1,291
19 Minnesota & Wiscon.....				938	43,475
20 M., St. P. & S. S. M.....				326	11,785
21 Northern Pacific.....		1,743			610
22 Noorthw. C. R'y Co.....		610			
23 Whitcomb & Morris.....					225,702
24 Wis. Cent. R'y Co.....		20,317		12,826	71,801
25 Wisconsin Western.....				41	833
26 Hawthorne, N. & S.....		208			519
27 St. Paul & Duluth.....					
					243,220,291

*Statistical Tables.*

Consumption of fuel by locomotives, Wisconsin, 1900—Continued.

NAME OF COMPANY.	Average cost at distrib- uting point.	WOOD.	
		Hard.	Soft.
1 Abbotsford & Northeastern .....	\$3 94		
2 Ahnapee & Western .....	2 93		210
3 Bayfield Transfer R'y .....	4 15		10
4 Chicago, Milwaukee & St. Paul.....	1 81		1,160
5 Chicago & Northwestern .....	1 70	1,409	2,840
6 Chicago, St. Paul, Minneapolis & Om.	2 25		2,184
7 Chicago, Burlington & Northern .....	1 43		1,651
8 Chicago, Lake Shore & Eastern .....			
9 Chicago, Madison & Northern .....	96	70	
10 Chippewa River & Menomonie .....		2,600	
11 Drummond & Southwestern .....	3 05		212
12 Duluth, South Shore & Atlantic .....	2 51		172
13 Duluth, Superior & Western .....	2 38	6	
14 Green Bay & Western .....	2 50		717
15 Hazelhurst & South Eastern .....	2 00		
16 Iola & Northern .....	3 00		48
17 Kewaunee, Kreen Bay & Western .....	2 50		158
18 Marinette, Tomahawk & Western .....	3 45		330
19 Minnesota & Wisconsin .....	3 49		
20 M., St. P. & Sault Ste. Marie .....	2 18		423
21 Northern Pacific .....	2 28	23	198
22 Northwestern Coal R'y Co. ....	3 14		33
23 Whitcomb & Morris .....		300	
24 Wisconsin Central R'y Co. ....	1 74		1,776
25 Wisconsin Western .....	5 01		
26 Hawthorne, Nebagamon & Superior .....	2 73		434
27 St. Paul & Duluth .....	2 41		26

*Statistical Tables.*

Consumption of fuel by locomotives, Wisconsin, 1900—Continued.

NAME OF COMPANY.	Total fuel consumed, tons.	Miles run.	Average pounds consumed per mile.
1 Abbotsford & Northeastern .....	433	10,320	83.91
2 Ahnapee & Western .....	746	42,568	30
3 Bayfield Transfr R'y .....	458.25	12,917	70.95
4 Chicago, Milwaukee & St. Paul .....	437,679	10,391,439	84.24
5 Chicago & Northwestern .....	568,467	12,088,837	94.05
6 Chicago, St. Paul, M. & O. ....	145,572	3,516,638	82.79
7 Chicago, Burlington & Northern .....	960,932	22,147,409	86.78
8 Chicago, Lake Shore & Eastern .....	3,008	145,540	41
9 Chicago, Madison & Northern .....	7,986.66	165,551	96.49
10 Chippewa River & Menomonie .....	1,733.33	39,000	88.89
11 Drummond & South Western .....	2		
12 Duluth, South Shore & Atlantic .....	105.41	286,117	73.69
13 Duluth, Superior & Western .....	24.62		
14 Green Bay & Western .....	133.70	516,612	51.76
15 Hazelhurst & South Eastern .....	14.07	43,390	64.89
16 Iola & Northern .....	3.51	8,850	79.32
17 Kewaunee, Green Bay & Western .....	34.24	82,291	58.91
18 Marinette, Tomahawk & Western .....	18.40	52,870	69.63
19 Minnesota & Wisconsin .....	12.91	45,000	57.38
20 Minneapolis, St. P. & Sault Ste. Marie .....	4,368.7	1,042,964	83.58
21 Northern Pacific .....	1,189.9	328,958	72.34
22 Northwestern Coal R'y Co. ....	62.6	28.38	44.17
23 Whitcomb & Morris .....	300		
24 Wisconsin Central R'y Co. ....	226,591	4,408,038	101.97
25 Wisconsin Western .....	718	21,258	15.70
26 Hawthorne, Nebagamon & Superior .....	1,267	12,322	271
27 St. Paul & Duluth .....	532	16,806	63.31
	2,362,443.30	55,425,723.38	1,806.75

*Statistical Tables.*

Accidents to persons, Wisconsin, 1900—Employees (trainmen).

NAME OF COMPANY.	COUPLING AND UN-COUPLING CARS.		FALLING FROM TRAINS AND ENGINES.		OVERHEAD OBSTRUCTION.		COLLISIONS.		DERAILMENTS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, M. & St. P.	6	1	5	2	1	.....	1	.....	.....	.....
2 Chicago & Northw.	1	9	2	3	.....	.....	.....	5	.....	.....
3 St. P., M. & O....	2	1	.....	3	.....	.....	.....	.....	.....	2
4 Chicago, B. & Nor..	.....	2	.....	3	.....	.....	.....	.....	.....	.....
5 Duluth, S. S. & A..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6 Kewau., G. B. & W.	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
7 M., St. P. & S. S. M.	.....	3	.....	5	.....	.....	.....	1	.....	2
8 Northern Pacific ..	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
9 Wiscon. C. R'y Co.	5	3	.....	1	.....	1	.....	4	.....	2
10 Holmes & Son .....	.....	1	.....	.....	.....	.....	.....	.....	.....	2
11 St. Paul & Duluth]	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
	14	33	7	22	1	1	1	10	2	8

Accidents to persons, Wisconsin, 1900—Employees (trainmen).

NAME OF COMPANY.	OTHER TRAIN ACCIDENTS.		AT HIGHWAY CROSSINGS.		AT STATIONS.		OTHER CAUSES.		TOTAL.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, M. & St. P.	.....	.....	.....	.....	3	3	.....	.....	16	6
2 Chicago & Northw.	.....	2	.....	.....	.....	2	.....	1	3	27
3 C., St. P., M. & Om.	.....	.....	.....	.....	.....	.....	1	1	3	7
4 Chicago, Bur. & N.	.....	.....	.....	.....	.....	11	1	1	1	17
5 Duluth, S. S. & A..	.....	.....	.....	.....	.....	.....	.....	1	.....	1
6 Kewau., G. B. & W.	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
7 M., St. P. & S. S. M.	.....	1	.....	.....	.....	.....	.....	17	.....	34
8 Northern Pacific ..	.....	1	.....	.....	.....	1	.....	1	.....	4
9 Wiscon. C. R'y Co.	.....	.....	.....	.....	.....	.....	1	1	6	17
10 Holmes & Son .....	.....	1	.....	.....	.....	.....	.....	.....	.....	4
11 St. Paul & Duluth..	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
	.....	5	.....	.....	3	17	3	23	31	119



*Statistical Tables.*

Accidents to persons, Wisconsin, 1900—Employees other than trainmen, switchmen, flagmen and watchmen.

NAME OF COMPANY.	COUPLING AND UN-COUPLING.		FALLING FROM TRAINS AND ENGINES.		OVERHEAD OBSTRUCTION.		COLLISIONS.		DERAILMENT.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, M. & St. P.	1		1	1			1			
2 Chicago & Northw.		1	1	1				1		
3 C., St. P., M. & O.							2			
4 Chicago, Bur. & N.										
5 Chippewa R. & M.										
6 Drummond & S. W.										
7 E. R'y Co. of M.				1						1
8 Gr. Bay & Western			1							
9 M., St. P. & S. S. M.				2						
10 Northern Pacific										
11 Wiscon. C. R'y Co.								1		5
12 Holmes & Son		1								
13 St. Paul & Duluth.										
Total .....	1	2	3	5			3	2		6

Accidents to persons, Wisconsin, 1900—Employees other than trainmen, switchmen, flagmen and watchmen.

NAME OF COMPANY.	OTHER TRAIN ACCIDENTS.		AT HIGHWAY CROSSINGS.		AT STATIONS.		OTHER CAUSES.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, M. & St. P.					7	13			10	14
2 Chicago & Northw.					1	7	4	9	6	19
3 C., St. P., M. & O.							1	7	3	7
4 Chicago, Bur. & N.						1		10		11
5 Chippewa R. & M.								1		1
6 Drummond & S. W.								1		1
7 E. R'y Co. of M.							2	3	2	5
8 Gr. Bay & Western							1	1	2	2
9 M., St. P. & S. S. M.							1	16	1	18
10 Northern Pacific						1				6
11 Wiscon. C. R'y Co.							5	5	5	11
12 Holmes & Son										1
13 St. Paul & Duluth.							1	3	1	3
Total .....					8	22	15	60	30	97

*Statistical Tables.*

Accidents to persons, Wisconsin, 1900—Passengers.

NAME OF COMPANY.	COLLISIONS.		DERAILMENTS.		OTHER TRAIN ACCIDENTS.		AT HIGHWAY CROSSINGS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, M. & St. P.....	6	20				1		
2 Chicago & Northwestern .....								
3 Chicago, St. Paul, Minn. & O. ....								
4 Chicago, Burlington & Northern .....								
5 Duluth, South Shore & Atl.....								
6 Eastern R'y Co. of Minnesota .....		1				2		
7 Minneapolis, St. Paul & S. S. M .....				28		1		
8 Wisconsin Central R'y Co. ....		1						
	6	22		28		4		

Accidents to persons, Wisconsin, 1900—Passengers.

NAME OF COMPANY.	AT STATIONS.		OTHER CAUSES.		TOTAL.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, Milwaukee & St. Paul .....		2				2
2 Chicago & Northwestern .....	3	4			9	25
3 Chicago, St. Paul, Minneapolis & Omaha ..				2		2
4 Chicago, Burlington & Northern .....				2		2
5 Duluth, South Shore & Atlantic .....		2				1
6 Eastern Railway Co. of Minnesota .....						6
7 Minneapolis, St. Paul & Sault Ste. Marie..				4		6
8 Wisconsin Central R'y Co. ....		1	1	1	1	32
	3	9	1	10	10	73



*Statistical Tables.*

Accident to persons, Wisconsin, 1900—Trespassers.

NAME OF COMPANY.	COLLISIONS.		DERAILMENTS.		OTHER TRAIN ACCIDENTS.		AT HIGHWAY CROSSINGS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago, Milwaukee & St. Paul .....							7	4
2 Chicago & Northwestern .....					2	1		
3 Chicago, St. Paul, M. & O. ....	1	1						
4 Chicago, Burlington & Northern .....								
5 Duluth, South Shore & Atl. ....								
6 Eastern Railway Co. of Minn. ....								
7 Kewaunee, Gr. Bay & West. ....								
8 Minnesota & Wisconsin .....								
9 Minneapolis, St. P. & S. S. M. ....								
10 Northern Pacific .....								
11 Wisconsin Central R'y Co. ....								
	1	1			2	1	7	4

Accident to persons, Wisconsin, 1900—Trespassers.

NAME OF COMPANY.	AT STATIONS.		OTHER CAUSES.		TOTAL.	
	Killed.	Injured.	Killed.	Killed.	Injured.	Killed.
1 Chicago, Milwaukee & St. Paul .....	40	16			47	20
2 Chicago & Northwestern .....	1	2	36	18	39	21
3 Chicago, St. Paul, Minneapolis & Omaha ..	14	4			15	5
4 Chicago, Burlington & Northern .....			2	4	2	4
5 Duluth, South Shore & Atlantic .....				1		1
6 Eastern Railway Co. of Minnesota .....			3		3	
7 Kewaunee, Green Bay & Western .....	1				1	
8 Minnesota & Wisconsin .....			1		1	
9 Minneapolis, St. Paul & Sault Ste. Marie ..	1	1	1	4	2	5
10 Northern Pacific .....			1		1	
11 Wisconsin Central R'y Co. ....			10	2	10	2
	57	23	54	29	121	58

*Statistical Tables.*

Accidents to persons, Wisconsin, 1900—Not trespassing.

NAME OF COMPANY.	COLLISIONS.		DERAILMENTS.		OTHER TRAIN ACCIDENTS.		AT HIGHWAY CROSSINGS.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago & Northwestern .....	.....	.....	.....	.....	.....	.....	21	14
2 Chicago, St. Paul, M. & O. ....	.....	.....	.....	.....	.....	.....	.....	.....
3 Chicago, Burlington & Northern .....	.....	.....	.....	.....	.....	.....	1	.....
4 Wisconsin Central R'y Co. ....	.....	.....	.....	.....	.....	.....	8	3
	.....	.....	.....	.....	.....	.....	30	17

Accidents to persons, Wisconsin, 1900—Not trespassing.

NAME OF COMPANY.	AT STATIONS.		OTHER CAUSES.		TOTAL.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1 Chicago & Northwestern .....	.....	.....	.....	.....	23	14
2 Chicago, St. Paul, Minneapolis & Omaha .....	.....	1	2	.....	2	1
3 Chicago, Burlington & Northern .....	.....	.....	.....	.....	1	.....
4 Wisconsin Central R'y Co. ....	.....	.....	.....	.....	8	3
	.....	1	4	.....	34	18

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*Statistical Tables.*


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 Characteristics of road, Wisconsin, 1900.
 

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NAME OF COMPANY.	MILES.	ALIGNMENT.		
		Number of curves.	Aggregate length of curved line, miles.	Length of straight line, miles.
1 Abbotsford & Northeastern .....	15.16	.....	.....	.....
2 Ahnape & Western .....	34	35	8.7	25.3
3 Bayfield Harbor & Great West. ]	.....	.....	.....	.....
4 Bayfield Transfer R'y .....	3.85	23	1.78	2.08
5 Chicago & Northwestern .....	1,640.65	18.70	357.12	1,283.53
6 Chicago, St. Paul, M. & O. ....	617.52	61.7	113.35	504.17
7 Chicago, Madison & Northern....	91.31	132	28.94	62.37
8 Chippewa River & Menomonie....	33	61	11	22
9 Drummond & South Western.....	21.72	98	9.14	12.58
10 Duluth, South Shore & Atl.....	106.53	128	22.53	84
11 Green Bay & Western .....	225	132	31.22	193.78
12 Hazelhurst & South Eastern ....	17	66	9.16	7.84
13 Iola & Northern .....	4.70	3	.70	4
14 Kewaunee, Green Bay & Western	36.70	39	10.39	26.31
15 Marinette, Tomahawk & Western	33.30	47	5.93	27.37
16 Minnesota & Wisconsin .....	21	26	4	17
17 Minneapolis, St. Paul & S. S. M.	271.42	312	59.31	212.11
18 Northwestern Coal R'y Co. ....	2.53	3	.16	2.37
19 Winona Bridge R'y Co.* .....	.54	1.04	.197	.371
20 Wisconsin and Michigan .....	32.82	24	5.30	27.52
21 Whitcomb & Morris .....	6	9	.....	.....
22 Wisconsin Central Ry. Co. ....	706.23	678	142.86	563.37
23 Hawthorne, Nebagamon & Sup...	7.35	5	1	6.35
24 St. Paul & Duluth .....	13.38	18	3.30	10.08

\*Proportionate.



*Statistical Tables.*

Characteristics of road, Wisconsin, 1900—Continued.

NAME OF COMPANY.	BRIDGES.				
	Stone.	Iron.	Wooden.	Combina- tion.	Total.
1 Abbotsford & N. E....			8		8
2 Ahnapee & Western...			12		12
3 Bayfield Transfer Ry.					
4 Chi., Mil., & St. Paul		124	75	2	201
5 Chi. & Northwestern...		366	240	8	614
6 C., St. P., M. & Omaha	17	104	10		131
7 C., Burlington & N....		11	348		359
8 C., Lake Shore & E....					
9 C., Madison & North'n		13			13
10 Chp. R. & Menom....					
11 Drummond & S. W....			3		3
12 Dul., S. Shore & At....		4	8		12
13 Dul., Sup. & Western...			1		1
14 E. Ry. Co. of Minn....		8	1		9
15 Fairchild & N. E....		1	7		8
16 Green Bay & W....		5	125		130
17 Hazelhurst & S. E....			1		1
18 Iola & Northern.....			5		5
19 K., Green Bay & W....			15	1	16
20 Marshfield & S. E....					
21 Marinette, T. & West.			6		6
22 Minnesota & Wisconsin			17		17
23 M., St. P. & S. Ste. M.		2 ½	123	5 ½	125
24 Northern Pacific.....		2	2	5	9
25 N. W. Coal Ry. Co....					
26 Oshkosh Trans. Co....					
27 Winona B. Ry. Co.*...					½
28 Wisconsin & Michigan		1	1		2
29 Whitcomb & Morris....			4		4
30 Wis. Cent. Ry. Co....		43	10		53
31 Wisconsin Western...			30	15	45
32 Hawthorne, N. & Sup.			2		2
33 St. Paul & Duluth*....		½			½
	17	683	954	31½	1,787

Statistical Tables.

Characteristics of road, Wisconsin, 1900—Continued.

NAME OF COMPANY.	BRIDGES.			
	Number.	Aggregate length, feet.	Minimum length, feet.	Maximum length, feet.
1 Abbotsford & Northeasterly .....		848	64	400
2 Ahnapee & Western .....		8,180	48	1,296
3 Bayfield Transfer Ry. ....				
4 Chicago, Milwaukee & St. Paul .....		25,978	8	507
5 Chicago & Northwestern .....		32,663.3	4	2,507.10
6 C., St. Paul, Minn. & Omaha .....		12,883	3	1,317
7 Chi., Burlington & Northern .....		33,431.75	6	1,812
8 Chicago, Lake Shore & S. E. ....				
9 Chicago, Madison & Northern .....		1,544	24	156
10 Chippewa River & Menomonie .....				
11 Drummond & South Western .....		59		
12 Dul., South Shore & Atlantic .....		827.9	25.9	175
13 Duluth, Superior & Western .....		130	130	130
14 Eastern Ry. Co. of Minnesota .....		2,160	21	1,378
15 Fairchild & North Eastern .....		440	30	160
16 Green Bay & Western .....		10,438	30	624
17 Hazelhurst & South Eastern .....		277	277	277
18 Iola & Northern .....		791	74	247
19 Kewaunee, Green Bay & Western .....		2,907	16	1,700
20 Marshfield & South Eastern .....				
21 Marinette, Tomahawk & Western .....		3,060	16	2,200
22 Minnesota & Wisconsin .....		1,066	36	150
23 M., St. Paul & Sault Ste. Marie .....		22,478	15	1,573
24 Northern Pacific .....		1,051	44	303
25 Northwestern Coal Ry. Co. ....				
26 Oshkosh Transportation Co. ....				
27 Winona Bridge Ry. Co.* .....		660,716.16		
28 Wisconsin & Michigan .....		296.25	96.25	200
29 Whitcomb & Morris .....		72		
30 Wisconsin Central Ry. Co. ....		12,072.6	40	2,339
31 Wisconsin & Western .....		4,607.7	14.3	362.6
32 Hawthorne, Neb. & Superior .....		70	30	40
33 St. Paul & Duluth* .....		2,193		

\*Proportionate.

*Statistical Tables.*

Characteristics of road, Wisconsin, 1900—Continued.

NAME OF COMPANY.	TRESTLES.			
	Number.	Aggregate length, feet.	Minimum length, feet.	Maximum length, feet.
1 Abbotsford & Northeastern.....				
2 Ahnapee & Western.....				
3 Bayfield Transfer Ry. ....	1	625	625	625
4 Chicago, Milwaukee & St. Paul..	1,401	111,423	6	2,075
5 Chicago & Northwestern.....	1,557	114,456.5	4	1,726
6 Chicago, St. P., Minn. & Omaha	726	54,764		
7 Chicago, Burlington & Northern..				
8 Chicago, Lake Shore & Eastern..				
9 Chicago, Madison & Northern....	180	15,832	3	616
10 Chippewa River & Menomonee..	53		22	1,500
11 Drummond & South Western.....	1	210	210	210
12 Duluth, South Shore & Atlantic	48	13,641	16	1,171
13 Duluth, Superior & Western.....	2	2,293	702	1,591
14 Eastern Ry. Co. of Minnesota....	12	6,545	150	1,556
15 Fairchild & North Eastern.....				
16 Green Bay & Western.....				
17 Hazelhurst & South Eastern.....				
18 Iola & Northern.....				
19 Kewaunee, Green Bay & Western				
20 Marshfield & South Eastern.....				
21 Marinette Tomahawk & Western				
22 Minnesota & Wisconsin.....	3	1,526	448	630
23 Minn., St. P. & Sault Ste. Marie				
24 Northern Pacific.....	45	8,414	13	2,280
25 Northwestern Coal Ry. Co.....	4	940	111	543
26 Oshkosh Transportation Co.....				
27 Winona Bridge Ry. Co.*.....				
28 Wisconsin & Michigan.....	2	134.1	44.1	901
29 Whitcomb & Morris.....				
30 Wisconsin Central Ry. Co.....	541	46,188.6	10	2,462
31 Wisconsin Wester n.....	16	1,614	34.6	466
32 Hawthorne, Neb. & Superior....	1	825	825	825
33 St. Paul & Duluth*.....	4	793	20	569
	4,597			

\*Proportionate.

Statistical Tables.

Characteristics of road, Wisconsin, 1900—Continued.

NAME OF COMPANY.	TUNNELS.				Gauge.	Miles.
	Number	Aggregate length.	Minimum length.	Maximum length.		
1 Abbotsford & N. E.....					4 8½	15.16
2 Ahnapee & Western...					4 8½	34
3 Bayfield Transfer Ry.					4 8½	3.86
4 C. Mil. & St. Paul....	2,130	3	400	1,330	4 8½	1,649.88
5 Chicago & Northwest.	7,446	4	354	3,822	4 8½	1,624.65
6 C., St. P., M. & Omaha	872	1	872	872	4 8½	617.52
7 Chicago, Bur. & N.....					4 8½	223.10
8 C. Lake Shore & East.					4 8½	61.41
9 Chicago, Mad. & N.....	1,214	1	1,214	1,214	4 8½	91.31
10 Chip. R. & Menomonie					4 8½	33
11 Drummond & S. W. ...					4 8½	21.72
12 Dul., So. Shore & At.					4 8½	108.21
13 Dul., Sup. & Western					4 8½	6.16
14 E. Ry. Co. of Minn....					4 8½	38.15
15 Fairchild & N. E.....					4 8½	30
16 Green Bay & Western					4 8½	225
17 Hazelhurst & S. E. ...					4 8½	17
18 Iola & Northern.....					4 8½	4.70
19 K. Green Bay & W.					4 8½	36.70
20 Marshfield & S. E.....					4 8½	33
21 Marinette, Tom. & W.					4 8½	33.30
22 Minn. & Wisconsin..					4 8½	21
23 M., St. P. & S. Ste. M.					4 8½	271.42
24 Northern Pacific .....					4 8½	103.60
25 N. W. Coal Ry. Co....					4 8½	2.53
26 Oshkosh Trans. Co.....					4 8½	4.28
27 Winona B. Ry. Co.*...					4 8½	.54
28 Wisconsin & Michigan					4 8½	63.55
29 Whitecomb & Morris..						6.00
30 Wis. Central Ry. Co.					4 8½	884.76
31 Wisconsin Western ..	404	1	404	404	4 8½	51.68
32 Hawthorne, Neb. & S.					4 8½	7.35
33 St. Paul & Duluth*....					4 8½	13.38
		10				6,337.92

\*Proportionate.



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*Statistical Tables.*


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Characteristics of road, Wisconsin, 1900—Continued.

NAME OF COMPANY.	OVERHEAD HIGHWAY.					Height of lowest above surface of road.
	Cross-ings.	Bridges.	Con-duits.	Trestles.	Total.	
1 Chi., Mil. & St. Paul .....		5		31	36	17.4
2 Chicago & Northwest .....		43		3	46	17.4
3 C., St. P., M. & Omaha .....		11			11	17.6
4 Chi., Mad. & N. oper- ated by Illinois Cen. ....				6	6	18
5 Dul., So. Shore & At. E. Ry. Co. of Minn. ....					3	22
7 Fairchild & N. E. ....		1			1	28
8 K., Green Bay & W. Minn. & Wisconsin  ....		1		1	1	22
9 Minn. & Wisconsin  ....				1	1	25
10 Northern Pacific .....				1		21.8
11 Wisconsin Central ....				5	5	16.6
		61		47	110	205.2

*Statistical Tables.*

Characteristics of road, Wisconsin, 1900—Continued.

NAME OF COMPANY.	OVERHEAD RAILWAY.				Height of lowest above surface of road.
	Bridges.	Conduits.	Trestles.	Total.	
1 Chicago, Milwaukee & St. Paul	6	.....	3	9	18.7
2 Chicago & Northwestern.....	4	.....	3	7	16
3 C., St. P., Minn. & Omaha....	2	.....	.....	2	17.6
4 Chi., Madison & Northern, operated by Illinois Central .....	1	.....	.....	1	19
5 Duluth, So. Shore & Atlantic..	2	.....	.....	2	22
6 Eastern Ry. Co. of Minnesota..	.....	.....	.....	.....	.....
7 Fairchild & North Eastern.....	.....	.....	.....	.....	.....
8 Kewaunee, Green Bay & W.....	.....	.....	.....	.....	.....
9 Minnesota & Wisconsin .....	.....	.....	.....	.....	.....
10 Northern Pacific .....	.....	.....	.....	.....	.....
11 Wisconsin Central .....	1	.....	3	4	17.1
	16	.....	9	25	110.4

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*Statistical Tables.*


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Telegraph. A. Owned by company making report, Wisconsin, 1900.

NAME OF COMPANY.	OPERATED BY THIS COMPANY.			
	Miles of line.	Miles of wire.	Miles of line.	Miles of wire.
1 Abbotsford & Northeastern	15.16	15.16	15.16	15.16
2 Chl., Milwaukee & St. P.	1,619.30	6,629	.....	.....
3 Chicago & Northwestern	.....	393.60	.....	393.60
4 Chl., Burlington & Quincy	226.17	2,387.65	222.42	574.36
5 Chippewa R. & Menomonic	24.50	24.50	24.50	24.50
6 Dul., So. Shore & At....	109.03	123.06	.....	.....
7 D., Sup. & W. Ter. Co...	8 32	25.34	8 32	25.34
8 Eastern Ry. Co. of Minn.	32.31	116.73	32.31	73.30
9 Green Bay & Western...	260	260	.....	.....
10 Hazelhurst & South East.	17	17	17	17
11 Kew'nee, Green Bay & W.	32.91	32.91	.....	.....
12 Marshfield & South E.....	33.33	33.33	33.33	33.33
13 Marinette, Tomak & W.	35.20	35.20	35.20	35.20
14 M., St. P. & S. Ste. Marie	261.1	794.3	266.10	794.2
15 Northern Pacific	85.07	.....	.....	118.56
16 St. Paul & Duluth	13.75	15.50	.....	.....
17 Wisconsin Central	665.6	1,968.8	665.60	1,968.80
	3,438.42	12,871.75	1,319.61	4,078.04

*Statistical Tables.*

Telegraph. A. Owned by company making report, Wisconsin, 1900—Continued.

OPERATED BY ANOTHER COMPANY.

Miles of line.	Miles of wire.	Name of Operating Company.
1,619.30	6,629	Western Union.
3.75	1,813.29	Western Union and Chicago & Northwestern.
		North American.
		Jointly with Western Union.
	38.43	Jointly with Western Union.
		Jointly with Western Union.
		Jointly with Western Union.
	16.12	Jointly with Western Union.
13.75	15.50	Jointly with Western Union.
		Jointly with Western Union.
1,636.80	8,512.34	

*Statistical Tables.*

Telegraph. B. Owned by another company but located on property of road making report.

Name of Company.	Miles of line.	Miles of wire.
1 Ahnapee & Western .....	34	34
2 Chicago & Northwestern .....	1,721.60	8,131.80
3 Chicago, St. Paul, Minneapolis & Omaha.....	609.60	4,317.40
4 Chicago, Burlington & Quincy .....	3.75	1,813.29
5 Chicago, Madison & Northern, operated by Ill. Cen.	94	94
6 Minnesota & Wisconsin .....	21	21
7 Minneapolis, St. Paul & Sault Ste. Marie.....		207.70
8 St. Paul & Duluth .....		1.75
9 Wisconsin & Michigan .....	34	44.20
10 Wisconsin Central .....		1,796.1
	2,517.95	16,461.24

Telegraph. B. Owned by another company but located on property of road making report—Continued.

Name of owner.	Name of operating company.	No.
Western Union Tel. Co.....	Western Union Tel. Co.....	1
Western Union and C. & N. W. R'y.	Western Union & C. & N. W. R'y jointly....	2
Western Union and C. & N. W. R'y.	Western Union & C. & N. W. R'y jointly....	3
North American Tel. Co.....		4
Western Union Tel. Co.....	Western Union Tel. Co.....	5
Western Union Tel. Co.....	Western Union Tel. Co.....	6
Western Union Tel. Co.....	Western Union Tel. Co.....	7
Western Union Tel. Co.....	Western Union Tel. Co.....	8
Western Union Tel. Co.....	Wisconsin & Michigan R'y Co.....	9
Western Union Tel. Co.....	Western Union Tel. Co.....	10

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*New Railway Organizations.*


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**NEW RAILWAY ORGANIZATIONS.**


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The following railway companies have filed articles of incorporation in the Secretary of State's office since January 1st, 1900.

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**LOGANSVILLE & NARROWS PRAIRIE RY. CO.**

Capital Stock, \$70,000.00.

Incorporators:  
 D. L. Hulburt ..... Logansville, Wis.  
 H. L. Hulburt ..... Logansville, Wis.  
 H. L. Wellenhaser ..... Madison, Wis.  
 C. W. Constantine ..... Madison, Wis.  
 E. L. Dittmar ..... Baraboo, Wis.  
 Filed Jan. 24, 1899.

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**CHICAGO, HARVARD & GENEVA LAKE RY. CO.**

Capital Stock, \$150,000.00.

Incorporators:  
 Herbert F. Windsor ..... Riverside, Ill.  
 Henry H. Windsor ..... Evanston, Ill.  
 Henry N. Bates ..... Boston, Mass.  
 Charles T. Bundy ..... Eau Claire, Wis.  
 L. C. Church ..... Walworth, Wis.  
 Filed Jan. 27, 1899.

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**THE UNION CONSTRUCTION COMPANY.**

Capital Stock, \$10,000.00.

Incorporators:  
 Edward Friedman ..... Milwaukee, Wis.  
 Robert A. Gillette ..... Milwaukee, Wis.  
 Chas. T. McElroy ..... Milwaukee, Wis.  
 James T. Fitzsimmons ..... Milwaukee, Wis.  
 Charles Gillette ..... Wauwatosa, Wis.  
 Filed Feb. 17, 1900.

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**PESHIGO VALLEY RY. CO.**

Capital Stock, \$40,000.00.

Incorporators:  
 E. A. Miller ..... Clintonville, Wis.  
 Abraham Vanzile ..... Clintonville, Wis.  
 H. R. Miller ..... Clintonville, Wis.  
 W. W. Waite ..... Crandon, Wis.  
 A. E. Himky ..... Crandon, Wis.  
 Filed Feb. 23, 1900.

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*New Railway Organizations.*


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## BAYFIELD WESTERN RY.

Capital Stock, \$25,000.00.

Incorporators:  
 Ervin Leighy ..... Bayfield, Wis.  
 George B. Best ..... Bayfield, Wis.  
 Geo. A. Packard ..... Bayfield, Wis.  
 John Kranfelder ..... Bayfield, Wis.  
 Howard Benton ..... Washburn, Wis.  
 Filed April 1, 1900.

## MINERAL POINT &amp; NORTHERN RY. CO.

Capital Stock, \$100,000.00.

Incorporators:  
 Richard Kennedy ..... Highland, Wis.  
 Geo. O. Clinton ..... Joliet, Ill.  
 John H. Sontag ..... Chicago, Ill.  
 L. F. Dickason ..... Chicago, Ill.  
 Chas. W. McIlhon ..... Mineral Point, Wis.  
 Curtis W. Remy ..... Evanston, Ill.  
 Filed Oct. 17, 1899.

## WISCONSIN WESTERN RAILROAD.

Capital Stock, \$600,000.00.

Incorporators:  
 Horace A. J. Upham ..... Milwaukee, Wis.  
 Wm. E. Black ..... Milwaukee, Wis.  
 Wm. S. Fish ..... Milwaukee, Wis.  
 Chas. F. McClure ..... Milwaukee, Wis.  
 Chas. W. Morris ..... Milwaukee, Wis.  
 Edward J. Paul ..... Milwaukee, Wis.  
 Henry J. Drappers ..... Milwaukee, Wis.  
 Filed Nov. 21, 1899.

## THE LAKE SUPERIOR &amp; MENOMONIE VALLEY RY.

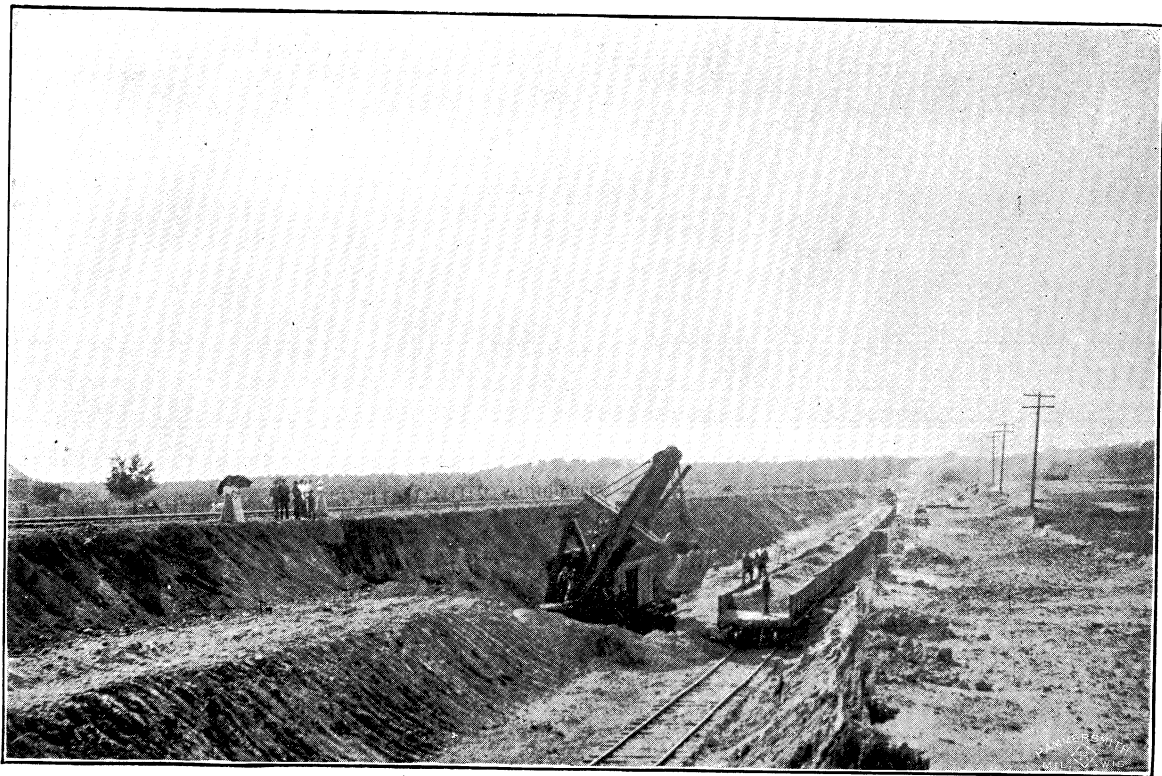
Capital Stock, \$100,000.00.

Incorporators:  
 B. B. Blake ..... Racine, Wis.  
 T. A. Charron ..... Rice Lake, Wis.  
 P. M. Parker ..... Rice Lake, Wis.  
 M. P. Barry ..... Rice Lake, Wis.  
 Filed Dec. 26, 1900.

## CHIPPEWA VALLEY &amp; NORTHERN RY. CO.

Capital Stock, \$150,000.00.

Incorporators:  
 Daniel J. Arpin ..... Grand Rapids, Wis.  
 Edward P. Arpin ..... Grand Rapids, Wis.  
 Arthur M. Arpin ..... Grand Rapids, Wis.  
 Joseph J. Arpin ..... Grand Rapids, Wis.  
 W. P. McMillan ..... Frazee, Minn.  
 Filed Feb. 17, 1900.



WISCONSIN CENTRAL RAILWAY.—GRADE REDUCTION.





*New Railway Organizations.*

## JANESVILLE &amp; SOUTHEASTERN RY. CO.

Capital Stock, \$2,000,000.00.

## Incorporators:

Peter H. Meyers .....	Milwaukee, Wis.
Chas. H. Van Alstine .....	Milwaukee, Wis.
Elsie W. Adams .....	Milwaukee, Wis.
Henry R. Williams .....	Chicago, Ill.
Benj. G. Lennox .....	Chicago, Ill.
Frederick G. Ranney .....	Chicago, Ill.
Burton Hansen .....	Chicago, Ill.

Filed March 1, 1900.

## BAYFIELD, SUPERIOR &amp; MINNEAPOLIS RY. CO.

Capital Stock, \$100,000.00.

## Incorporators:

John A. Rice .....	Merton, Wis.
John L. Lamb .....	Bayfield, Wis.
Harry Whigham .....	Raton, New Mexico
Geo. Lines .....	Milwaukee, Wis.
Geo. A. West .....	Milwaukee, Wis.

Filed March 14, 1900.

## ST. CROIX SHORT LINE RY. CO.

Capital Stock, \$100,000.00.

## Incorporators:

A. L. Sanborn .....	Madison, Wis.
F. C. Ellis .....	Madison, Wis.
W. E. Fagg .....	Madison, Wis.
L. U. Claude .....	Madison, Wis.
E. F. Starke .....	Madison, Wis.

Filed March 23, 1900.

## SUPERIOR, BALSAM LAKE &amp; SOUTHERN RY. CO.

Capital Stock, \$100,000.00.

## Incorporators:

John A. Savage .....	Fau Claire, Wis.
R. F. Little .....	Richardson, Wis.
J. W. Park .....	Balsam Lake, Wis.
Warren Tuttle .....	Balsam Lake, Wis.
E. W. Averman .....	Balsam Lake, Wis.
W. W. Seery .....	Balsam Lake, Wis.
Louis Lund .....	Clam Falls, Wis.
A. E. Skidmore .....	Clam Falls, Wis.
I. Seery .....	St. Croix Falls, Wis.
P. Nelson .....	Milltown, Wis.
M. C. Pederson .....	Luck, Wis.
A. L. Wells .....	Clear Lake, Wis.
C. W. Ward .....	Clear Lake, Wis.
Joseph Crane .....	Bunyan, Wis.

Filed April 14, 1900.

## SUPERIOR &amp; ST. CROIX FALLS RY. CO.

Capital Stock, \$25,000.00.

## Incorporators:

F. A. Ross .....	West Superior, Wis.
W. D. Duyer .....	West Superior, Wis.
James R. Hile .....	West Superior, Wis.
R. I. Tipton .....	West Superior, Wis.
L. J. Hunt .....	West Superior, Wis.

Filed April 25, 1900.

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*New Railway Organizations.*


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## LAKE SHORE &amp; ALLOUEZ R. R. CO.

Capital Stock, \$25,000.00.

Incorporators:

A. E. Gilbert .....	Red Cliff, Wis.
F. H. De Groat .....	West Superior, Wis.
C. A. Chase .....	West Superior, Wis.
J. P. McLean .....	West Superior, Wis.
F. H. Belger .....	West Superior, Wis.

Filed May 25, 1900.

## PRINCETON &amp; NORTHWESTERN RY. CO.

Capital Stock, \$25,000.00.

Incorporators:

Marvin Hughitt .....	Chicago, Ill.
J. M. Whiteman .....	Chicago, Ill.
M. M. Kirkman .....	Chicago, Ill.
W. H. Stennet .....	Chicago, Ill.
J. B. Redfield .....	Chicago, Ill.
W. A. Gardner .....	Chicago, Ill.
Albert Keep .....	Lake Geneva, Wis.

Filed June 12, 1900.

## HILLSBORO &amp; EASTERN RY. CO.

Capital Stock, \$75,000.00.

Incorporators:

Smith H. Bracey .....	Chicago, Ill.
Wm. J. Abbey .....	Chicago, Ill.
Carl Stroever .....	Chicago, Ill.
Albret H. Smith .....	Elroy, Wis.
Edgar S. Willey .....	Elroy, Wis.

Filed June 28, 1900.

## PRINCETON &amp; WISCONSIN RIVER RAILROAD

Capital Stock, \$750,000.00.

Incorporators:

Roland A. Crandall .....	Chicago, Ill.
Robert Jones .....	Chicago, Ill.
Wm. H. Hopkins .....	Chicago, Ill.
Walter S. Syrett .....	Chicago, Ill.
John C. Hopkins .....	Chicago, Ill.

Filed July 3, 1900.

## THE CRANDON RAILROAD CO.

Capital Stock, \$55,000.00.

Incorporators:

M. D. Kelth .....	New London, Wis.
Nellie E. Kelth .....	New London, Wis.
J. L. Haile .....	New London, Wis.
F. C. Weed .....	New London, Wis.
H. F. Landeck .....	Milwaukee, Wis.

Filed August 13, 1900.

*New Railway Organizations.*

MILWAUKEE, BERLIN & NORTHERN RAILROAD CO.

Capital Stock, \$100,000.00.

Incorporators:  
 Llewellyn Graff ..... Chicago, Ill.  
 Hoiger Rommerdale ..... Chicago, Ill.  
 John S. Carter ..... Chicago, Ill.  
 Chas. C. Bartlett ..... Chicago, Ill.  
 Christopher McLennen ..... Chicago, Ill.  
 Emanuel Hogenson ..... Chicago, Ill.  
 Willis W. Cooper ..... Kenosha, Wis.  
 Filed Oct. 11, 1900.

THE WISCONSIN MIDLAND RAILROAD CO.

Capital Stock, \$25,000.00.

Incorporators:  
 Wm. C. Lawson ..... Chicago, Ill.  
 Chas. C. Pierce ..... Chicago, Ill.  
 A. L. Hutchinson ..... Weyauwega, Wis.  
 W. W. Weed ..... Weyauwega, Wis.  
 E. H. Jones ..... Weyauwega, Wis.  
 Filed Nov. 2, 1900.

ANTIGO & NORTHWESTERN RY. CO.

Capital Stock, \$10,000.00.

Incorporators:  
 Albert Keep ..... Lake Geneva, Wis.  
 M. Hughitt ..... Chicago, Ill.  
 J. M. Whitman ..... Chicago, Ill.  
 W. A. Gardner ..... Chicago, Ill.  
 J. B. Redfield ..... Chicago, Ill.  
 M. M. Kirkman ..... Evanston, Wis.  
 W. H. Stenneff ..... Oak Park, Ill.  
 Filed Dec. 5, 1900.

HAWTHORNE, NEBAGAMON & SUPERIOR RAILWAY CO

Capital Stock, \$50,000.00.

Incorporators:  
 F. Weyerhauser ..... St. Paul, Minn.  
 Edward Rutledge ..... Chippewa Falls, Wis.  
 E. L. Ainsworth ..... Chippewa Falls, Wis.  
 William Irvine ..... Chippewa Falls, Wis.  
 John P. Weyerhauser ..... Lake Nebagamon, Wis.  
 Filed Dec. 7, 1900.

*Railroad Commissioners' Convention.*

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NATIONAL CONVENTION OF STATE RAILROAD COMMISSIONERS.

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I have had the honor and pleasure of attending on August 10 to 14, 1899, and May 28-31, 1900, with like officers from nearly every state in the Union, and the Interstate Commerce Commission at Denver, Colorado, 1899, the eleventh, and at Milwaukee, 1900, the twelfth annual convention of railroad commissioners.

The papers presented by the delegates and men prominent in state and national affairs dealing with several phases of the railroad problem, and the discussion by delegates of the matter thus presented are of incalculable benefit to those who have been entrusted in the several states with the duty and responsibility of enforcing laws for the proper control of transportation companies.

The city of Milwaukee was a candidate before the Denver convention for the annual meeting of that body in 1900.

Through the help of W. G. King, A. L. Severance, F. J. Matchette and T. J. Sullivan of the Business Men's League of Milwaukee, we succeeded in getting the convention for Milwaukee in 1900. Among the addresses delivered before the Denver convention of national railroad commissioners was the following paper by the commissioner of Wisconsin:

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*Railroad Commissioners' Convention.*

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## FIRST CHARTER, ETC.

Railroads are the great civilizers of the world. They are potent factors of settlement and enterprise, and in no state of the union can this be better exemplified than in Wisconsin.

During the territorial period, several roads were given charters, but nothing was done in the way of actual building for several years. In fact, it was not until the territory had become a state that the iron horse was a thing of reality. One must conclude from the early history of the state and territory, that people were much more adverse in early days to granting charters to railroads, than they are at the present time. In 1846 four bills were introduced into the territorial legislature, granting charters to as many railroads, all starting from points on Lake Michigan, running west; the objective point in each case being the Mississippi river. These bills met with determined opposition, and passage failed. The people seemingly preferring the building of state wagon roads. Much interest was manifested in the fight, and the Galena Gazette, a paper which was strongly against the project, remarked that "the only points on Lake Michigan and the Mississippi river to be connected by railroad within the next fifty years, were Chicago and Galena." In 1847, after much labor, and in the face of determined opposition, a charter was granted to the Milwaukee & Waukesha Railroad, by a majority of one vote. In 1848, the charter was amended, extending the lines to the "Father of Waters," and in 1850, ten miles of road were completed. This branch of road changed hands several times, and is at present a part of the Chicago, Milwaukee & St. Paul system.

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*Railroad Commissioners' Convention.*

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## PROGRESS OF RAILROAD BUILDING.

In 1864, sixteen years after the state was admitted into the Union, railroad mileage had increased to 1,030 miles, and embraced two lines from Lake Michigan to the Mississippi river, thus in one-third of fifty years the prophesy made in the Galena Gazette, was proven false. Nothing was done in 1865, '66, and '67; the mileage remained unchanged. A survey of the railroad map at this time is interesting, at least to one interested in the Badger state. The work of railroad construction had been confined entirely to the southern portion of the state. The most northern point reached being Green Bay, on the extreme east of the state, and Tomah on the west; less than one-fourth of the area had been reached. The vast pine forests of the north, and fertile valleys of the central part of the state were in an undeveloped condition. 1868 was the year in which railroad building was boomed. While in fact only 60 miles were completed, companies were formed, and the great iron roadways that now connect the northern and central portion of the state were projected and the real start made, which gives Wisconsin today its 7,000 miles of iron road, and places it eleventh in the states of the Union in railroad mileage.

The succeeding years of '70, '71, '72 and '73 bore fruit, and the energy and enterprise begun in '67, resulted in the building and equipment of 1,238 miles of road. The most of this was extensions in the northern part of the state, all pointing to the Wisconsin lake ports, Ashland and Superior.

The hard times of '74, 5, 6 and 7 caused a halt, and only 329 miles were completed. From '78 to '89 inclusive, operation began, and 2,885 miles were added, being an average of 240 miles per year. From '89 to the present time, mileage has been added at the rate of from 75 to 200 miles each

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*Railroad Commissioners' Convention.*

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year, and today Wisconsin has in all 7,000 miles of main line railroad, and one may start from Lake Michigan and reach the Mississippi river by going over any of the nine routes across the state from east to west. One wishing to go north may choose from any of the eight routes, and enjoy the ride. Again, is recalled to mind the statement in '47 of the Galena Gazette. Within fifty years we find nine railroad routes were established where that paper predicted none would exist.

## SYSTEMS AND MILEAGE.

There are in Wisconsin today forty-six lines of railroads, making reports, embraced in forty-two systems. The business of the state is done on the seven great systems, as follows: C. M. & St. P., with 1,650 miles; C. & N. W., 1,623 miles; Wisconsin Central lines, 817 miles; Chicago, St. Paul, Minneapolis and Omaha, 620 miles; Soo lines, 271 miles; Green Bay & Western, 225 miles; Chicago, Burlington & Northern, 222 miles; leaving thirty-five small roads with a total mileage of 856.

From 1847 up to 1860, a period of thirteen years, the mileage was 880; from '61 to '70 were added 406 miles; from '71 to '80 were added 1,834 miles; from '81 to '90 were added 2,351 miles; from '91 to '99 were added 813 miles; since 1847 more than 350 railroads have been organized in Wisconsin.

Originators were evidently more numerous than promoters or builders.

## VALUE AND EARNINGS.

The roads of Wisconsin make report each year to the railroad commissioner of the state, which shows the cost of the road from books of the various companies. These reports are all made under oath, and there is no reason to believe why they are not true. They contain what is said



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*Railroad Commissioners' Convention.*

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to be the actual cost of the roads. This cost is ascertained in two ways: first—from the actual cost, as shown by the books of the company; and secondly—cost figured on the proportion of the entire system divided by the number of miles. Roads making reports under number two are those whose systems extend into several states of the union, and are, of course, the great railroad systems of Wisconsin. Taking the reports made as a basis, the value of the railroad property proper, in the state, is about \$300,000,000. There is no doubt but what the roads of the state could be built and equipped at the present time for about 25 per cent. less than this amount, or for \$225,000,000, and I think there is no doubt that the roads when originally built and equipped, did not actually cost more than this amount, if we deduct the large sums of money that has found its way into the hands of the promoter or middleman. What the actual value of the railroads in the state is, is a question that I cannot answer. In fact, this same question was discussed pro and con during the last session of our legislature by prominent railroad men, who were seeking to place as low a value on the property as possible, and some members of the legislature, who sought to make the value as high as possible. I will not pretend to say whether the value of the railroad should be based on their net earnings or not. This idea was in favor with some, but as several roads report each year a deficit, those in favor of this way of computing the value were at a loss, and in our state the question is yet unsettled.

Thirty-four roads in the state, representing 6,000 miles, in reports for the year ending December 31, 1898, show gross earnings to the amount of \$85,191,000, net earnings \$12,225,000; if the figures are correct this would give a net earning of the thirty-four roads of more than 5½ per cent. on what is agreed upon by most people as a fair value of the roads, and about 4½ per cent. on the cost of the roads,

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*Railroad Commissioners' Convention.*

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as reported. This is considered an excellent showing, but if one will investigate the financial standing of some of the systems, it will be found that they are "gilt edge," and are paying from 8 to 10 per cent. on the reported cost. This would be considered a good thing by anyone seeking an investment for money at the present time.

## TAXATION.

Nothing pertaining to railroads has caused more discussion than the question of taxation. How should railroads be taxed, and what should be the basis of taxation?

Last winter in our state, a determined effort was made to change the method of taxation, also to increase the amount of taxes. I might say here that I have used the word "tax," but Wisconsin courts do not recognize this word in the sense that I have used it, under the present law. The proper word being license.

For three or four years the several roads in the state were assessed as other property, and paid taxes the same as an owner of private property. In 1854 the legislature changed the system, and the railroads under the law were compelled to make a report of gross earnings to the state treasurer each year, and also to pay as a license, which should be in lieu of all taxes, 1 per cent. of their gross earnings. In 1860 this law was modified so that companies must ask for a license, and procure the same, before operating a road. In 1862 the law remained practically the same, except that the per cent. of licenses was very materially increased, being raised to 3 per cent. In 1874 there was a further increase to 4 per cent.; in 1876 another departure was made, and the roads were graded, and paid a license fee based upon the gross earnings per mile, as follows: On all roads whose gross earnings equalled or exceeded \$3,000 per mile, 4 per cent.; on all roads whose gross

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*Railroad Commissioners' Convention.*

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earnings were \$1,500 per mile and less than \$3,000, \$5.00 per mile, and 2 per cent. on all earnings in excess of \$1,500 per mile; on all roads whose gross earnings were less than \$1,500 per mile, \$5.00 per mile.

In 1897 a further change was made, and five grades were established as follows: on roads whose gross earnings were \$3,000 per mile, or over, 4 per cent.; on roads whose gross earnings were \$2,500 per mile and less than \$3,000,  $3\frac{1}{2}$  per cent.; on roads whose gross earnings were \$2,000 per mile and less than \$2,500, 3 per cent.; on roads whose gross earnings were \$1,500, and less than \$2,000 \$5.00 per mile and  $2\frac{1}{2}$  per cent.; on all earnings over \$1,500 per mile; on all other roads \$5.00 per mile. An effort to further increase the license fee was defeated in 1899. This effort brought forth much discussion and talk in the legislature.

The income to the state from the railroad licenses has increased somewhat during the past ten years, and for the year ending December 31st, 1898, the treasury was fattened to the extent of over \$1,300,000.00 from this source.

#### GENERAL LAWS CONCERNING RAILROADS.

When railroads were first organized of course the first thing to be done was to prescribe by law certain rules and regulations which should govern them. The question what powers the state should have over its creatures has been talked about, written about, and thought about ever since corporations existed. The laws of Wisconsin have never, except for a short period of time, been stringent against the railroad corporations.

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*Railroad Commissioners' Convention.*

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The National Convention of Railroad Commissioners convened at Milwaukee May 28, 1900, and finished its labors on the 31st of May. The attendance was large and many very excellent papers were read and the standing committees' reports were prepared with great care. The report of the Committee of Legislation and the report of the Committee on Uniform Classification I think are of sufficient public interest to be reproduced here.

Report of the Committee on Legislation was as follows:

REPORT OF THE COMMITTEE ON LEGISLATION.

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GENTLEMEN: Your committee believes that the Federal regulation of interstate railroad transportation is the most appropriate subject for consideration in this report. It would be entirely suitable, in a convention composed for the most part of State railroad commissioners, to discuss various topics of State legislation, such as railway construction and physical operation, railway negligence, railway taxation, and the like, concerning which very much might be profitably said. But these and many other transportation questions are of minor importance compared with the pending problem of perfecting a scheme of national laws whereby the great railroad systems of the country shall be brought under that degree of public control which the interests of the whole people increasingly require.

It needs no argument or citation of judicial authority to prove that railroads are public highways dedicated to public use; that the construction of these highways upon private property, with or without the consent of the owners thereof, received legislative sanction solely on the score of public necessity; that, while the ownership of such highways is essentially private, the service rendered by them is public to the last detail that the instrumentality through which rail transportation is effected is property, but that the transportation itself is a function of government, to be exercised without injury to any individual or locality.

All railroad charters are granted and all judicial declarations upon the subject are based upon these fundamental propositions. This be-

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*Railroad Commissioners' Convention.*

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ing so, it is also well settled that the legislative branch of government may enact all such laws for the regulation of interstate commerce by railroad as are deemed necessary to the protection of those who are dependent upon these agencies of trade and communication; subject, however, to the constitutional limitations that owners of railroads shall not be deprived of their property without due process of law, and that they shall not be denied the equal protection of the laws.

We have, then, this situation: Transportation is not a commodity to be made the subject of bargain and sale, but a public service which every person may enjoy in the exercise of his political rights. The Congress has the fullest authority under the Constitution to regulate transportation between the different States. The railroads are entitled, under the same organic law, to retain full possession of their properties, and this includes the right to exact reasonable compensation for services required of them by the public. The carriers are protected against injustice by the Constitution, but the public is not so protected unless and until Congress shall enact adequate laws in that behalf under the powers granted by the Constitution.

It is true that the common law contains a principle, dating back to the time when the duties of common carriers were first judicially declared, that no transportation charge shall exceed what is reasonable, and that the courts will award damages for any unreasonable charge; and it may be claimed that this right of recovery for unreasonable exactions by the carrier fully equals the constitutional right of the carrier to obtain reasonable compensation for its services. Theoretically this is so, but practically it is not so. The proof necessary to establish the unreasonableness of a rate "in and of itself" is rarely, if ever, obtainable, and if found would generally be excluded under the technical rules of evidence applied in courts of law where damage cases are brought to trial. It is asserted with confidence that the law reports show no case of a recovery for damages resulting from a transportation rate found unreasonable in and of itself. The law books do contain some cases where damages have been recovered under the common law because the rate charged the suitor was higher than that accepted from another shipper under like circumstances, but the weight of authority is to the effect that one who has paid no more than a reasonable charge can not maintain an action against the carrier by showing that another has paid less for the same service. Moreover, the common law affords no remedy for discrimination against a person in one locality through favor granted to a person in another locality, or because of preference to one town or city over another town or city.

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*Railroad Commissioners' Convention.*

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Still another consideration is that the person who actually pays the freight has generally no real interest in recovering damages for an unreasonable rate. As has frequently been shown, the person really injured is most often the producer, the retail dealer, or the consumer. This leads to a further observation showing the real advantage of the carrier in its relation to the people. The remedy against the carrier for an unreasonable charge can only be applied after the transportation charge has been paid—after the wrong has been accomplished. The unreasonable part of the charge paid may, moreover, be too small to go to law about, since an aggrieved shipper can not ordinarily afford to pay high rates until his damages have become sufficient in amount to warrant the bringing of a suit. On the other hand, the carrier can not be compelled to establish and charge a rate of compensation fixed by public authority until that charge has been found reasonable by the courts, and the suit, thus instituted by the carrier may progress from the first to the highest tribunal and drag along through a period of years before final decision is rendered. In such case enforcement of the prescribed rate is enjoined while the controversy is pending. Practically, therefore, the common-law rights of the public in respect of unreasonable rates, are of little value.

It should also be observed that while the carrier is protected by the Constitution from unreasonably low rates the patrons of the carrier can not have equal protection provided for them by any legislative enactment. The legislature can fix the rates or authorize them to be fixed, but it is for the judicial branch of the Government to enforce them, and shippers and travelers must pay the charges fixed by the carrier during the time consumed in determining the question of their reasonableness. The judicial procedure is necessarily slow, and the delays must always be very considerable. An illustration is that rates fixed by the Nebraska legislature in 1893 were declared unreasonable to the carrier in 1898, and the decision of the supreme court in that year referred back to the conditions existing in 1893, leaving the question still open whether the rates so prescribed were not reasonable to the carrier in 1898.

Enjoying this most effective protection and resulting advantage, a large and influential number of carriers are nevertheless reluctant to concede that any Federal regulation of railways, in addition to that now in force, is just or fair or necessary to the protection of public interests. These carriers have evidently assumed this attitude on account of their corporate interests and without reference to the broader considerations of public duty. That this should be so is the more to

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*Railroad Commissioners' Convention.*

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be deplored because of the increased irritation and antagonism which such a course is calculated to create in the minds of railway patrons and the people generally. It is specially important at this time when unification of financial interests and coincident advances in rates, through the concerted action of carriers in great territorial divisions of the country, have induced the belief that vast railroad combinations are about to be effected besides which the greatest industrial trust will appear small and insignificant.

It is doubtless the case that resistance to present efforts for more effective regulation results largely from the fact that during a period of nearly sixty years of railroad construction and operation no Federal control of railways was attempted. Notwithstanding the conceded principle that transportation is a public service and not a private business, the railroad companies were left wholly unrestrained as to interstate traffic up to the year 1887; and the feeble and generally unenforceable provisions of the law then passed were not calculated to eradicate railway views and railway conduct which had obtained for two generations. Clearly the way, and the only practicable way, to change all this, to secure general and constant recognition of the idea that transportation charges are in the nature of a tax which must be laid with full regard to justice and equality toward those who pay it, to make reasonable rates and relatively just rates the rule, and provide for the summary correction of unreasonable and discriminating charges is to amend the act to regulate commerce in the respects wherein it has been found defective. What these defects are, how unavailing the attempts to regulate transportation under the present law have been, is clearly set forth by the Commission in its recent reports to the Congress. The present situation is stated none too strongly by the Commission in the opening chapter of its annual report for the year 1899, which here follows:

"In its last annual report the Commission stated that attention had been called in previous reports to the vital respects in which the act to regulate commerce has proved defective and inadequate; that the present law can not be properly enforced, and that until further legislation is provided the best efforts at regulation must be feeble and disappointing. The requests of the Commission for needful amendments have been supported by petitions and memorials from agricultural, manufacturing, and commercial interests throughout the country; yet not a line of the statute has been changed and none of the burdensome conditions which call for relief have been removed or modified. The reasons for the failure of the law to accomplish the purposes for

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*Railroad Commissioners' Convention.*

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which it was enacted have been so frequently and fully set forth that repetition can not add to their force or make them better understood. It is sufficient to say that the existing situation and the developments of the past year render more imperative than ever before the necessity for speedy and suitable legislation. We therefore renew the recommendations heretofore made, and earnestly urge their early consideration and adoption.

"Many persons do not understand the precise nature of the amendments required for enforcing the substantive provisions of the act, while others have apparently reached the belief that no scheme of regulation short of Government ownership and operation can be made effective. Nevertheless, it is perhaps safe to say that nine-tenths of the people do know that any railroad company can charge for its service whatever it pleases and as much as it pleases, without any real power in this Commission, or any other tribunal or court, to limit the amount of such charge for the future when complaint is made by an aggrieved shipper, and that they are substantially of one mind in desiring that this and other defects in the statute be promptly remedied. It is also true that shippers generally have been practically unanimous in favor of a single classification of freights, one that will be uniform for all roads and all sections of the country, and reasonably stable when established.

"The general public dissatisfaction with the present statute has frequently been expressed in resolutions adopted by various national organizations composed of business men, manufacturers, and farmers, and by the national convention of railroad commissioners. At a conference held in Chicago in November last, and attended by representatives from a number of national associations of manufacturers, merchants, millers, and other branches of trade, a bill embracing the more important amendments which have been recommended by this Commission was, after discussion of each feature, formally approved as the measure which would best meet the requirements of business and commercial interests. This bill has been introduced in the Senate by Senator Cullom, known as Senate bill No. 1439, and will be found in Appendix C to this report.

"Such a movement on the part of associated producing and shipping interests representing, it is said, an amount of invested capital exceeding the aggregate capitalization of all the railways is in itself a clear indication of the popular demand. The query suggests itself whether continued failure to perfect the regulating statute on reasonable lines will not soon result in an irresistible demand for the most radical and drastic legislation.



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*Railroad Commissioners' Convention.*

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"It is a matter of common knowledge that vast schemes of railway control are now in process of consummation and that the competition of rival lines is to be restrained by these combinations. While this movement has not yet found full expression in the actual consolidation of railroad corporations, enough has transpired to disclose a unification of financial interests which will dominate the management and harmonize the operations of lines heretofore independent and competitive. This is today the most noticeable and important feature of the railway situation. If the plans already foreshadowed are brought to effective results and others of similar scope are carried to execution there will be a vast centralization of railroad properties, with all the power involved in such far-reaching combinations, yet uncontrolled by any public authority which can be efficiently exerted. The restraints of competition upon excessive and unjust rates will in this way be avoided, and whatever evils may result will be remediless under existing laws.

"Among the noteworthy facts of general interest is the remarkable increase during the year in the volume of railroad business. This increase has been so great, and to an extent so unexpected, that many carriers were not prepared for the unusual demands upon their facilities. As a rule their equipment has been taxed to full capacity and often found inadequate for the service required. This, of course, has brought a substantial addition to the gross and net revenues of nearly every road in the country and greatly reduced the number of railway failures. It has also contributed to the improved observance of published rates, as is stated in another connection, and diminished the frequency of those practices which are made misdemeanors by the statute.

"Coincident with these schemes of unified control, and while this exceptional movement of traffic continues, the carriers operating throughout an extensive and important territory have recently made substantial, and in many cases very large, increases in their scale of charges. These advances in rates have been mainly effected by concerted and agreed changes in the classification of freight articles by roads, both connecting and competing, which use the same classification and make the same a part of the tariffs filed by them under the law. Numerous articles have been taken from the class in which they were formerly placed and put in a higher class, to which a higher rate is applied, and many articles heretofore on the commodity list have been included in the classified traffic, with the result of materially increasing the charges imposed thereon. Advances of rates in this manner have been made on hundreds of articles, many of which are neces-

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*Railroad Commissioners' Convention.*

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saries in general use and constantly moving from place to place in the process of distribution.

"It is not intended to intimate that these advanced rates are unlawful, and no opinion is expressed as to their actual or relative reasonableness. But the fact that such extensive increases in railroad charges have been brought about by the method described must be of significant import and furnish a weighty argument in favor of measures which will be effective to secure compliance with the primary requirements of the act. These advances in rates have been agreed upon by the carriers without opportunity, as a rule, for shippers, dealers, or consumers to be heard. It is inevitable that changes so numerous and important, affecting public interests throughout so large a part of the country, will give rise to many complaints, both in respect of the reasonableness of particular rates complained of and alleged discriminations in the relation of rates. Reference is elsewhere made to the nature and number of complaints and protests on account of these changes in classification and the consequent increase of rates and readjustment of rate relations.

"Whatever may be the merits of these complaints, the parties making them are recognized by the law as having rights involved in the question of the reasonableness and justice of the charges which they are required to pay. But so long as the Congress sees fit to leave carriers practically free to make and apply such rates as they choose, whether acting independently or by concert, and whether competing or otherwise, and there is at the same time no adequate provision for determining whether such rates are just and reasonable, or for preventing the exaction of those found unjust and unreasonable, although declared by the statute to be unlawful, the injustice which may result must be without available redress."

The amendments now pending in Congress have been drafted in the light of thirteen years' experience in attempting to enforce the present statute, and it is believed that they would afford a prompt and effective means of redress to aggrieved shippers and prejudiced localities, while preserving to the carriers ample safeguards against arbitrary or oppressive exercise of authority.

It is also probable that the act, under the amendments to the sixth and tenth sections, would operate in considerable measure to prevent the frequent changes in tariff rates and the secret rate-cutting practices which have been so common of recent years, and which have resulted so disastrously to the smaller producers and dealers.

It must be plain, however, to those who have studied the changes and

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*Railroad Commissioners' Convention.*

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developments in railway transportation, that something besides remedies for rate injustice and prohibition against departures from published rates is indispensable to any effective scheme of national regulation, if the doctrine that transportation is a public service and not a marketable commodity is really to be enforced. If the carriers are to so conduct their operations, that they will actually and at all times transport the occasional carload for the small manufacturer or dealer at precisely the same rates as the daily train load of the same traffic for the large producer, they must be authorized to take measures which will enable them to practice such neutrality. Impartial treatment of shippers, large and small, would be an accomplished fact under Government ownership. It would likewise be secured with comparative ease if all of our railways were controlled and operated by a single corporation.

But this beneficent result can not be realized while the railways, under hundreds of different managements, are required by Federal statute to maintain a rate competition with each other which is entirely the same in tendency and effect as the competition between rival manufacturers who are continually overproducing the commodity in which they deal and must sell what they produce or face inevitable ruin. To require a railway company to give rates which are reasonable, absolutely and relatively, to all shippers, all localities, and all the thousands of articles offered for carriage; to give the small town served only by its own line rates which are just as compared with those it gives to a large city where it competes with another line, and perhaps with several lines, and at the same time to forbid it to agree with rival roads upon a fair adjustment of competitive charges, is to turn that line into an open or secret bidder at the lowest rates for the traffic it must obtain, and to either diminish its revenues, often to the point of insolvency, or compel it to become a frequent breaker of the law regardless of legal consequences. In that situation competing carriers are simply forced to court the custom of those business corporations and combinations from which large quantities of traffic can be obtained; and when, as has often been said, railway companies give the shipping agent of a trust a blank tariff sheet upon which to write such rates for itself, or for the smaller shippers, as the trust may for the time being desire, they are merely submitting to conditions which the people through their representatives in Congress have mistakenly imposed.

Let us now consider how the public is affected. Suppose that Congress has passed the pending amendments and has kept in force the prohibitions against agreements between carriers for the adjustment of competitive rates. A carrier to an Atlantic seaport sees fit to reduce

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*Railroad Commissioners' Convention.*

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the export rate on grain 5 cents a hundred pounds. What is the result. Within a few days the rate on grain from every shipping point in the United States to every Atlantic and Gulf grain-exporting port in the United States must be reduced 5 cents per hundred pounds, because the first reduction affects the price correspondingly in the foreign market. Does the rate on domestic shipments fall in like proportion? No; or, at least, not for a considerable time, because the competition for domestic grain shipments is confined to the carriers reaching particular seaports, while the competition for foreign shipments affects all the grain-carrying roads. It thereupon follows that immense quantities of grain are shipped abroad, and grain for domestic consumption is obtainable only at a higher price, and this affects the miller who exports flour, the miller who supplies the domestic market, and the entire consuming population of the United States. The farmer rarely gets any benefit from the increased market price so brought about, for it usually happens that he has sold or agreed to sell his grain before the cut in the export rate.

Again, it is well known that a change in rates to one central locality often requires changes in rates to hundreds of other points, and even to localities far removed from the point originally affected. It has happened that reducing the rate from one point to Atlanta has not only operated to reduce the rate from all other markets to Atlanta, from the East and from the West, but to cause reductions in rates to all other points in Southern territory; and then has followed lower rates to places in the Southwest and finally to the West, and from the West to intermediate localities. And so it has come to be almost an axiom in transportation circles that cutting the rate to a point like Atlanta will ultimately affect the rate to a point like Chicago.

Within a year a water and rail line from New York, via Galveston, materially reduced its rates to Kansas City. It soon followed that corresponding reductions were forced to every point on the Missouri River, and of course the Mississippi River cities came forward with protests and appeals for like changes in order that their competition with the Missouri River points might be carried on without actual loss.

These examples might be multiplied indefinitely. Of course, such rate disturbances always favor those with large capital and practically shut out of business competition the multitude of small dealers. They also operate to augment the list of business failures.

It follows that relatively just charges to competing shippers at different localities can not be secured and maintained by any system of Government control which does not contemplate the maintenance of just rate relations through agreements between the carriers themselves,

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*Railroad Commissioners' Convention.*

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and that the prohibition of such agreements will to a great extent inevitably defeat many of the most important and beneficent purposes of public regulation.

A railroad is essentially a chartered monopoly, and its character as such should be recognized in the theory and aims of legislation. It is divested of that character in large measure when it is compelled to get traffic by the methods of competition in private business. Nor does it meet the case to say that the law requires the carrier to adhere to its published tariff, for the law in that respect will certainly be broken if traffic can not be otherwise secured; and the few convictions which may occur, in comparison with the number of offenses, will come to be regarded merely as "unfortunate instances," not even indicating the probability of punishment for such wrong-doing. Neither does it meet the case to say that the law requires tariff rates to be reasonable and just to persons and places. What the law provides is one thing, and what is done under that law is quite another thing. Departures from the published rates are punishable as crimes, and for failure to publish reasonable and just rates remedies are provided. If you can convict for the one, or have a remedy to apply to the other, you punish or cure in some individual cases, but neither such punishment nor such remedy can serve to abolish secret rate cutting as a practice or make unreasonable or unjust rates of rare occurrence.

As before stated, the pending amendments to the law will undoubtedly serve to improve the rate situation and make the work of regulation more easy and more effective than at present; but the real solution of the difficulty lies in so rearranging transportation conditions through appropriate legislation that secret practices will wholly disappear, and reasonable, just, and stable rates become the general rule and continue indefinitely through the aid of the statute itself, and without the necessity of applying a remedy in each particular case or visiting punishment upon delinquent railway companies or their agents. The same reason which is advanced in favor of giving the Commission authority to prescribe the rate for the future in a given case, namely, to prevent a repetition of the wrong, applies generally to the whole policy of legislation. Just as the population of a city is protected by law from contamination through the isolation of those afflicted with contagious diseases, so must the entire public be protected by the operation of law from the spread of transportation evils.

Every aspect of the problem is simplified if we start from and adhere to the basic proposition that the railway performs a function of government in furnishing the public with transportation; that what the Government would rightfully do the railway should be required to do.

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*Railroad Commissioners' Convention.*

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and that some such protection as the Government would have in its own operation of the roads should be provided for the companies which now operate them. Amendments have been proposed in the direct interest of the public, but these amendments must necessarily fall short of their intended purpose if conditions are allowed to continue which preclude the railways from uniting to make them effective. However diverse or conflicting their corporate interests may be, it is plain that the railways of the United States should, to the fullest extent practicable, be regarded as a single transportation system so far as their duties to the public are concerned. To enable them to perform those duties with the best results to all the people, they must be permitted by law to enter into agreements with each other whereby the abuses arising from individual and competitive action may be prevented.

In no other way can the public service of the railways be exempted from the domination of great commercial combinations and placed in an attitude of complete neutrality between railway patrons. It may be said that consolidation of the roads under one ownership would serve the same purpose. This probably is so, but the serious evils which must arise from the absolute control by one corporation, or a few harmonious interests, of these great properties, which constitute the highways of our immense internal commerce, preclude acceptance of any such alternative. And yet the present reckless competition in rates is steadily working out its manifest end—the actual merger of all important lines into the fewest possible managements, and these again into the control of some central authority representing the aggregated financial interests.

In the report of the committee on legislation to the last convention it was said: "The last results of unrestricted competition and of progressive consolidation must necessarily be the same—monopoly. Promoting or fostering unrestricted competition compels consolidation as a protective measure, but restricting and regulating competition discourages and prevents consolidation."

The time has come when we must choose between these two alternatives—actual railway consolidation under the present laws or railway cooperation under a new law. Consolidation, which means all that unrestricted pooling can mean and all that the strongest combination can signify, is fast becoming an accomplished fact. Cooperation, with all requisite safeguards against its abuse, and under the efficient supervision of the Commission, is still a feasible and a most desirable recourse.

Your committee has endeavored to frame its report in accordance

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*Railroad Commissioners' Convention.*

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with ascertained conditions and conceded facts, and to avoid giving support to any theoretical view of railway management or regulation. This report, together with the following resolution, is respectfully submitted to the convention.

*Resolved*, That Senate bill No. 1439, known as the Cullom Bill, to amend the act to regulate commerce or a measure on substantially the same lines, should be promptly enacted, with such additions thereto as will authorize carriers subject to that act to make contracts with each other for the adjustment and maintenance of fair and reasonable rates and the proper division of earnings on competitive traffic, subject to the control and supervision of the Interstate Commerce Commission.

That copies of the foregoing report and of this resolution, duly certified by the secretary of the convention, be transmitted to the President of the Senate and the Speaker of the House of Representatives.

MARTIN A. KNOPP.

C. S. LAUMEISTER.

JOHN D. MILLER.

ISAAC B. BROWN.

L. N. TRAMMELL.

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The report of the Committee on Uniform Classification was as follows:

REPORT OF COMMITTEE ON UNIFORM CLASSIFICATION.

The question of uniform classification of freights throughout the United States has been under consideration heretofore by committees from this body. Their reports to the several conventions, so far as your committee can ascertain, have always been favorable to the establishment of such a classification. No considerable opposition to the establishment of such a classification has developed, and yet today the idea is as far as ever from realization.

Uniformity of classification implies simplicity and the absence of confusion, hence economy in both time and money in the handling of freights. There is no doubt that if a uniform classification could be put in force its benefits would be great, both to the railroads and the business public. At first glance it would seem strange that nothing has been accomplished toward this end; but, when thought is given to the subject, the reason is quite apparent. "What is everybody's business is

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*Railroad Commissioners' Convention.*

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nobody's business;" and accordingly each railroad company, each traffic association, each board of trade, and each railroad commission, while no doubt feeling the necessity for uniformity in classification of freight, has likewise felt the hopelessness of undertaking to bring about such unity of opinion among such widely divergent interests as would accomplish the desired result, especially so when each is fully occupied in working out problems more directly affecting itself and the interests specially committed to its care.

In our judgment the only way by which uniformity of classification can ever be secured is for the Federal Congress to authorize and require the Interstate Commerce Commission to compile and publish a classification which shall be applicable to all interstate shipments of freight in the United States. As a matter of convenience the different roads would naturally apply such classification to their interstate business as well, and even if they did not there is little doubt that the various State commissions which have published classifications would adopt that promulgated by the Interstate Commission, with the final result that its application would become universal in this country.

However much tariffs may vary in different sections of the country, all rates are based on classification. In the interchange of traffic between sections which employ different classifications it will be readily seen that discrepancies and mistakes must necessarily occur. It affords great latitude for unwarranted manipulation of rates by the unscrupulous from which the railways have suffered as severely as the public. Enforced uniformity in the classification would greatly simplify the entire transportation problem and would be a great advance in the direction of stability in freight rates.

This can never be accomplished except by a disinterested body, clothed with power not only to make but to enforce such a classification. Conflict of local and lack of general interest will always prevent the adoption of a uniform classification in the absence of a legal requirement to that end. But in our judgment a body of highly intelligent, disinterested, and experienced men, such as those who compose the Interstate Commerce Commission, could well be intrusted with the power to harmonize the conflicting interests of the different sections, and we doubt not they could justly and successfully work out this much-desired result. This power would not necessarily involve the making of rates. Given first a uniform classification, the various railways and railway associations could then promulgate their own tariffs as at present, fixing the rates to be charged upon the various classes embraced in that classification.



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*Railroad Commissioners' Convention.*

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Your committee is in thorough agreement with the views expressed by the Interstate Commerce Commission in the Eleventh Annual Report of that body, beginning on page 62. In that report the reasons which render uniformity in classification necessary are treated ably and in detail, and we are convinced that we can not do better than to recommend the introduction of a bill in the Federal Congress similar to that which was favorably passed upon by the Senate committee in the Fifty-fourth Congress, and which apparently failed of passage owing to the early termination of that Congress. Said bill was as follows:

A BILL directing the Interstate Commerce Commission to prepare and publish a classification of freight articles and rules, regulations, and conditions for freight transportation, to be known as the "national freight classification."

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress Assembled,* That the Interstate Commerce Commission be, and is hereby, authorized and required to prepare and publish, on or before the first day of ———, a classification of freight articles, and rules, regulations, and conditions for freight transportation, which shall be known as the "national freight classification."

That such national freight classification shall be published by the Interstate Commerce Commission by printing the same in pamphlet form, and by giving public notice thereof through general distribution in such manner as it may deem advisable.

During a period of three months immediately subsequent to the preparation of such classification, and at all times during the said period of three months, and always thereafter, the commission shall promptly hear the complaint of any carrier or shipper against such classification or any part thereof; and after hearing and investigation of any such complaint or complaints the commission shall have power to amend such classification for the purpose of removing any injustice thereby caused to carriers or shippers.

That at the expiration of said three months of publication the said classification and any amendments thereto which may have been made by the commission during such time shall be in effect, and together with any subsequent amendments thereof by the commission shall be observed and invariably applied to interstate freight transportation by all common carriers subject to said act to regulate commerce. Any failure on the part of any such common carrier to observe and apply such classification shall be punishable as a violation of the act to regulate commerce, approved February fourth, eighteen hundred

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*Railroad Commissioners' Convention.*

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and ninety-seven, and amendments thereof, under the provisions of section ten of said act.

The members of your committee, holding the views as above set out, respectfully recommend the following resolution for adoption by the convention:

*Resolved*, That this convention hereby respectfully requests that the Interstate Commerce Commission will have introduced at the present session of Congress a bill similar to that quoted in this report, or such other measure as may best serve the object sought to be attained, and that the railroad commissioners of the several States be, and are hereby, requested to cooperate in every practicable way, and use their best endeavors to bring to the support of said measure the Senators and Members of Congress of their several States.

For the committee.

SPENCER R. ATKINSON,  
*Chairman.*

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After the Convention adjourned the members were tendered and accepted a visit to Superior and other places in the state by the courtesy of the Chicago, Milwaukee & St. Ry. Co. and the Chicago & Northwestern Ry. Co.

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*Bridge Inspection.*

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## REPORT ON BRIDGE INSPECTION.

TO HON. GRAHAM L. RICE, *Railroad Commissioner of the State of Wisconsin:*

SIR: I have inspected bridges and various other structures appertaining to the railroads of the state of Wisconsin, as authorized by you, and beg leave to report as follows:

In making this inspection it has not been found to be practicable to inspect all structures, the time available being too short to do so, the structures inspected being representative ones, and a sufficient number of each class being inspected to show the condition of all bridges of the given kind and age. All of the more important structures were inspected.

The bridges to be inspected were selected from the Division Engineer's records of bridges and culverts in their respective districts. Other information, such as the age, present condition, repairs recommended, renewals contemplated, etc., has been secured in many instances in advance of inspection through the courtesy of the engineering department of the various roads. The information thus gained has not in any case served to make the inspection less thorough and complete.

This inspection covers the bridges on the Chicago and Northwestern Railway; the Chicago, St. Paul, Minneapolis and Omaha Railway; the Chicago, Milwaukee and St. Paul Railway and the Wisconsin Central Railway in the state of Wisconsin. On these railways all of the main lines were covered, and nearly all of the branch lines, only a few of the less important branch lines being omitted for the lack of time.

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*Bridge Inspection.*

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The inspection began on November 12th and was completed on December 12th in which time five hundred and twelve bridges of all kinds and five tunnels were inspected. The time allowed for the making of this report does not permit me to make the computations of the stresses in the trussed bridges which are necessary for a full, complete and definite report on such structures.

The bridges inspected are given in the accompanying tables under proper headings. They comprise all of the more important bridges on the several roads on which inspection of bridges was made in Wisconsin.

The general efficiency and reliable nature of the bridges in the state and the manifest desire of the officials of the various roads to continually raise their standards of excellence is a cause for congratulation to the people of the state. On all of the main lines the old bridges are being replaced by permanent structures which conform to the latest and best practice in bridge building. Some of the present standards will be considered more in detail in reviewing the inspection on the several roads.

In some instances defects have been noted that in the judgment of your engineer need attention at once. While in no case has a bridge been found to be in a positively dangerous condition, the inspection has revealed weaknesses that might develop very quickly into a positive menace to the public safety. In each case where such defect has been discovered, the attention of some official of the road who has the authority to order immediate repairs and renewals has been called to it.

All of the bridges which are built and maintained by the railway companies have been included, comprising the railroad bridges, overhead highway bridges and farm and road bridges on the right of way.

Less uniformity in the condition of the overhead highway bridges exists than in the case of other structures,

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*Bridge Inspection.*

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and it appears that the various officials have been as a rule somewhat less careful with these bridges than with the railway bridges. On some divisions, however, the overhead highway bridges have received especial attention and reflect credit upon the officials who have made very laudable efforts to make secure not only the safety but the convenience as well of persons traveling the highways which cross the railway.

The divisions of each railway will be considered separately.

CHICAGO & NORTHWESTERN RAILWAY.

The Chicago & Northwestern railway in the state of Wisconsin is divided for operating and maintenance purposes into five divisions. The inspection of bridges on these divisions will be reported as follows:

The *Wisconsin Division* comprises, the main line, from the state line on the south, north through Milwaukee and Fond du Lac to Green Bay; the principal branch lines are the old line, from Fond du Lac south to Sharon in the state, and the Sheboygan and Princeton lines.

The railroad bridges on the main line are first-class in every respect, Very heavy traffic goes over this line and during the last two years a great number of deck and through plate girder bridges have been put in on stone masonry piers and abutments. On the branch lines the traffic is lighter and fewer permanent improvements have been made: the bridges are well-kept and efficient in every way.

The main line of the *Ashland Division* extends from Milwaukee north to Monico Jc.; from Monico Jc. to Hurley it is known as the Rhinelander line; and from Hurley to Ashland, as the Ashland line. The principal branches are the Oshkosh branch, the Oconto branch, the Marshfield branch, the Wisconsin Northern branch and the Eagle River branch.

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*Bridge Inspection.*

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The bridges on this entire division are in very good repair and are evidently closely and regularly inspected. Several renewals were being made at the time of the inspection and more are contemplated this coming season. The Wisconsin Northern line is a new road, having been built in 1897 and 1898. The bridges are all in good condition. A computation of the stresses in some of the members of the iron bridges on the Marshfield line shows that the grade of engines now being run on the road stresses these bridges to the full limit for which they were designed. They are well preserved, however, and for the present traffic are entirely satisfactory. Bridge No. 94, on the main line near Milwaukee, which in the table is marked "poor," is to be replaced next year with a stone arch. The present bridge was built hastily after being partly destroyed by a derailment and does not have a neat appearance, but is strong and entirely reliable.

The *Madison Division* includes the main line, from Janesville to Winona in the state, the cross line from Milwaukee west through Madison, the Galena branch and some other small branch lines.

The railroad bridges on the cross line from Milwaukee to Madison are being reinforced to carry heavy trains, and with the repairs and renewals contemplated will be in condition to carry the heaviest engines with safety. Heavy trains are not run over the cross line west of Madison and the bridges with the repairs now being made will be in good condition for the year.

On the Galena branch from Montfort Junction south to the state line and on the Platteville branch a great number of oak piles in the wooden bridges are rotted badly at the surface of the ground; many of these piles should be renewed at once and a greater number will need to be renewed next year. Attention is called to pile bridge No. 1616, 518 feet in length, on the Platteville branch, where in

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*Bridge Inspection.*

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the judgment of your engineer a greater number of piles need to be renewed at once than is contemplated by the bridge department of the division.

Many of the overhead highway bridges inspected on this division, were found to be in poor condition. The bridges are sufficiently strong to carry the vehicles passing over them with safety, but many of the hand rails are old and in poor repair and the fences on the approaches leading up to the ends of the bridges are not, in some instances, sufficiently strong to guard against accident.

Of the *Galena Division* only one line is in the state; the Fox River line, from Genoa Junction to Williams Bay.

The railroad bridges on this line are in good condition.

Overhead highway bridge No. 719, near Lake Geneva, consists of a Pony Howe truss 36' 8" in length over the track with pile approaches at each end. The lower chords of this truss consist of 14" x14" pine timbers which are painted and present a fairly good appearance. Borings made in these timbers showed them to be badly decayed at the heart and that only a shell of good wood remained. While this bridge might carry the comparatively light loads that come upon a highway bridge for some considerable time without accident, to insure the safety of the traveling public the bridge should be renewed at once.

Of the *Peninsular Division* the only line in the state is the part of the Escanaba line from Marinette to Green Bay.

The only iron through bridge on this line is over the Peshtigo river, and is in good condition, but was not built to carry the heavy engines now being used on some of the main lines of the road and should be reinforced before the traffic on this line is increased. The Howe trusses and combination bridges on this line are in fairly good condition, and are fully able to carry the heaviest trains that are run over the road.

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*Bridge Inspection.*

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The greater part of the piles in the bridges on the line were driven in 1879, 1880, and 1881. These piles are cedar and for the most part are well preserved. The pile approaches to some of the trussed bridges, however, are needing repairs or renewals. Attention is called to the poor condition of the north approach of bridge No. 57, over the Oconto river; to the approaches to bridge No. 49, and to the approaches to bridge No. 27. The division engineer informs me that these bridges are to be repaired at an early date. Some especially commendable features about the C. & N. W. railway's new standard pile bridge deserve mention. The length of span is reduced from 16 feet to 13 feet 6 inches and the stringers, which are of Oregon fir, cover two spans, thus making a very much stronger bridge. The ties are spaced 4 inches and each tie is bolted to the guard-rail which is thus made to serve as a jack-stringer. This kind of a top will probably in case of a derailment on a bridge be efficient to carry the train over without wrecking the bridge.

**CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA RAILWAY.**

The divisions of the Chicago, St. Paul, Minneapolis and Omaha railway in the state of Wisconsin are the Wisconsin Division and the Northern Division.

The lines of the *Wisconsin Division* are, the main line, from Elroy to the state line at Hudson, and the Menominee, Ellsworth, Mondovi, and Marshfield branches.

Many of the shorter openings on the main line are spanned with through and deck steel plate girder bridges. Of the pile bridges all but two, Nos. 329 and 345, are in good condition. The piles in these two bridges have rotted at the surface of the ground quite badly. Your engineer is informed that these bridges will be replaced with permanent structures within a year.



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*Bridge Inspection.*

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The bridges on the Menominee branch are in good condition.

On the Ellsworth line the bridges are not quite up to the standard that is maintained on some of the other branches. This is especially true of the pile bridges, in many of which the piles are becoming very much weakened by rotting at the surface of the ground. Some of these bridges are to be replaced next year.

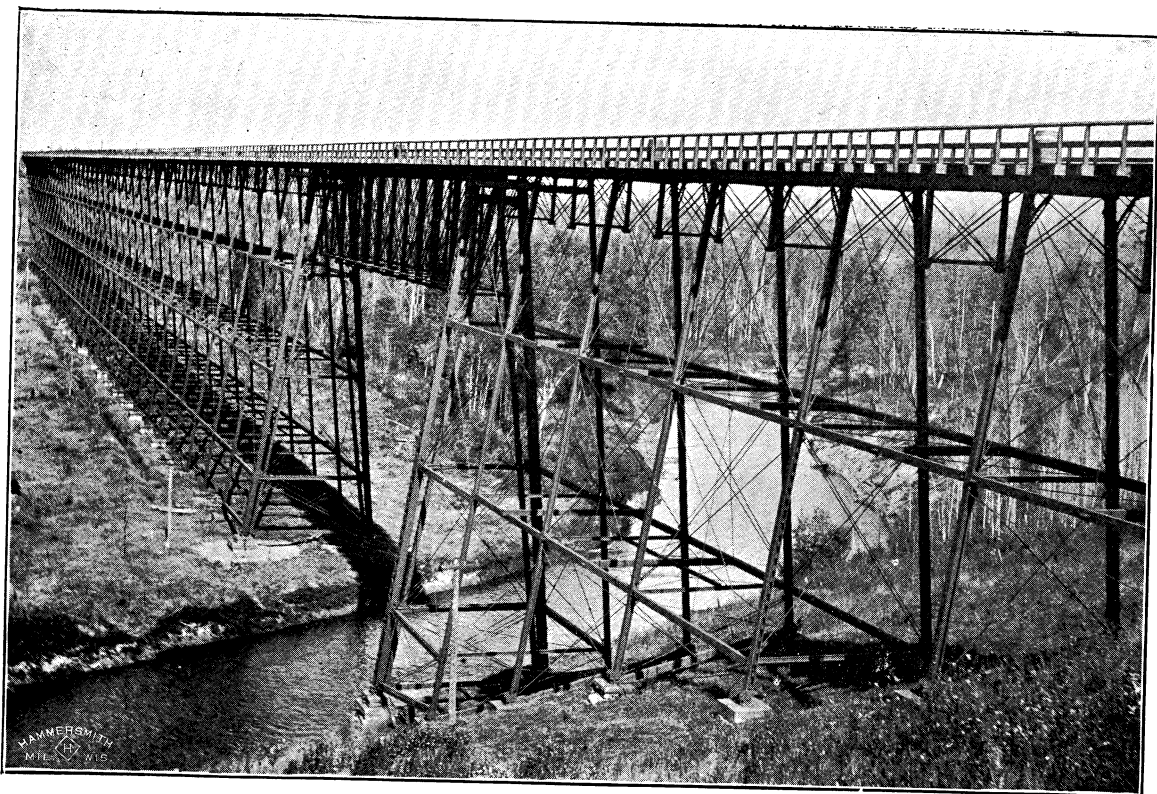
No heavy trains are run on the Mondovi branch; the bridges are adequate to meet all requirements. With repairs now being made the bridges on the Marshfield branch will be in very good condition.

The lines of the *Northern Division* are the North line, from Hudson to Bayfield, the Superior line, from Superior Jc. to Superior, the Eau Claire line from Eau Claire to Spooner, and the Ashland branch.

The bridges inspected on the North line were found to be in good condition. In some of the iron bridges, which were built prior to 1892, new floor systems have been put in recently and others re-inforced to meet the greater demands caused by running heavier trains. A computation of the stresses in the floor systems of some of the older bridges shows them to be stressed by the present grade of traffic to the limit for which such floor systems are designed. In case of any increase in the weight of the engines used on the road a number of these floor systems will need to be renewed. The pile approaches to bridge No. 380, and pile bridge No. 400, are not up to the standard on this line.

The bridges on the Ashland branch are in good condition for a branch line.

On the Eau Claire and Superior lines the bridges are for the most part in good repair and with the repairs now being made may be considered to be in very good condition.



WISCONSIN CENTRAL RAILWAY.—WHITE RIVER BRIDGE.



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*Bridge Inspection.*

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The method in use on the Northern division of bracing the frame and high pile bridges longitudinally with timbers 8"x10" in section partly framed into the bents, is to be commended. This bracing together with the system of X bracing between bents has proven efficient in keeping high frame bridges in good alignment and in case of a derailment will prove to be a valuable precaution against the wrecking of the bridge.

## CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY.

The divisions of the Chicago, Milwaukee and St. Paul railway in the state of Wisconsin are, the Prairie du Chien division, the Mineral Point division, the La Crosse division, the Wisconsin Valley division, the Northern division, the Superior division, the Chippewa Valley division, the Racine and Southwestern division, and the Chicago division.

The main line of the *Prairie du Chien Division* extends from Milwaukee via Milton Junction to Prairie du Chien; the branch lines are the Prairie du Sac and the Richland Center branches.

The bridges on the main line of the Prairie du Chien division are in very good condition. The very large engines are not run west of Madison and, before they are, it will be necessary to reinforce some of the bridges, but for present traffic they are sufficiently strong.

Some of the bridges on the branches are not in good repair. A part of the long Wisconsin river bridge at Prairie du Sac needs to be renewed. The wood draw span is beginning to show signs of decay, and the pile bent part of the bridge needs to be replaced.

On the Richland Center branch the piles in bridges Nos. 510 and 512 have rotted very badly at the surface of the ground.

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*Bridge Inspection.*

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The main line of the *Mineral Point Division* extends from Milton Junction to Mineral Point. There are four branch lines in this division all of which are short.

In Janesville there are five iron bridges which are joint bridges with the C. & N. W. R'y. These bridges are kept in good repair and appear to be sufficiently strong to meet all requirements. No computations of stresses have been made on these bridges.

Considerable bridge work is needed on this division very soon. Pile bridges Nos. 52 and 90 on the main line are poor and will be renewed next year. Frame bridge No. 146 is a high trestle bridge and rests on masonry. The timbers in this bridge are rotted quite badly. It is a very poor bridge and cannot be considered safe for any great length of time.

Overhead highway bridge No. 20; near South Wayne is in need of some repairs; the other overhead bridges on this division are in good condition. With the repairs and renewals that are contemplated by the bridge department the other bridges inspected on the main line will be in very good condition to carry the trains that are run over this line.

The bridges on the New Glarus branch are mostly new and are in first-class condition.

There are no bridges of consequence on the Warren branch.

On the Shullsburg branch the two bridges inspected are each in need of some considerable repairs.

On the Platteville line nine Howe trusses inspected are in need of renewal. The grade on this branch is very low which causes the lower chords of these bridges to be covered with water quite often. This has materially shortened the time of their usefulness.

The main line of the *La Crosse Division* extends from Milwaukee to La Crosse. There are four branches, the Water-

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*Bridge Inspection.*

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town-Madison branch, the Madison-Portage branch, the Viroqua branch and the Onalaska branch.

The bridges on the main line of this division are in good repair and appear to be first-class in every way. Many of them are of permanent construction and all renewals are permanent. The overhead highway bridges on this line deserve some especial mention. They are well built with good, substantial hand rails, and are reached by well graded approaches, thirty feet in width, on easy grades.

The bridges on the Watertown-Madison branch are in good condition with the exception of overhead highway bridge No. 566½, which should be renewed. On the Portage branch the bridges are in very good condition.

The bridges on the Viroqua branch with the renewals now being made will be sufficiently strong to carry all the traffic that goes over the line.

The main line of the *Wisconsin Valley Division* extends from New Lisbon to Star Lake. The branch lines are, the Tomah branch, the Lynn branch and the Vesper branch.

The bridges on this division are in very good condition to carry the trains run on the various lines of the division.

The main line of the *Superior Division* extends from Milwaukee north to the state line near Champion. The branches are the Appleton branch, the Oconto branch, the Menomonee branch and the Wausaukee branch.

The bridges on this division are, as a rule, in first class condition. The combination draw bridge over the Fox river at Green Bay is to be replaced soon by a bridge of modern design. The approaches to some of the Howe Truss bridges on this line are needing some minor repairs, no serious defects, however, have been noted. The main line of the *Northern Division* extends from Milwaukee to Portage. The branches are, the North Lake line, the

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*Bridge Inspection.*

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Fond du Lac line, the Oshkosh line, the Markesan line, the Winneconne line and the Berlin line.

The bridges inspected were found for the most part to be in good repair. Bridge No. 88 on the Oshkosh line is to be renewed this winter. Some of the bridges on the North Lake line are not in very good condition at present.

The main line of the *Racine and Southwestern Division* extends from Racine to Beloit; the branches are the Beloit branch and the Eagle River branch.

The bridges inspected on this division were in very good condition with the exception of the two bridges marked "poor," in the remark column of the table. These two bridges are to be renewed next year.

The main line of the *Chicago Division* extends from Chicago to Milwaukee. There are no branch lines in Wisconsin.

The bridges inspected on this division were found to be entirely first class.

The C., M. & St. P. Ry. has been using concrete masonry quite extensively in bridge piers and abutments and with steel rails for making culverts of sizes up to a span of twelve feet, and with plate girders embedded in the top for much longer spans. The concrete masonry inspected is of such satisfactory character that it recommends its use in permanent improvements on railroads very highly.

#### WISCONSIN CENTRAL RAILWAY.

The divisions of the Wisconsin Central Railway are the southern division and the northern division.

The *Southern Division* comprises the 1st district, from Chicago to Fond du Lac, and the 2nd district, from Fond du Lac to Abbotsford. The part of the main line between Rugby Junction and Fond du Lac was all of the 1st district that was inspected. The bridges on this part of the line are in good condition.

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*Bridge Inspection.*

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On the main line of the 2d district all of the bridges inspected were found to be in good repair. No heavy engines are run over the Portage branch. The piles in pile bridge No. D3 show considerable rot at the surface of the ground. Some of the piles will need to be replaced the coming season. The other bridges inspected on this branch are in very good condition.

The *Northern Division* comprises the 3rd district, from Abbotsford west to the state line, and the 4th district, from Abbotsford north to Ashland. Bridge No. 715, in the 3rd district, was originally a pile bridge entirely. In 1898 it was raised seven feet to meet change in grade, by putting frame bents on top of the pile bents and bracing the pile bents longitudinally by means of timbers framed in at the top of the pile bents. While this is a very good construction for a temporary bridge it should not remain on the line for any great length of time, the continued stability of such construction being too uncertain. The other bridges inspected in this district are in good condition.

The bridges inspected in the 4th district were found to be in good repair. The White river and Silver creek iron trestles which were built in 1872 are of very light construction, having been designed for lighter loads than the present traffic imposes. The heaviest engines are not run over these trestles and the rate of speed of all trains is limited to six miles per hour while crossing them.

At the time of filing this report the plans and strain-sheets for these trestles and for some of the other iron and steel bridges on the Wisconsin Central railway which will be furnished by the engineering department of the road, have not been received.

The span of the Wisconsin Central railway's standard pile bridge is 16 feet; the stringers are of Oregon fir and



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*Bridge Inspection.*


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cover two spans; the guard-rails are 8" x 8" in section and are notched 1 inch on the ties. Each tie is spiked to the stringers.

## BRIDGES INSPECTED ON WISCONSIN DIVISION OF

## C. N. W. RY.

Bridge 644; Kenosha line; crossing Lower Fox river; pile bridge; built in 1897; very good.

Bridge 614; Kenosha line; frame bent, on masonry, overhead highway bridge; first class.

Main line; crossing Pike river; deck plate girder on masonry; first class.

Bridge 1478; Main line; crossing Rock river; riveted lat. truss on masonry; built in 1875; reinforced 1896.

Bridge 1608; Main line; plate girder on masonry; 36 feet long; superstructure built in 1897; good bridge.

Bridge 1615; Main line; overhead highway bridge (riveted iron truss); 62ft. 6in. long; superstructure built in 1892; good bridge.

Bridge 1655; pile bridge; 160ft. long; built in 1896; good bridge.

Bridge 1657; Main line; crossing Milwaukee river; through plate girder; superstructure built in 1899; first class.

Bridge 1687; Main line; deck plate girder; 225 ft. long; superstructure built in 1898; first class.

Bridge 1688; Main line; overhead highway bridge; 107 ft. long; built in 1891; in fair repair.

Bridge 1449; Main line; overhead highway bridge; to be renewed next year.

Bridge 1753; Main line; overhead highway bridge; about worn out.

Bridge 1761; Main line; overhead highway bridge (riveted pony truss); 115 ft. long; superstructure built in 1899; first class.

Bridge 363; Main line; at Neenah; pile bridge; good bridge.

Bridge 366; near Neenah; pile bridge; 1,572 ft. long; built in 1898; very good.

Bridge 387; deck plate girder; very good.

Bridge 403; crossing Apple creek; pin connected truss, deck; 1 spar; 82 ft. 10 in. long; superstructure built in 1882; very good.

Bridge 424; pile bridge; 213 ft. long, built in 1896; reinforced 1900.

Bridge 425; pile bridge; 121 ft. long; built in 1896; reinforced 1899.

Bridge 431; pile bridge; 188 ft. long; built in 1899; first class.

Bridge 957; Sheboygan & Western line; pile bridge; 3 spans; 45 ft. long; new bridge being built.

Bridge 954; Sheboygan & Western line; pile bridge; 6 spans; 89 ft. long; built in 1900; first class.

Bridge 950; Sheboygan & Western line; pile bridge; 3 spans; 46 ft. long; built in 1900; first class.

Bridge 928; Sheboygan & Western line; mile post 37; pile bridge; 10 spans; 158 ft. long; built in 1895; good bridge.

Bridge 877; Sheboygan & Western line; mile post 34; pile bridge; 23 spans; 233 ft. long; superstructure built in 1898; substructure built in 1886; fair condition.

Bridge 854; Sheboygan & Western line; Plymouth; crossing Main street; pile bridge; 6 spans; 99 ft. long; built in 1896.

Bridge 853; Sheboygan & Western line; Plymouth; crossing stream; pile bridge; 9 spans; 136 ft. long; built in 1891; reinforced.

Bridge 826; Sheboygan & Western line; through plate girder; 3 spans; 128 ft. long; superstructure built in 1898; very good.

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*Bridge Inspection.*

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Bridge 824; Sheboygan & Western line; crossing Sheboygan river; Pony Howe truss; 4 spans; 150 ft. long; built in 1896; good shape.

Bridge 817; Sheboygan & Western line; pile bridge; 8 spans; 123 ft. long; built in 1896.

Bridge 807; Sheboygan & Western line; crossing Sheboygan river; through combination truss; 1 span; 155 ft. long; built in 1890; on masonry.

Bridge 804; Saeboygan & Western line; Sheboygan; overhead highway bridge; 1 span; 60 ft. long; built in 1893; very good.

Bridge 803; Sheboygan & Western line; frame bridge; 1 span; being replaced with plate girders.

Bridge 969; Princeton line; near Fond du Lac; pile bridge; 16 spans; 233 ft. long; superstructure built in 1897; substructure built in 1886; very good.

Bridge 1013; Princeton line; west of Ripon; pile bridge; 28 spans; 433 ft. long; built in 1897; very good.

Bridge 1019; Princeton line; west of Ripon; pile bridge; 21 spans; 326 ft. long; built in 1896; very good.

Bridge 298; old line; mile-post 174; overhead highway bridge; built in 1896; very good.

Bridge 293; old line; mile-post 170; overhead highway bridge; 100 ft. long; built in 1897; very good.

Bridge 270; old line; crossing Rock river; pile bridge; 108 ft. long; superstructure built in 1892; deck plate girder recommended by division engineer.

Bridge 243; old line; mile-post 150; overhead highway bridge; 67 ft. long; built in 1896.

Bridge 207; old line; mile-post 128; crossing Rock river; pile bridge; 25 spans; 386 ft. long; built in 1894; very good.

Bridge 179; old line; mile-post 116; crossing Rock river; pile bridge; 24 spans; 414 ft. long; built in 1891; to be rebuilt.

Bridge 171; old line; Fort Atkinson; crossing Rock river; Pony Howe truss; 5 spans; 348 ft. long; built in 1883; being replaced.

Bridge 149; old line; mile-post 94; overhead highway bridge; 3 spans; 140 ft. long; built in 1894; too dark to make a satisfactory inspection.

Bridge 145; old line; Janesville; crossing Bluff St.; deck plate girder; 1 span; 67 ft. long; superstructure built in 1896; too dark to make a satisfactory inspection.

Bridge 144; old line; Janesville; crossing Main St.; deck plate girder; 1 span; 166 ft. long; superstructure built in 1896; too dark to make a satisfactory inspection.

Bridge 143; old line; Janesville; crossing Rock river; deck pin connected truss; 3 spans; 380 ft. long; superstructure built in 1885; too dark to make a satisfactory inspection.

Bridge 142; old line; Janesville; crossing River St.; deck riveted truss; 45 ft. 6 in. long; superstructure built in 1891; too dark to make a satisfactory inspection.

Bridge 141; old line; Janesville; crossing Franklin St.; deck plate girder; 58 ft. 9 in. long; superstructure built in 1886; too dark to make a satisfactory inspection.

Bridge 138; old line; deck riveted truss; 4 spans; 516 ft. long; superstructure built in 1896; too dark to make a satisfactory inspection.

Bridge 137; old line; overhead highway bridge; 57 ft. long; superstructure built in 1898; substructure built in 1889; too dark to make a satisfactory inspection.

Bridge 128; old line; crossing Turtle creek; stone arch; superstructure built in 1869; too dark to make a satisfactory inspection.

Bridge 111; old line; mile-stone 5; crossing near Sharon; pony riveted truss; 1 span; 80 ft. 8 in. long; superstructure built in 1888; too dark to make a satisfactory inspection.

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*Bridge Inspection.*

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Bridge 94; Main line; 26.5 miles from Milwaukee; pile bridge; 12 spans; 213 ft. long; superstructure built in 1894; substructure built in 1886; poor, to be renewed.

Bridge 205; Main line; overhead highway bridge; 218 ft. long; built in 1893; very good.

Bridge 211; Main line; pile bridge; 1 span; 9 ft. long; built in 1888; now being renewed. Howe truss span; 40 ft. long; built in 1888; now being renewed. Pile bridge; 1 span; 13 ft. long; built in 1888; now being renewed.

Bridge 212; Main line; pin-connected deck span; 1 span; 75 ft. long; superstructure built in 1893; in good repair. Pin-connected deck span, draw; 1 span; 160 ft. long; superstructure built in 1893; stresses not excessive. Pin-connected deck span; 1 span; 90 ft. long; superstructure built in 1893.

Bridge 259; Main line; pile bridge; 6 spans; 72 ft. long; built in 1888; good condition.

Bridge 260; Main line; mile-post 65.0; pile bridge; 6 spans; 83 ft. long; built in 1892; good condition.

Bridge 261; Main line; pile bridge; 6 spans; 72 ft. long; built in 1890; good condition.

Bridge 321; Main line; at Manitowoc; crossing Manitowoc river; iron draw bridge, through; substructure built in 1899; draw span brought here from Milwaukee in 1900.

Bridge 321A; Main line; at Manitowoc; crossing over W. C. railway; riveted lattice iron span; 129 ft. 6 in. long; built in 1896; very good bridge.

Bridge A12; Two Rivers line; pile bridge; 260 ft. long; superstructure built in 1894; substructure built in 1882; fair condition.

Bridge 429; Main line; mile-post 110.0; crossing opening near Kaukanie; pile bridge; 56 feet long; built in 1889; some minor repairs only needed.

Bridge 443; Main line; Howe truss; 1 span; 66 ft. long; new bridge being put in.

Bridge 485; Main line; Howe truss, pony; 1 span; 56 ft. long; built in 1899; good.

Bridge 489; Main line; crossing at Appleton; steel pin-connected draw span; 1 span; 226 ft. long; built in 1890; stresses not excessive. Steel pin-connected span, deck; 1 span; 98 ft. long; built in 1890.

Bridge 492; Main line; crossing at Appleton; pile bridge; extensive repairs contemplated.

Bridge 545; Main line; crossing at Hortonville; overhead highway bridge; 66 ft. long; built in 1899; first class.

Bridge 578; Main line; through plate girder; 1 span; 50 ft. long; built in 1892. Through plate girder, draw; 1 span; 130 ft. long; built in 1892; good.

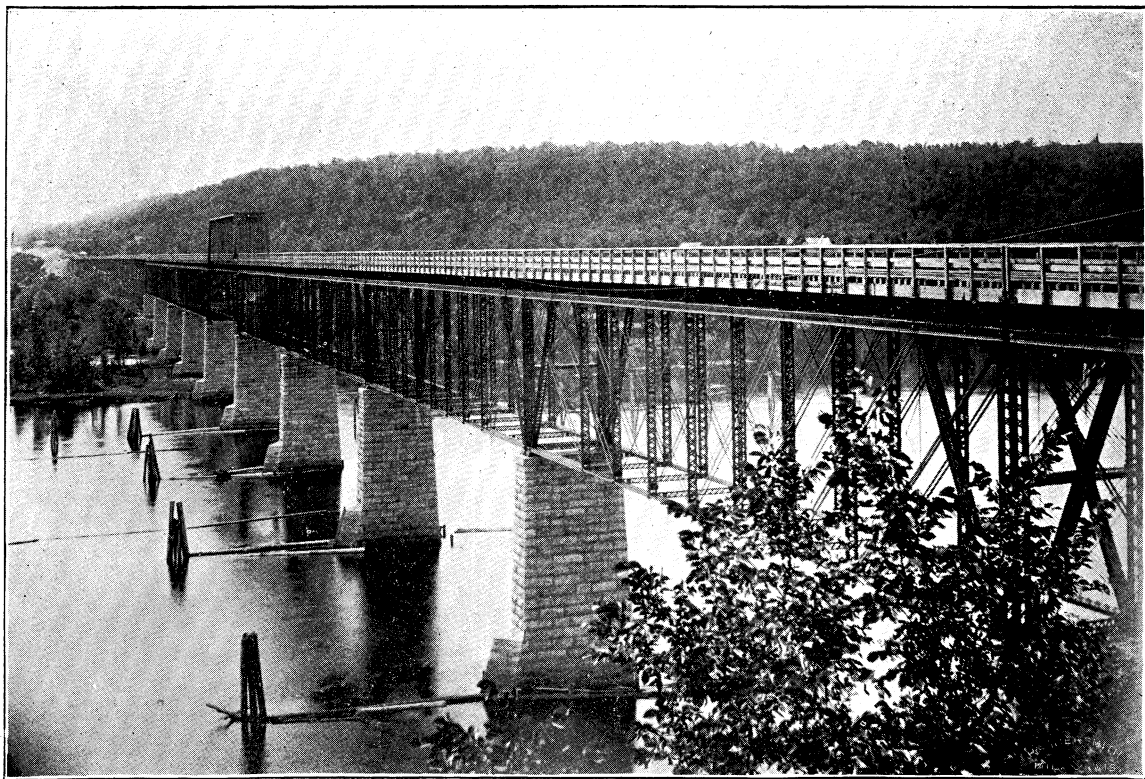
Bridge 580; Main line; crossing near New London Junction; south approach pile; 221 ft. long; built in 1897. Theo. Howe truss; 66 ft. long; built in 1900. North approach pile; 317 ft long; built in 1897; very good bridge.

Bridge C; Oconto line; approach pile; 84 ft. long; built in 1893. Through Howe truss; 66 ft. long; built in 1893. Approach pile; 62 ft. long; built in 1893; in fair condition.

Bridge C9; Oconto line; crossing at Empress; approach pile; 48 ft. long; built in 1893. Through Howe truss; 66 ft. long; built in 1892. Approach pile; 166 ft. long; built in 1893; good for branch line.

Bridge C25; Oconto line; approach pile; 310 ft. long; built in 1893; in fair condition. Howe truss; 1 span; 66 ft. long; built in 1892; good. Howe truss; 2 spans; 128 ft. long; built in 1899; good. Approach pile; 47 ft. long; built in 1893; in good repair.

Bridge C51; Oconto line; pile approach; 83 ft. long; built in 1894 in fair repair. Half through span, Howe truss; 100 ft. long; built in 1891; poor. Pile approach built in 1894; very good. Pile bridge; built in 1898; very good.



WISCONSIN CENTRAL RAILWAY—BRIDGE ACROSS ST. CROIX RIVER.



*Bridge Inspection.*

Bridge N3; Wisconsin Northern line; pile bridge; built in 1898; very good.  
 Bridge N24; Wisconsin Northern line; pile approach; 17 spans; 237 ft. long; built in 1898. Howe truss span; 1 span; 64 ft. long; built in 1898. Pile approach; 34 spans; 475 ft. long; built in 1898; first class.

Bridge N64; Wisconsin Northern line; mile-post 2 miles north of Mountain; overhead highway; 7 spans; 116 ft. long; built in 1899; first class.

Bridge B5; Oshkosh line; pile bridge; 5 spans; 60 ft. long; substructure built in 1888; to be renewed at once.

Bridge 1289; Ashland line; pin-connected, east span; 74 ft. long; built in 1889; entirely first class. pin-connected, west span; 98 ft. long; built in 1889; stresses not excessive.

Bridge 1160; Ashland line; crossing over Montreal river; deck span, iron, on masonry; superstructure built in 1900; very good.

Bridge G188; Rhinelander line; pile approach; 14 ft. long; needs reinforcing. Howe truss; 76 ft. long; to be renewed. Pile approach; 572 ft. long; needs reinforcing.

Bridge G133; Rhinelander line; near Mercer; pile approach; 2 spans; 30 ft. long; built in 1899. Through Howe truss; 1 span; 48 ft. long; built in 1899. Pile approach; 4 spans; 61 ft. long; built in 1899; very good.

Bridge G125; Rhinelander line; pile approach; 637 ft. long; built in 1900. Through Howe truss; 64 ft. long; built in 1900. Pile approach; 17 ft. long; built in 1900; very good.

Bridge G92; Rhinelander line; pile approach; 171 ft. long; built in 1898. Through Howe truss; 64 ft. long; built in 1894. Pile approach; 234 ft. long; built in 1898; very good.

Bridge G53; Rhinelander line; at Rhinelander; crossing Wisconsin river; through Howe truss; 125 ft. 6 in. long; built in 1898; first class. Through Howe truss; 80 ft long; built in 1898; first class. Pin-connected truss; through; 164 ft. long; substructure built in 1898; stresses not excessive.

Bridge D7; Marshfield line; near Mound Junction; crossing Norway swamp; pile bridge; 1,337 ft. long; substructure built in 1888; very good condition.

Bridge D24; Marshfield line; pile approach; 2 spans; 28 ft. 6 in. long; built in 1898. Howe truss span; 100 ft. long; built in 1898. Pile approach; 5 spans; 75 ft. long; built in 1898; very good.

Bridge D38; Marshfield line; iron, pin-connected; 100 ft. long; built in 1891. Iron, pin-connected; 137 ft. long; built in 1891; stresses not excessive.

Bridge D39; Marshfield line; Wausau; crossing Wisconsin river; iron, pin-connected; 127 ft. long; superstructure built in 1891; substructure built in 1895. Iron, pin-connected; 142 ft. long; built in 1895; stresses not excessive.

Bridge D63; Marshfield line; crossing Big Rib river; pile approach; 3 spans; 36 ft. long; superstructure built in 1891; to be renewed. Howe truss; 1 span; 100 ft. long; built in 1891. Howe truss; 1 span; 100 ft. long; built in 1891. Pile approach; 2 spans; 32 ft. long; built in 1899; some repairs needed.

Bridge D131; Marshfield line; crossing Big Eau Plaine river; Howe truss, deck; 136 ft. long; approaches being filled in.

Bridge D154; Marshfield line; pile approach; 103 ft. long; built in 1891. Howe truss; 66 ft. long; built in 1891. Pile approach; 129 ft. long; built in 1891; being renewed.

## BRIDGES INSPECTED ON MADISON DIVISION OF C. &amp; N. W. RY.

Bridge 1005A; Cross line; in Milwaukee; crossing Kinnickinnic; pile approach; 56 ft. long; superstructure built in 1891; substructure built in 1881; needing repairs.

Bridge 100B; Cross line; in Milwaukee; crossing Kinnickinnic; through pin-connected iron draw; 176 ft. 6 in. long; built in 1884; to be reinforced.

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*Bridge Inspection.*


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Bridge 1005C; Cross line; in Milwaukee; crossing Kinnickinnic; pile approach; 40 ft. long; superstructure built in 1898; substructure built in 1891.

Bridge 1016; Cross line; pile bridge; 158 ft. long; superstructure built in 1893; substructure built in 1881; height 233 ft., 4-pile bents.

Bridge 1022½; Cross line; overhead highway bridge; 98 ft. long; built in 1894; renewal contemplated.

Bridge 1037; Cross line; overhead highway bridge; built in 1892.

Bridge 1041; Cross line; mile-post 9.2; overhead highway bridge; 89 ft. long; built in 1881; should be renewed.

Bridge 1071; Cross line; pony iron truss; 118 ft. long; superstructure built in 1881; too light for heavy engines.

Bridge 1087; Cross line; overhead highway bridge; 128 ft. long; superstructure built in 1895; substructure built in 1881; some repairs needed.

Bridge 1089; Cross line; overhead highway bridge; 110 ft. long; superstructure built in 1881; new guard rails needed.

Bridge 1095; Cross line; mile-post 29.7; overhead highway bridge; 88 ft. long; superstructure built in 1881; extensive repairs in 1896.

Bridge 1112; Cross line; mile-post 37.1; overhead highway bridge; 92 ft. long; superstructure built in 1891; very good bridge.

Bridge 1132; Cross line; mile-post 44.3; overhead highway bridge; 98 ft. long; repairs needed.

Bridge 1141; Cross line; mile-post 46.7; pile bridge; 121 ft. long; superstructure built in 1893; in good condition.

Bridge 1154; Cross line; Riv. iron truss, deck; 4 spans; 300 ft. long; superstructure built in 1900; first class.

Bridge 1154; Cross line; Riv. iron truss, deck; 1 span; 50 ft. long; superstructure built in 1900; first class.

Bridge 1158; Cross line; Riv. iron truss, deck; 4 spans; 300 ft. long; superstructure built in 1900; first class.

Bridge 1168; Cross line; mile-post 58.1; overhead highway bridge; 96 ft. long; built in 1881; very poor.

Bridge 1169; Cross line; mile-post 59.0; pile trestle; 869 ft. long; built in 1897; through swamp.

Bridge 1185; Cross line; mile-post 63.5; pile bridge; 95 ft. long; built in 1892; good order.

Bridge 1234; Cross line; mile-post 80.0; Riv. pony iron truss; 79 ft. 8 in. long; superstructure built in 1881; well preserved.

Bridge 1236; Cross line; pile bridge; built in 1892; piles not good.

Bridge 1240; Cross line; pile bridge; built in 1892; piles not good.

Bridge 1241; Cross line; trail culvert; 1 span; superstructure built in 1896; to be replaced by box.

Bridge 1243; Cross line; pile bridge; built in 1893.

Bridge 1245; Cross line; pile bridge; built in 1895; good condition.

Bridge 1247; Cross line; mile-post 88.5; pile bridge 2 spans; 31 ft. 6 in. long; built in 1891; partly rebuilt later.

Bridge 1250; Cross line; mile-post 90.3; pile bridge; 7 spans; 109 ft. 2 in. long; built in 1892; repairs needed.

Bridge 1253; Cross line; mile-post 91.1; pile bridge; 3 spans; 44 ft. 6 in. long; oak piles.

Bridge 1254; Cross line; mile-post 91.5; pile bridge (five-pile bent); 5 spans; 76 ft. long; built in 1898; a good bridge.

Bridge 1258; Cross line; mile-post 93.9; pile bridge (four-pile bent); 4 spans; 63 ft. 8 in. long; built in 1894; cedar piles; good.

Bridge 1264; Cross line; mile-post 95.9; pile bridge; 3 spans; 43 ft. 7 in. long; built in 1890; good at present.

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*Bridge Inspection.*

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Bridge 1266; Cross line; mile-post 97.5; pile bridge; 123 ft. long; built in 1899; repairs needed.

Bridge 1269; Cross line; mile-post 98.5; pile bridge; 110 ft. long; superstructure built in 1889; substructure built in 1880; repairs needed.

Bridge 1281; Cross line; mile-post 102.8; frame bridge; 78 ft. long built in 1888; some minor repairs needed.

Bridge 1283; Cross line; mile-post 103.1; stone box; superstructure built in 1880; efficient.

Bridge 1288; Cross line; mile-post 103.7; frame and pile; 125 ft. long; very good.

Bridge 1292; Cross line; mile-post 110.4; pile; 110 ft. long; built in 1899; first class.

Bridge 1297; Cross line; mile-post 106.5; wooden box; superstructure built in 1880; in good condition.

Bridge 1302; Cross line; mile-post 109.2; overhead highway bridge; 57 ft. long; built in 1880; poor; to be replaced.

Bridge 1309; Cross line; mile-post 110.3; frame bridge; 95 ft. long; repairs needed.

Bridge 1312; Cross line; mile-post 110.8; pile bridge; 76 ft. long; built in 1893; repairs needed.

Bridge 1313; Cross line; mile-post 111.0; frame bridge; 93 ft. long; built in 1892; repairs needed.

Bridge 1316; Cross line; mile-post 111.7; pile bridge; 93 ft. long; built in 1888; too to be rebuilt in 1901.

Bridge 1317; Cross line; mile-post 113.2; pile bridge; 79 ft. long; poor.

Bridge 1326; Cross line; mile-post 116.2; frame bridge; 48 ft. long; built in 1889; good for another year.

Bridge 1327; Cross line; mile-post 117.4; stone culvert, frame top; 12 ft. long; to be replaced soon.

Bridge 1360; Cross line; mile-post 132.8; pile bridge; 76 ft. long; built in 1893; oak piles.

Bridge 1366; Cross line; mile-post 135.6; pile bridge; 45 ft. long; built in 1890; piles somewhat decayed.

Bridge 1372; Cross line; mile-post 139.9; pile bridge; 4 spans; 64 ft. long; built in 1892; in fair repair.

Bridge 1374; Cross line; mile-post 140.3; pile bridge; 107 ft. long; built in 1891; piles not first class.

Bridge 1375; Cross line; mile-post 141; pile bridge; 138 ft long; built in 1893; very good condition.

Bridge 1393; Galena line; mile-post 161; pile bridge; 79 ft. long; built in 1894; some poor piles.

Bridge 1397; Galena line; mile-post 163.4; crossing C., M. & St. P. R. R. (Mineral Point); frame bridge; 63 ft. long superstructure built in 1895; an iron bridge would be better.

Bridge 1616; Platteville line; mile-post 169.3; crossing over deep ravine; pile bridge; 518 ft. long; built in 1893; many of the piles badly rotted at the surface of ground.

Bridge 1433; Galena line; mile-post 175.8; pile bridge; 78 ft. long; to be replaced on account of high water.

Bridge 1442; Galena line; mile-post 177.5; pony Howe truss; 1 span; 66 ft. long; poor bridge.

Bridge 1443; Galena line; pony Howe truss; 1 span; 66 ft. long; poor bridge.

Bridge 1445; Galena line; mile-post 178.4; pony Howe truss; 1 span; 66 ft. long; to be replaced at once.

Bridge 1447; Galena line; mile-post 178.8; pony Howe truss; 1 span; 66 ft long; masonry of abutment poor.



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*Bridge Inspection.*

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Bridge 1455; Galena line; mile-post 180.5; pony Howe truss; 1 span; 66 ft. long; masonry of abutment poor.

Bridge 1460; Galena line; mile-post 181.2; combination span; 1 span; 124 ft. long; well preserved.

Bridge 707A; Main line; near Winona; through pin-connected truss; 1 span; two spans of this opening to be filled in and new bridge replaces old bridge over third span.

Bridge 707B; Main line; near Winona; through pin-connected truss; 1 span; two spans of this opening to be filled in and new bridge replaces old bridge over third span.

Bridge 707C; Main line; near Winona; through pin-connected truss; 1 span; two spans of this opening to be filled in and new bridge replaces old bridge over third span.

Bridge 705; Main line; pile bridge; 2 spans; 31 ft. long; superstructure built in 1888; substructure built in 1898.

Bridge 701; Main line; pile bridge; 2 spans; 28 ft. long; superstructure built in 1888; substructure built in 1888.

Bridge 696; Main line; near Marshland; pile bridge; 234 ft. long; superstructure built in 1893; to have new deck this year.

Bridge 695B; Main line; riveted pony truss; 1 span; 76 ft. long; superstructure built in 1880; reinforced in 1893.

Bridge 695A; Main line; pile bridge; 587 ft. long; superstructure built in 1896; substructure built in 1897; first class.

Bridge 694; Main line; pile bridge; built in 1889; in fair repair.

Bridge 693; Main line; through Howe truss; 1 span; 126 ft. long; superstructure built in 1900; good.

Bridge 684; Main line; near Trempealeau; pile bridge; 3 spans; 48 ft. long; built in 1891; new deck this year.

Bridge 680; Main line; pile bridge; 112 ft. long; built in 1893; first class.

Bridge 679; Main line; pile bridge; 107 ft. long; superstructure built in 1897; substructure built in 1889.

Bridge 678; Main line; pile bridge; 77 spans; 1,224 ft. long; in good repair.

Bridge 677; Main line; pile bridge; 248 ft. long; built in 1894; piles getting weak.

Bridge 673B; Main line; pile approach; 1,226 ft. long; superstructure built in 1898; substructure built in 1899; good condition.

Bridge 673A; Main line; riveted latticed truss; in good repair.

Bridge 652; Main line; pile bridge; 64 ft. long; built in 1894; first class.

Bridge 648; Main line; pile bridge; 113 ft. long; built in 1892; some repairs needed.

Bridge 640; Main line; pile bridge; 78 ft. long; built in 1892; out of vertical, driftwood.

Bridge 639; Main line; farm and road bridge; superstructure built in 1896; partly washed out.

Bridge 613 $\frac{3}{4}$ ; Main line; overhead highway bridge; 111 ft. long; built in 1894; all right.

Bridge 55; Main line; iron trestle, masonry piers; 13 spans; 416 ft. long; built in 1880; 68 ft. high, in good alignment.

Bridge 569; Main line; stone arch; superstructure built in 1879; in fair repair.

Bridge 557; Main line; Riv. pony truss on masonry; 1 span; superstructure built in 1892; substructure built in 1884; in good repair.

Bridge 495; Main line; pile bridge; Superstructure built in 1888; substructure built in 1872; needs attention.

Bridge 229; Main line; mile-post 66; overhead highway bridge; 120 ft. long; superstructure built in 1898; substructure built in 1882; entirely first class.

*Bridge Inspection.*

Bridge 226; Main line; mile-post 65; crossing nine-mile marsh; pile bridge; 46 ft. long; superstructure built in 1898; good.

Bridge 153; Main line; pile bridge; 97 ft. long; superstructure built in 1896; substructure built in 1886; good for a year.

Bridge 122A; Main line; pile approach; 47 ft. long; built in 1886. B. Plate girder on piles; 45 ft. long; built in 1886. C. pile approach; 62 ft. long; substructure built in 1886; to be repaired in coming season.

Bridge 98; Main line; crossing street in Janesville; plate girder on masonry; 58 ft. long; built in 1886.

Bridge 87; Main line; pile bridge; 192 ft. long; built in 1880.

Bridge 171; Evansville line; mile-post 34.7; pile bridge; 170 ft. long; built in 1893; first class.

Bridge 186; Evansville line; mile-post 40.3; overhead highway bridge; 75 ft. long; superstructure built in 1896; substructure built in 1885; first class.

Bridge 188; Evansville line; plate girder on masonry; 34 ft. long; superstructure built in 1900; substructure built in 1885; first class.

Bridge 190; Evansville line; near Evansville; overhead highway bridge; 48 ft. long; built in 1898; first class.

Bridge 802; Galesville line; pile bridge; built in 1894.

Bridge 804; Galesville line; pile bridge; 9 spans; 141 ft. long; built in 1895; very good.

Bridge 901A; La Crosse line; pile approach; superstructure built in 1898; substructure built in 1885. B. Through pony iron span; superstructure built in 1898; substructure built in 1885. C. Pile approach; superstructure built in 1898; substructure built in 1885; piles will need renewing soon; good iron truss.

Bridge 902; La Crosse line; pile bridge; 193 ft. long; superstructure built in 1896; substructure built in 1885; in fair repair.

Bridge 903; La Crosse line; pile bridge; 63 ft. long; superstructure built in 1892; substructure built in 1885; in fair repair.

## BRIDGES INSPECTED ON THE GALENA DIVISION OF THE C. &amp; N. W. RY.

Bridge 719; Fox River line; overhead highway bridges, wood, a truss span, pile approaches; length of span 36 ft. 8 in.; 156 ft. long; built in 1885; lower chord members of truss rotted at center; bridge not safe.

Bridge 721; Fox River line; at Lake Geneva; pile bridge; 29 spans; 454 ft. long; built in 1896; in good condition.

## BRIDGES INSPECTED ON PENINSULAR DIVISION OF C. &amp; N. W. RY.

Bridge 79; Escanaba line; at Peshtigo; crossing Peshtigo river; latticed-trussed bridge, through; 1 span; 127 ft. long. Latticed trussed bridge, through; 1 span; 99 ft. long. Latticed-trussed bridge, through; 1 span; 127 ft. long; floor system very light; reinforcement needed.

Bridge 70; Escanaba line; mile-post 36 from Green Bay; pile trestle; 5 spans; 80 ft. long; superstructure built in 1895; substructure built in 1880; not first class.

Bridge 57; Escanaba line; mile-post 28; crossing Oconto river; approach pile; 10 ft. long; superstructure built in 1896; substructure built in 1880; in fair condition. Combination truss; 54 ft. long; superstructure built in 1896; substructure built in 1880; to be replaced. Bowstring draw; 112 ft. 6 in. long; superstructure built in 1889; substructure built in 1879; timbers are sound. Pile approach; 88 ft. long; superstructure built in 1889; substructure built in 1879; very poor snape.

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*Bridge Inspection.*


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Bridge 49; Escanaba line; pile approach; 21 ft. long; superstructure built in 1895; substructure built in 1880. Combination truss; 54 ft. long; built in 1880. Combination truss; 54 ft. long; built in 1880. Pile approach; 64 ft. long; superstructure built in 1895; substructure built in 1880; approaches need re-newing; new floors in 1895.

Bridge 29; Escanaba line; pile trestle; 5 spans; 80 ft. long; superstructure built in 1894; substructure built in 1880; in fair condition only.

Bridge 27; Escanaba line; approach, pile; 7 spans; 98 ft. long; superstructure built in 1897; substructure built in 1883; needs renewal. Howe truss, pony; 2 spans; 128 ft. long; built in 1880; to be replaced by girder. Approach, pile; 3 spans; 38 ft. long; superstructure built in 1897; substructure built in 1880; needs renewal.

Bridge 14; Escanaba line; iron girder; 35 ft. 6 in. long; built in 1897; very good. Pile trestle; 42 ft. long; superstructure built in 1897; substructure built in 1880; not first class. Pile trestle; 185 ft. 6 in. long; superstructure built in 1896; substructure built in 1880; not first class. Combination truss; 54 ft. long; superstructure built in 1896; substructure built in 1880; to be replaced. Pile trestle; 141 ft. long.

Bridge 4; Escanaba line; near Green Bay; crossing over Duck creek; pile approach; 2 spans; 32 ft. long; superstructure built in 1894; substructure built in 1880; in fair condition only. Howe truss, draw, pony; 1 span; 112 ft. 10 in. long; built in 1879; timbers sound. Pile approach; 4 spans; 64 ft. long; superstructure built in 1894; substructure built in 1880; not first-class.

**BRIDGES INSPECTED ON WISCONSIN DIVISION OF C., ST. P., M. & O. RY.**

Bridge 1; Main line; in Elroy; iron girder; 108 ft. long; built in 1894; very good.

Bridge 3; Main line; 1 mile west of Elroy; pile bridge; 5 spans; 80 ft. long; built in 1885; in good condition.

Bridge 21; Main line; near Tunnel siding; through plank girder; 54 ft. superstructure built in 1897; first class.

Bridge 31; Main line; near Hustler; pile bridge; 4 spans; 61 ft. long; built in 1891; in fair condition.

Bridge 58; Main line; Valley Jc.; crossing C., M. & St. P.; pile bridge; 7 spans; 98 ft. long; superstructure built in 1899; substructure built in 1890; good bridge.

Bridge 81; Main line; near Rugg; pile bridge; 70 ft. long; superstructure built in 1894; substructure built in 1883; good bridge.

Bridge 87; Main line; near Millston; plate girder on masonry; 54 ft. long; superstructure built in 1897; good bridge.

Bridge 88; Main line; at Millston; plate girder on masonry; 50 ft. long; superstructure built in 1897; good bridge.

Bridge 112; Main line; Black river; iron latticed truss; 100 ft. long; superstructure built in 1885. Iron latticed truss; 181 ft. long; superstructure built in 1892. Iron latticed truss; 147 ft. long; superstructure built in 1892. Iron latticed truss; 60 ft. long; superstructure built in 1885; very good bridge.

Bridge 149; Main line; near Merrillon; iron latticed truss; 90 ft. long; superstructure built in 1885; new floor system 1899.

Bridge 170; Main line; 5 miles south of Fairchild; pile bridge; 78 ft. long; built in 1894; very good repair.

Bridge 175; Main line; pile bridge; 4 spans; 62 ft. long; superstructure built in 1895; very good repair.

Bridge 193; Main line; near Fairchild; deck plate girder; 50 ft. long superstructure built in 1899; good.

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*Bridge Inspection.*

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Bridge 195; Main line; deck plate girder; 60 ft. long; superstructure built in 1895; good.

Bridge 224; Main line; near Augusta; pile bridge; 6 spans; 93 ft. long; built in 1886; to be rebuilt next year.

Bridge 229; Main line; pile bridge; 3 spans; 40 ft. long; superstructure built in 1895; substructure built in 1884; very good.

Bridge 251; Main line; Fall Creek; through iron girder; 90 ft. long; superstructure built in 1898; very good.

Bridge 267; Main line; crossing Eau Claire; riveted deck span; 80 ft. long; superstructure built in 1898. Riveted deck span; 157 ft. long; superstructure built in 1898. Riveted deck span; 157 ft. long; superstructure built in 1898. Riveted deck span; 80 ft. long; superstructure built in 1898; good bridge.

Bridge 272; Main line; Eau Claire; street crossing; pile bridge; superstructure built in 1899; in good condition.

Bridge 273; Main line; Eau Claire; crossing Chippewa river; latticed iron truss deck; 1 span; 80 ft. long; built in 1881. Latticed iron truss deck; 4 spans; 720 ft. long; built in 1881. Latticed iron truss deck; 1 span; 80 ft. long; built in 1881; very good bridge.

Bridge 279; Main line; pile bridge; 54 ft. long; built in 1887; poor bridge.

Bridge 283; Main line; iron latticed deck girder; 80 ft. long; built in 1887; reinforced in 1900.

Bridge 318; Main line; iron pin-connected, deck; 40 ft. 6 in.; superstructure built in 1897. Iron pin-connected, deck; 164 ft.; superstructure built in 1897. Iron pin-connected, deck; 60 ft. 10 in. long; superstructure built in 1897; very good bridge.

Bridge 329; Main line; pile bridge; 5 spans; 79 ft. long; built in 1891; poor bridge.

Bridge 345; Main line; pile bridge; 8 spans; 126 ft. long; built in 1890; poor bridge.

Bridge 352; Main line; iron latticed truss; 100 ft. long; superstructure built in 1885.

Bridge 356A; Main line; overhead highway bridge; 144 ft. superstructure built in 1899; in good repair.

Bridge 356B; Main line; overhead highway bridge; 200 ft. long; superstructure built in 1899; in good repair.

Bridge 391; Main line; pile culvert; 1 span; 14 ft. long; substructure built in 1885; to be replaced.

Bridge 408½; Main line; Hudson; crossing street in Hudson; plate girder, deck; 32 ft. 6 in.; in fair condition.

Bridge 414; Main line; Hudson; crossing St. Croix river; riveted latticed spans; 10 spans; 840 ft. long; superstructure built in 1898; substructure built in 1882; first class. Riveted latticed spans; 1 span; 157 ft. long; built in 1882; in good repair. Riveted latticed spans, draw; 1 span; 320 ft. long; built in 1881; in good repair.

Bridge 3; Menominee line; Menominee; crossing mill pond; pile and trestle bridge; 195 ft. long; built in 1896; in fair condition.

Bridge 5; Menominee line; Menominee; crossing Red Cedar river; pile approach; 27 spans; 406 ft. long; built in 1893. Howe truss; 2 spans; 290 ft. long; built in 1893; very fair condition.

Bridge 1; Ellsworth line; Hudson; riveted iron truss; 56 ft. long; supported by pile bents.

Bridge 6; Ellsworth line; pile bridge; 44 ft. long; built in 1891; to be rebuilt.

Bridge 8½; Ellsworth line; pile bridge; 56 ft. long; built in 1891; in fair repair.

Bridge 11; Ellsworth line; pile bridge; 90 ft. long; built in 1890; repair next year.

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*Bridge Inspection.*


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Bridge 16; Ellsworth line; crossing Kinnickinnic river; pile bridge; 338 ft. long; built in 1894; top needs repair.

Bridge 21; Ellsworth line; River Falls; Howe truss, through; 120 ft. long; built in 1896; very good.

Bridge 42; Ellsworth line; pile bridge; 142 ft. long; built in 1893; very good.

Bridge 57; Ellsworth line; Beldenville; pile bridge; 62 spans; 1,204 ft. long; built in 1894; in fair condition.

Bridge 59; Ellsworth line; pile bridge; 334 ft. long; built in 1895; very good.

Bridge 43; Mondovi line; Osseo; pile bridge; 110 ft. long; built in 1896; in good repair.

Bridge 45; Mondovi line; Osseo; pile bridge; 78 ft. 7 in. built in 1896; in good repair.

Bridge 64; Mondovi line; pile bridge; 62 ft. long; built in 1891; in good repair.

Bridge 70; Mondovi line; pile bridge; 78 ft. long; superstructure built in 1898; substructure built in 1897; very fair condition.

Bridge 73; Mondovi line; crossing Beef creek; pile bridge; 318 ft. long; fair condition.

Bridge 91; Mondovi line; pile bridge; 3 spans; 46 ft. long; built in 1899; very good.

Bridge 2; Marshfield line; Merrilon Jc.; east approach; 2 spans; 29 ft. long; superstructure built in 1898; substructure built in 1880. Howe truss span; 100 ft. long; superstructure built in 1898. West approach; 2 spans; 28 ft. long; built in 1898; very good.

Bridge 25; Marshfield line; Columbia; east approach; 72 ft. long; built in 1893. Howe truss; 60 ft. long; built in 1893. West approach; 41 ft. long; built in 1893; very good.

Bridge 43; Marshfield line; Neilsville; crossing Black river; east approach; 294 ft. long; built in 1899. Howe truss; 160 ft. long; built in 1887. Howe truss; 140 ft. long; built in 1887. West approach; 57 ft. long; built in 1898; very good repair.

Bridge 84; Marshfield line; Granton; pile bridge; 15 spans; 240 ft. long; built in 1890; some small repairs needed.

Bridge 105; Marshfield line; Cedarhurst; pile bridge; 302 ft. long; built in 1890.

Bridge 112; Marshfield line; pile approach; 112 ft. long. Howe truss; 120 ft. long. pile approach; 112 ft. long; false work now in for new iron bridge.

Bridge 117; Marshfield line; pile approach; 96 ft. long; built in 1890. Howe truss; 80 ft. long; built in 1890. pile approach; 96 ft. long; built in 1890; in fair repair.

BRIDGES INSPECTED ON THE NORTHERN DIVISION OF THE C., ST. P.,  
M. & O. RY.

Bridge 12; North line; Boardman; pile bridge; 219 ft. long; built in 1890; very good.

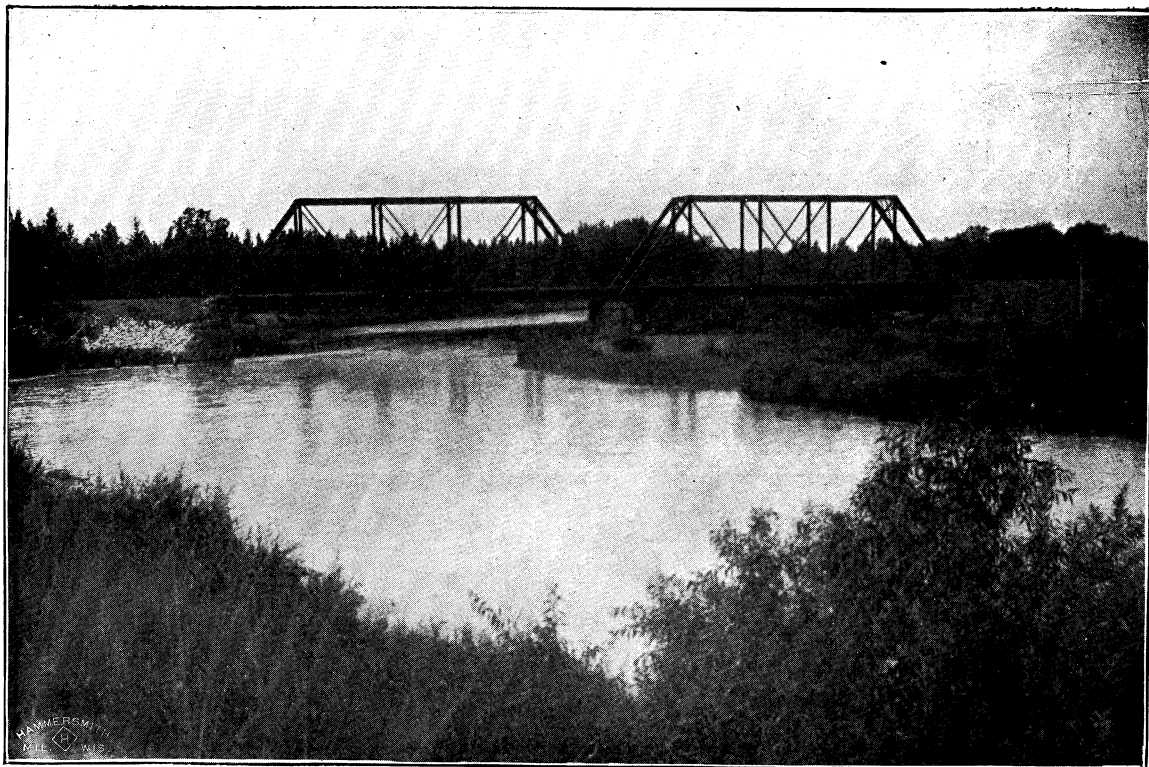
Bridge 32; North line; 3 miles north of Deer Park; pile bridge; 80 ft. long; built in 1897; very good.

Bridge 48; North line; pile bridge; 232 ft. long; built in 1898; well braced.

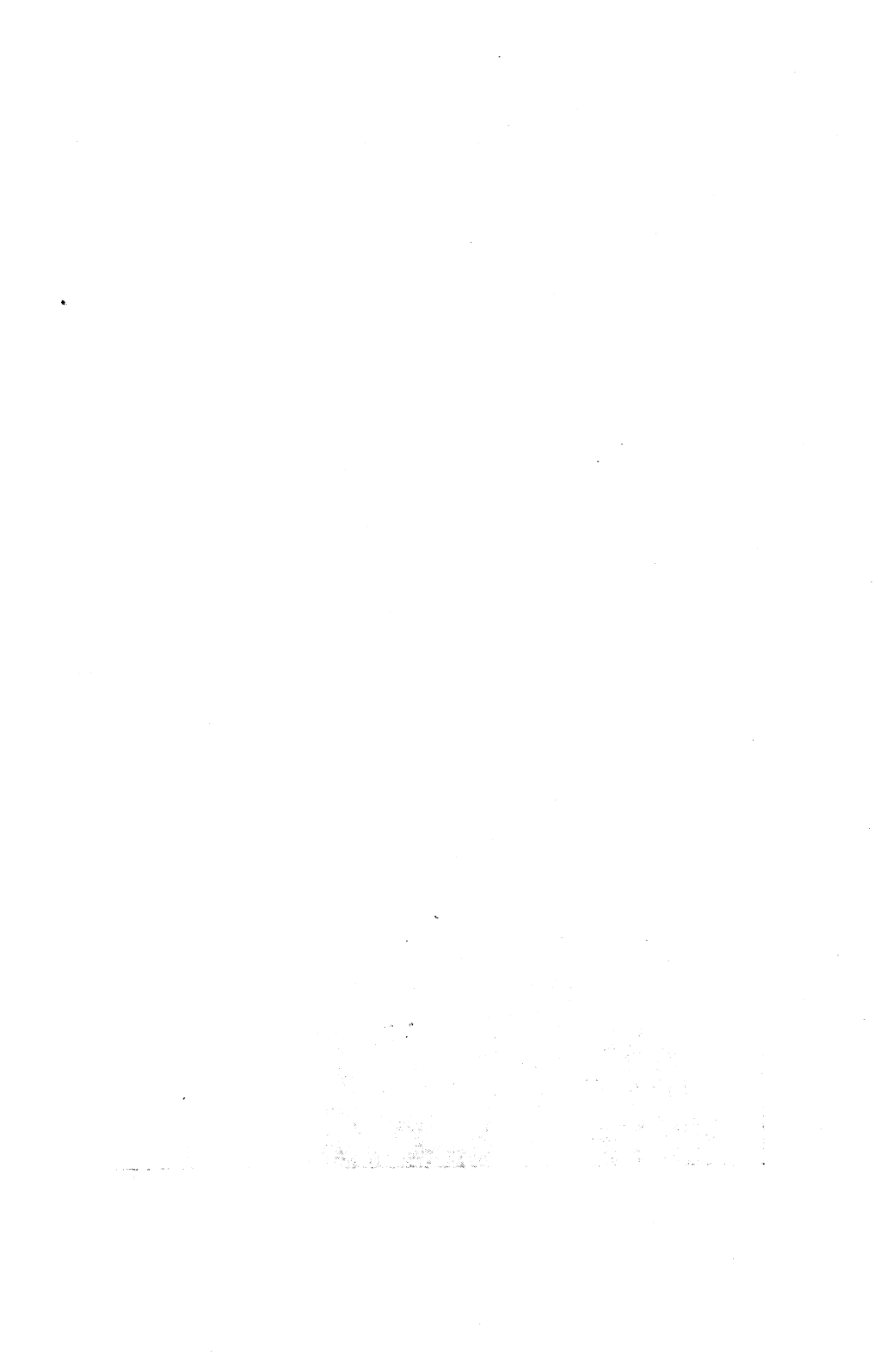
Bridge 123; North line; Cumberland; pile bridge; 252 ft. long; built in 1898; good bridge.

Bridge 127; North line; pile approach, iron deck span, pile approach; 272 ft. long; built in 1890; in good repair.

Bridge 150; North line; Granite Lake; pile bridge; 475 ft. long; built in 1898; first class.



WISCONSIN CENTRAL RAILWAY.—NO. 772. OVER RED CEDAR RIVER NEAR COLFAX.



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*Bridge Inspection.*

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- Bridge 172; North line; pile bridge; 160 ft. long; built in 1898; first class.
- Bridge 224; North line; trestle on piles; 285 ft. long; built in 1897; first class.
- Bridge 236; North line; pile bridge; 796 ft. long; superstructure built in 1897; substructure 1895; very good.
- Bridge 240; pile approach; 127 ft. long. Deck girder; 64 ft. long; built in 1888; very fair condition.
- Bridge 263; North line; Stinette; through iron span; 150 ft. long; built in 1892; very good.
- Bridge 278; North line; pile approach; 104 ft. long; built in 1892. Through iron span; 150 ft. long; built in 1892. Pile approach; 91 ft. long; built in 1892.
- Bridge 280; North line; crossing Rogers creek; pile approach; 110 ft.; built in 1891. Through plate girder; 64 ft. long; built in 1891.
- Bridge 283; North line; near Phipps; pile bridge; 608 ft. long; built in 1891; very good.
- Bridge 294; North line; pile bridge; 179 ft. long; built in 1892; very good.
- Bridge 302; North line; pile approach; 80 ft. long; built in 1900; first class. Deck iron span; 100 ft. long; built in 1890. Pile approach; 95 ft. long; built in 1899; first class.
- Bridge 322; North line; near Drummond; pile approach; 224 ft. long; built in 1899; good bridge. Through girder; 60 ft. long; built in 1892. Pile approach; 64 ft. long; built in 1899; good bridge.
- Bridge 328; North line; pile bridge; 178 ft. long; built in 1892; very good.
- Bridge 336; North line; pile bridge; 184 ft. long; superstructure built in 1899; substructure built in 1894; very good.
- Bridge No. 349; North line; at Sweden; pile bridge; 188 ft. long; built in 1894; in good shape.
- Bridge 359; North line; near Pratt; deck iron bridge; 540 ft. long; built in 1891.
- Bridge 363; North line; near Pratt; deck iron bridge; 117 ft. long; built in 1892.
- Bridge 373; North line; near Bibbon; pile and trestles on piles; 202 ft. long; built in 1892; first class.
- Bridge 374; North line; crossing Duluth & South Shore; through plate girder; very good.
- Bridge 380; North line; at Mason; crossing White river; pile bridge, iron truss, pile and frame bents; 743 ft. long; built in 1894; in fair condition.
- Bridge 399; North line; at Benoit; pile bridge; 348 ft. long; built in 1893; very good.
- Bridge 400; North line; near Benoit; pile bridge; 509 ft. long; built in 1894; not first class.
- Bridge 419; North line; deck iron bridge; 240 ft. long; built in 1891.
- Bridge 440; North line; near Ashland Junction; through iron span; 1 span; 126 ft. long; built in 1893.
- Bridge 458; North line; near Nash; pile bridge; 351 ft. long; built in 1893; very good.
- Bridge 464; North line; pile bridge; 877 ft. long; very good.
- Bridge 537; North line; Pike's Quarry; trestle, wood; 105 ft. long; built in 1895; well braced.
- Bridge 568; North line; Bayfield; pile bridge; 245 ft. long; built in 1895; in good condition.
- Bridge 4; Ashland line; pile bridge; 249 ft. long; built in 1895; very good.
- Bridge 19; Ashland line; pile bridge; 191 ft. long; built in 1890; tolerably good bridge.
- Bridge 24; Ashland line; pile bridge; 124 ft. long; built in 1890; tolerably good bridge.



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*Bridge Inspection.*


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Bridge 24a; Ashland line; Ashland; crossing street; pile approach; 3 spans; 37 ft. long; superstructure built in 1896. Through iron span; 1 span; 62 ft. long; superstructure built in 1896; first class. Pile approach; 4 spans; 64 ft. long; superstructure built in 1896.

Bridge —; Eau Claire line; Eau Claire; crossing Eddy street; overhead highway bridge; poor bridge.

Bridge 5; Eau Claire line; pile bridge; 63 ft. long; built in 1893; in fair repair.

Bridge 14; Eau Claire line; Chippewa Falls; crossing Chippewa river; iron spans; 5 spans; 690 ft. long; built in 1891. Iron spans; 1 span; 140 ft. long; built in 1891. Pile approach; 240 ft long; built in 1897; very good.

Bridge 28; Eau Claire line; pile approach; 121 ft. long; built in 1890; poor. Latticed truss; 72 ft. long; superstructure built in 1890. Pile approach; 33 ft. long; built in 1890; poor.

Bridge 51; Eau Claire line; near Bloomer; pile approach; 126 ft. long; built in 1892; very good. Iron, through plate girder; 53 ft. long; built in 1894; new floor system.

Bridge 78; Eau Claire line; near Chetek; crossing Chetek river; pile approach; 94 ft. long; built in 1891; in fair repair. Iron deck girder; 64 ft. long; built in 1892. Pile approach; 185 ft. long; built in 1891.

Bridge 92; Eau Claire line; crossing R. L. D. & M. Ry.; pile bridge; 168 ft. long; built in 1891; not in first class order.

Bridge 98; Eau Claire line; crossing Cedar river; through iron bridge; 238 ft. long; built in 1893.

Bridge 106; Eau Claire line; crossing Bear creek; pile approach; 79 ft. long; built in 1893; good bridge. Iron span; 126 ft. long; superstructure built in 1893. Pile approach; 26 ft. long; built in 1893; very good.

Bridge 113; Eau Claire line; near Haugen; pile approach; 110 ft. long; built in 1893. Iron bridge; 92 ft. long; built in 1893.

Bridge 114; Eau Claire line; at Haugen; crossing Bear creek; pile approach; 106 ft. long; superstructure built in 1893. Through latticed iron span; 114 ft. long; superstructure built in 1893. Pile approach; 157 ft. long; superstructure built in 1893.

Bridge 132; Eau Claire line; near Bashaw; pile bridge; 122 ft. long; built in 1893; good repair.

Bridge 1; Superior line; crossing Namakagon river; pile approach; 5 spans; 80 ft. long; built in 1898; very good. Deck iron span; 1 span; 150 ft. long; superstructure built in 1892. Pile approach; 140 ft. long; superstructure built in 1891; poor.

Bridge 39; Superior line; near Minong; crossing Totalatogec river; through iron latticed span; 126 ft. long; built in 1893.

Bridge 49; Superior line; at Gorden; pile approach; 450 ft. long; renewal in progress. Through iron span; 150 ft. long; built in 1891. Pile approach; 80 ft. long; built in 1898.

Bridge 61; Superior line; near Solon Spring; pile bridge; 295 ft. long; built in 1892; to be replaced by arch.

Bridge 62; Superior line; pile bridge; 272 ft. long; built in 1893; very fair condition.

Bridge 67; Superior line; near Sacontri; pile bridge; 133 ft. long; built in 1984; in fair condition.

Bridge 99; Superior line; deck iron girder; 3 spans; 160 ft. long; built in 1894.

Bridge 100; Superior line; Rock Mount; pile bridge; 84 ft. long; built in 1890; in good repair.

Bridge 146; Superior line; Itasca; pile bridge; 226 ft. long; built in 1894; not up to standard.

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*Bridge Inspection.*

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Bridge 147; Superior line; pile bridge; 298 ft. long; built in 1893; repairs needed.

Bridge 147a; Superior line; pile bridge; 298 ft. long; built in 1894; very good.

Bridge 150; Superior line; pile and trestle; 541 ft. long; superstructure built in 1897; very good.

Bridge 151; Superior line; crossing Nemadji river; pile approach; 70 ft. long; built in 1898; very good. Through riveted iron draw; 226 ft. long; built in 1884; new floor system. Trestle on piles; 2,030 ft. long; built in 1900; first class.

Bridge 157; Superior line; crossing over street; pile approach; superstructure built in 1898; very good. Iron girder, 50 ft. Pile approach; superstructure built in 1900; first class. Entire length 466 ft.

Bridge 159; Superior line; near West Superior; pile bridge; 191 ft. long; built in 1895; good bridge.

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BRIDGES INSPECTED ON THE PRAIRIE DU CHIEN DIVISION OF THE  
C., M. & ST. P. RY.

Bridge 10; Main line; at Milwaukee; crossing Menominee river; plate girder; 3 spans; 200 ft. long; first class.

Bridge 12; Main line; at Milwaukee; crossing Blue Mound road; viaduct; very good at present.

Bridge 22; Main line; Wauwatusa; crossing Menominee river; pin-connected through truss; 115 ft. 10 in. long; superstructure built in 1885.

Bridge 28; Main line; Kenyon; crossing Menominee river; pin-connected through truss; superstructure built in 1885.

Bridge 68½; Main line; near Eagle; overhead highway bridge; 74 ft. long; built in 1888; in good condition.

Bridge 92; Main line; near Whitewater; pile bridge; 111 ft. long; superstructure built in 1895; substructure built in 1884; in fair condition.

Bridge 140; Main line; near Edgerton; crossing Rock river; through iron girder; 8 spans; 609 ft. long; superstructure built in 1885; in good repair.

Bridge 162; Main line; crossing Cat-fish creek; pile bridge; 7 spans; 107 ft. long; superstructure built in 1893; substructure built in 1884; in fair repair.

Bridge 170; Main line; crossing in a swamp; pile bridge; 15 spans; 178 ft. long; superstructure built in 1898; substructure built in 1887; very good.

Bridge 190; Main line; crossing Lake Monona; pile bridge; 16 spans; 108 ft. long; built in 1891; very good repair.

Bridge 192; Main line; Madison; crossing Lake Monona; pile bridge; 7 spans; 160 ft. long; superstructure built in 1896; substructure built in 1886; very good repair.

Bridge 214; Main line; mile-post 111; pile bridge; 4 spans; 58 ft. long; built in 1891; fair condition only.

Bridge 216; Main line; crossing Black Earth creek; Howe truss bridge; 1 span; 67 ft. long; built in 1883; in fair repair.

Bridge 218; Main line; mile-post 112; pile bridge; 4 spans; 64 ft. long; built in 1899; good.

Bridge 230; Main line; crossing Black Earth creek; Howe truss, pony; 1 span; 67 ft. 6 in. long; built in 1883; in fair repair.

Bridge 236; Main line; crossing Black Earth creek; Howe truss, through; 1 span; 120 ft. long; built in 1883; poor.

Bridge 238; Main line; Howe truss, through; 1 span; 108 ft. long; built in 1883; poor.

Bridge 244; Main line; near Arena; through iron bridge; 1 span; 68 ft. long; superstructure built in 1886.

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*Bridge Inspection.*


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Bridge 250; Main line; Howe truss, pony; 1 span; 20 ft. 5 in. long; built in 1884; in good condition.

Bridge 256; Main line; near Spring Green; crossing Wisconsin river; pile approach; 1 span; 94 ft. long; built in 1890; needs repairing. Pin-connected, through; 1 span; 105 ft. long; built in 1886. Howe truss, pony; 2 spans; 134 ft. 8 in. long; built in 1884; poor. Pin-connected, through; 1 span; 102 ft. 8 in. long; built in 1886. Pin-connected, through; 2 spans; 210 ft. 6 in. long; built in 1886. Steel draw bridge; 205 ft. long; superstructure built in 1899. Iron truss; 105 ft. 3 in. long; built in 1886. Iron truss; 122 ft. 5 in. long; built in 1886. Pile approach; 913 ft. long; built in 1897; good.

Bridge 260; Main line; Lone Rock; crossing Wisconsin river; pile approach; 7 spans; 82 ft. long; superstructure built in 1890; substructure built in 1883; very good. Pin-connected iron truss; 1 span; 105 ft. 4 in. long; built in 1886. Pin-connected iron truss; 1 span; 102 ft. 8 in. long; built in 1886. Plate girder, draw; 135 ft. long; superstructure built in 1898. Pin-connected iron truss; 1 span; 102 ft. 8 in. long; built in 1886. Pin-connected iron truss; 4 spans; 421 ft. 4 in. long; built in 1886. Pile approach; 16 spans; 460 ft. long; built in 1896; very good.

Bridge 272½; Main line; iron girder culvert; 12 ft. long; superstructure built in 1900; first class.

Bridge 284; Main line; pile bridge; 108 ft. long; superstructure built in 1896; substructure built in 1887.

Bridge 310; Main line; Woodman; crossing Wisconsin river; pile approach; 62 ft. long; built in 1897. Pin-connected iron, through; 129 ft. 10 in. long; built in 1885. Iron girder, draw; 135 ft. long; superstructure built in 1895. Through iron truss, pin; 101 ft. 8 in. long; built in 1885. Through iron truss, pin; 129 ft. 10 in. long; built in 1885.

Bridge 312; Main line; pile bridge; 26 spans; 401 ft. long; superstructure built in 1897; substructure built in 1887; in good condition.

Bridge 314; Main line; crossing Wisconsin river; pile approach; 79 ft. long; built in 1891; very good. Pin-connected iron truss; 3 spans; 311 ft. long; built in 1885. Pin-connected iron truss; 1 span; 105 ft. 10 in. long; built in 1885. West approach, pile; 79 ft. 6 in. long; built in 1891; poor.

Bridge 316; Main line; pile bridge; 1,119 ft. long; superstructure built in 1897; substructure built in 1887; some poor piles.

Bridge 318; Main line; near Wauzeka; pile approach; 248 ft. long; superstructure built in 1890; substructure built in 1888; repairs needed. Howe truss, through; 111 ft. long; superstructure built in 1884; in good repair. Pile approach; 31 ft. 6 in. long; built in 1890; repairs needed.

Bridge 378; Main line; Prairie Du Chien; crossing Mississippi river; pile approach; 849 ft. long; built in 1898. Iron girder; 36 ft. long; built in 1898. Iron girder; 41 ft. 6 in. long; built in 1898. Pontoon bridge; 409 ft. long; built in 1898. Iron girder; 41 ft. 6 in. long; built in 1898. Iron girder; 36 ft. long; built in 1898. Pile approach; 817 ft. long; built in 1898. Entire bridge is first class in all respects.

Bridge 400; Prairie du Sac line; Howe truss; 86 ft. long; built in 1883; poor. Bridge 428; Prairie du Sac line; Prairie du Sac; crossing Wisconsin river; pile approach; 95 spans; 1,464 ft. long; built in 1890; partly filled, poor. Howe truss; 3 spans; 309 ft. long; built in 1893; very good. Pile bridge; 40 spans; 611 ft. long; built in 1890; poor, to be renewed. Howe truss; 103 ft. long; built in 1893; in fair condition. Wood draw span; 191 ft. long; built in 1893; poor. Howe truss; 114 ft. long; built in 1893; very good.

Bridge 510; Richland Center line; crossing in swamp; pile bridge; 26 spans; 409 ft. long; built in 1889; very poor.

Bridge 512; Richland Center line; crossing Bear creek; pile bridge; 187 ft. long; superstructure built in 1894; substructure built in 1883; piles poor. \*

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*Bridge Inspection.*


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Bridge 522; Richland Center line; pile bridge; 203 ft. long; built in 1891; very good repair.

Bridge 544; Richland Center line; at Richland Center; pile bridge; 14 spans; 218 ft. long; built in 1899; very good.

## BRIDGES INSPECTED ON MINERAL POINT DIVISION OF C. M. &amp; ST. P. RY

Bridge 14; Main line; Janesville; crossing Bluff St.; girder span; 1 span; 66 ft. long; superstructure built in 1890; substructure built in 1883.

Bridge 16; Main line; Janesville; crossing Main St.; girder span; 1 span; 66 ft. long; superstructure built in 1890; substructure built in 1883.

Bridge 18; Main line; Janesville; crossing Rock river; pin-connected deck; 3 spans; 366 ft. long; superstructure built in 1883.

Bridge 20; Main line; Janesville; crossing River St.; latticed deck span; 44 ft. long.

Bridge 22; Main line; Janesville; crossing Franklin St.; iron girders; 2 spans; 58 ft. 4 in. long; built in 1883.

Bridge 28; Main line; iron trestle; 96 ft. 3 in. long; superstructure built in 1894.

Bridge 52; Main line; Hanover Junction; pile bridge; 188 ft. long; built in 1888; poor bridge.

Bridge 82; Main line; near Brodhead; pile bridge; 125 ft. long; built in 1888.

Bridge 84; Main line; crossing Sugar creek; pile approach; 61 ft. long; built in 1895; repairs needed. Howe truss; 108 ft. long; built in 1884. Pile approach; 125 ft. long; built in 1895.

Bridge 90; Main line; pile bridge; 281 ft. long; built in 1888; in bad condition.

Bridge 39; Main line; stone arch, 32 ft.; superstructure built in 1869; very good.

Bridge 136; Main line; near Monroe; overhead highway bridge; 197 ft. long; built in 1893; good order.

Bridge 140; Main line; at Monroe; overhead highway bridge; 80 ft. 4 in. long; built in 1897.

Bridge 144; Main line; crossing Illinois Central Ry.; through iron girder; 44 ft. long; built in 1888; floor needs to be renewed.

Bridge 146; Main line; frame bents on masonry; 14 spans; 248 ft. long; built in 1890; very bad condition.

Bridge 150; Main line; overhead highway bridge; 57 ft. 4 in. long; built in 1881; repairs needed.

Bridge 182; Main line; crossing Pecatonica river; two iron trusses; 212 ft. long; built in 1888.

Bridge 204; Main line; crossing Spafford's creek; pile approach; 2 spans; 28 ft. long; built in 1891. Howe truss, deck; 1 span; 66 ft. 10 in. long; built in 1891. Pile approach; 2 spans; 29 ft. long; built in 1891. In fair repair.

Bridge 206; Main line; near South Wayne; overhead highway bridge; 86 ft. long; built in 1894.

Bridge 232; Main line; crossing Pecatonica river; Howe truss bridge; 147 ft. long; superstructure built in 1891; substructure built in 1881; repairs needed.

Bridge 234; Main line; Howe truss bridge; 2 spans; 167 ft. long; superstructure built in 1891; repairs needed.

Bridge 260; Main line; near Gratiot; Howe truss bridge; 87 ft. long; superstructure built in 1894; in fair condition.

Bridge 264; Main line; near Gratiot; Howe truss bridge, pony; 67 ft. 6 in. long; built in 1892; in good repair.

Bridge 270; Main line; near Gratiot; crossing Pecatonica river; Howe truss

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*Bridge Inspection.*


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bridge, through, 108 ft. 3 in. long; superstructure built in 1894; substructure built in 1883; in fair condition.

Bridge 272; Main line; crossing Pecatonica river; Howe truss, through; 2 spans; 168 ft. long; built in 1893; in fair condition.

Bridge 274; Main line; Pecatonica river; Howe truss, pony; 2 spans; 152 ft. 6 in. long; superstructure built in 1893; substructure built in 1883; very good shape.

Bridge 282; Main line; crossing Pecatonica river; Howe truss, pony; 2 spans; 107 ft. long; superstructure built in 1894; substructure built in 1856; in fair condition.

Bridge 284; Main line; crossing Pecatonica river; Howe truss, pony; 2 spans; 136 ft. long; superstructure built in 1893; substructure built in 1883; in fair condition.

Bridge 810; New Glaris line; near Albany; crossing Sugar creek; pile bridge; 22 spans; 350 ft. long; built in 1897; first class.

Bridge 618; Shullsburg line; pile bridge; 57 ft. long; superstructure built in 1891; substructure built in 1888; repairs needed.

Bridge 628; Shullsburg line; pile bridge; 114 ft. long; superstructure built in 1894; substructure built in 1883; poor bridge.

Bridge 404; Platteville line; crossing Pecatonica river; Howe truss, pony; 2 spans; 112 ft. 6 in. long; superstructure built in 1893; substructure built in 1869; in fair condition.

Bridge 410; Platteville line; Howe truss, pony; 73 ft. 10 in. long; superstructure built in 1893; in fair condition.

Bridge 420; Platteville line; Howe truss, pony; 63 ft. 4 in. long; superstructure built in 1893; substructure built in 1882; poor.

Bridge 428; Platteville line; Howe truss, pony; 42 ft. long; superstructure built in 1892; substructure built in 1869; poor.

Bridge 430; Platteville line; Howe truss, pony; 58 ft. long; superstructure built in 1891; substructure built in 1882; poor.

Bridge 436; Platteville line; Howe truss, pony; 48 ft. long; superstructure built in 1891; substructure built in 1869; repairs needed.

Bridge 438; Platteville line; Howe truss, pony; 48 ft. long; superstructure built in 1891; substructure built in 1869; poor bridge.

Bridge 450; Platteville line; Howe truss, pony; 58 ft. long; superstructure built in 1892; substructure built in 1882; in fair condition.

Bridge 460; Platteville line; iron girder; 45 ft. long; superstructure built in 1895; in fair condition.

Bridge 478; Platteville line; Howe truss, pony; 58 ft. long; superstructure built in 1891; substructure built in 1883; repairs needed.

Bridge 528; Platteville line; crossing C. & N. W. Ry.; overhead railway bridge; should be replaced by iron girder.

Bridge 530; Platteville line; overhead highway bridge; 53 ft. 6 in. long; built in 1897; in fair condition.

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 BRIDGES INSPECTED ON LA CROSSE DIVISION OF C., M. & ST. P. RY.
 

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Bridge 8; Main line; near Soldiers' Home; overhead highway bridge; 100 ft. long; built in 1887; in fair condition.

Bridge 12¾; Main line; crossing Moler Co.; overhead bridge; 134 ft. long; superstructure built in 1894; in good repair.

Bridge 16½; Main line; overhead highway bridge; 98 ft. long; built in 1898; good bridge.

Bridge 18; Main line; Elm Grove; plate girder on concrete; built in 1900; first class.

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*Bridge Inspection.*

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Bridge 52; Main line; rail-top culvert (8 ft. by 5 ft.); superstructure built in 1900; first class.

Bridge 64; Main line; deck plate girder; 60 ft. long; built in 1899; concrete reinforcements.

Bridge 66; Main line; Gifford; crossing Oconomowoc river; plate girder; 155 ft. long; built in 1899; concrete reinforcement.

Bridge 68½; Main line; overhead highway bridge; built in 1899; entirely first class.

Bridge 70; Main line; crossing Rock river; plate girder; 65 ft. long; substructure built in 1900. Plate girder; 2 spans; 124 ft. long; substructure built in 1900. Plate girder; 2 spans; 43 ft. 6 in. long; substructure built in 1900. Abutments raised 7½ feet account of change in grade.

Bridge 76½; Main line; west of Ixonia; overhead highway bridge; 108 ft. long; substructure built in 1899; good bridge.

Bridge 80; Main line; crossing Rock river; plate girder; 6 spans; 325 ft. long; superstructure built in 1884; substructure built in 1866.

Bridge 82; Main line; rail-top culvert (12 ft. by 6 ft.); superstructure built in 1900; first class.

Bridge 92; Main line; pin-connected truss; 2 spans; 148 ft. long; superstructure built in 1884; substructure built in 1866. Pin-connected truss; 2 spans; 177 ft. 8 in. long; built in 1884.

Bridge 106; Main line; mile-stone 517; pile approach; 1 span; 16 ft. long; built in 1899; first class. Iron girders; 2 spans; 100 ft. long; built in 1899; first class. Pile approach; 4 spans; 59 ft. long; built in 1899; first class.

Bridge 220; Main line; Portage; crossing Fox river; iron girder, draw; 115 ft. 9 in. long; built in 1888; good bridge.

Bridge 250; Main line; Kilbourne; crossing Wisconsin river; deck truss bridge; 56 ft. 11 in. long; superstructure built in 1877; substructure built in 1856. Deck truss bridge; 243 ft. long; superstructure built in 1877; substructure built in 1856. Deck truss bridge; 68 ft. 6 in. long; superstructure built in 1877; substructure built in 1856. Deck truss bridge; 69 ft. 5 in. long; superstructure built in 1877; substructure built in 1856.

Bridge 252½; Main line; rail-top culvert (12 ft. by 10 ft.); superstructure built in 1900; first class.

Bridge 428; Main line; Sparta; crossing Walrath creek; Howe truss, deck; 56 ft. long; substructure built in 1863; being replaced.

Bridge 456½; Main line; deck plate girder; 10 ft. long; superstructure built in 1894; safe bridge.

Bridge 530; Main line; S. La Crosse; pile bridge; 13 spans; 201 ft. 6 in. long; built in 1885; in fair condition.

Bridge 556; Watertown line; near Hubbleton; crossing Crawfish lake; pile bridge; 26 spans; 416 ft. long; superstructure built in 1899; substructure built in 1888; in fair condition.

Bridge 566½; Watertown line; Waterloo; overhead highway; 96 ft. long; built in 1887; needs renewing.

Bridge 602; Watertown line; near Burke; overhead highway; 182 ft. long; built in 1892; first class repair.

Bridge 611; Watertown line; Madison; crossing Catfish creek; pile bridge; 119 ft. long; superstructure built in 1896; substructure built in 1886; in fair repair.

Bridge 686; Portage line; overhead highway; 5 spans; 75 ft. 8 in. long; built in 1891; in fair repair.

Bridge 870; Viroqua line; near Melvina; pile bridge; 6 spans; 92 ft. long; built in 1889; being replaced.

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*Bridge Inspection.*


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## BRIDGES INSPECTED ON WISCONSIN VALLEY DIVISION OF C. M. &amp; ST. P. RY.

Bridge 158; Main line; Babcock; crossing Yellow river; pile approach; 35 spans; 560 ft. long; built in 1897; very good. Howe truss; 138 ft. long; built in 1890; new bridge being put in. Pile approach; 5 spans; 78 ft. long; built in 1897; very good.

Bridge 260; Main line; crossing Mill creek; pile approach; 8 spans; 124 ft. long; built in 1896; very good. Howe truss; 1 span; 58 ft. long; built in 1885; in good repair. Pile approach; 16 ft. long; built in 1896; all right.

Bridge 276; Main line; crossing Wisconsin river; through iron span; 135 ft. long; built in 1894; first class. Through iron span; 217 ft. 6 in. long; built in 1894; first class. Through iron span; 147 ft. long; built in 1894; first class.

Bridge 312; Main line; mile-post 86; crossing Eau Claire river; pile approach; 3 spans; 48 ft. long; built in 1897; very good. Howe truss, deck; 3 spans; 330 ft. long; built in 1886; being renewed. Pile approach; 3 spans; 48 ft. long; built in 1897; very good.

Bridge 382; Main line; mile-post 108; crossing Prairie river; pile approach; 3 spans; 44 ft. long; built in 1891; in fair condition. Howe truss; 60 ft. long; built in 1891; in fair condition. Pile approach; 46 spans; 721 ft. long; built in 1891; in fair condition.

Bridge 388; Main line; Merrill; crossing Wisconsin river; pile approach; 8 spans; 136 ft. long; built in 1895; in fair repair. Howe truss; 68 ft. long; built in 1895; in fair repair. Howe truss; 92 ft. 6 in. long; built in 1895; in fair repair. Pile approach; 16 ft. long; built in 1895; in fair repair.

Bridge 448; Main line; mile-post 130; crossing Wisconsin river; pile approach; 11 spans; 171 ft. long; built in 1897. Iron girder, deck; 30 ft. long; built in 1899. Pile bridge; 11 spans; 171 ft. long; built in 1899. Iron girder, through; 32 ft. long; built in 1890. Iron truss, pony; 100 ft. long; built in 1899. Pile approach; 6 spans; 94 ft. long; built in 1897. Good bridge throughout.

Bridge 506; Main line; mile-post 161; crossing Minocqua lake; pile approach; 24 spans; 378 ft. long; built in 1898; first class. Iron girder; 48 ft. long; built in 1899; first class. Pile approach; 4 spans; 64 ft. long; built in 1896; in good condition.

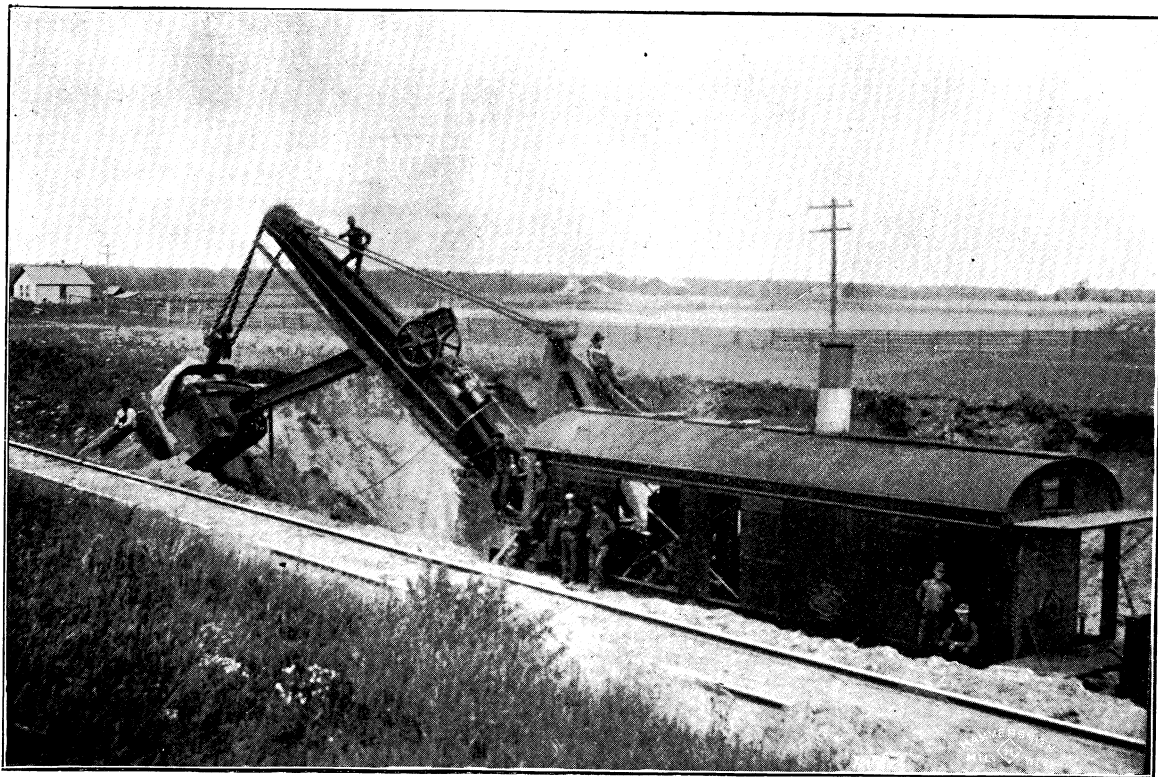
Bridge 842; Lynn line; mile-post 39; crossing Yellow river; pile approach; 3 spans; 51 ft. long; built in 1894; piles show weakness. Howe truss; 136 ft. 3 in. long; built in 1894; all right. Pile approach; 40 spans; 623 ft. long; built in 1894; very good.

## BRIDGES INSPECTED ON SUPERIOR DIVISION OF C. M. &amp; ST. P. RY.

Bridge 44; Main line; mile-post 23.5; crossing Cedar creek; deck Howe truss; 101 ft. long; built in 1891.

Bridge 52; Main line; near Fredonia; crossing Milwaukee river; pile approach; 45 ft. long; built in 1891; in fair condition. Howe truss; 222 ft. long; built in 1891; in fair condition. Pile approach; 46 ft. 3 in. long; built in 1891; in fair condition.

Bridge 222; Main line; Green Bay; crossing Fox river; pile approach; 15 spans; 204 ft. long; superstructure built in 1891; substructure built in 1881; very good. Combination, draw; 201 ft. long; built in 1881; safe at present. Pile approach; 30 spans; 430 ft. long; superstructure built in 1891; substructure built in 1881; very good.



WISCONSIN GENERAL RAILWAY.—FIVE YARDS STEAM SHOVEL AT WORK.





*Bridge Inspection.*

Bridge 242; Main line; near Cormier; crossing Duch creek; pile approach; 18 ft. 3 in. long; built in 1889; not very good. Howe truss, pony; 2 spans; 96 ft. long; built in 1897; in fair condition. Pile approach; 29 ft. long; built in 1889; not very good.

Bridge 272; Main line; near Sobieski; Little Suamico river; pile approach; 11 spans; 172 ft. long; built in 1891. Howe truss, pony; 53 ft. long; built in 1891. Pile approach; 6 spans; 91 ft. long; built in 1891. Not in first class order.

Bridge 300; Main line; mile-post 139; crossing Oconto river; pile approach; 6 spans; 93 ft. long; built in 1891; fair repair. Howe truss; 136 ft. long; built in 1891; fair repair. Pile approach; 4 spans; 62 ft. long; built in 1891; piles poor.

Bridge 376; Main line; mile-post 164.2; crossing Peshtigo river; pile approach; 14 ft. long; built in 1892. Howe truss; 114 ft. long; built in 1892. Pile approach; 16 spans; 216 ft. long; built in 1892. Several bents have been reinforced.

Bridge 390; Main line; mile-post 169.5; crossing Middle inlet; East approach, pile; 3 spans; 47 ft. long; built in 1893. Howe truss, pony; 58 ft. long; built in 1892. West approach, pile; 6 spans; 94 ft. long; built in 1893. Efficient for present requirements.

Bridge 404; Main line; near Wausaukee; crossing Big Wausaukee; pile approach; 15 ft. long; built in 1893; repairs needed soon. Howe truss, pony; 65 ft. long; built in 1892; not first class. Pile approach; 77 ft. long; built in 1893; not first class.

Bridge 434; Main line; Amburg; crossing Pike river; trestle approach; 2 spans; 32 ft. long; built in 1894; very good repair. Howe truss; 93 ft. long; built in 1894; very good repair. Pile approach; 2 spans; 30 ft. long; built in 1894; very good repair.

Bridge 464; Main line; state line; crossing Menominee river; pile approach; 6 spans; 89 ft. long; built in 1896. Pin-connected truss, deck; 255 ft. long; superstructure built in 1896. Plate girder, deck; 40 ft. long; superstructure built in 1896. Pile approach; 2 spans; 30 ft. long; built in 1896.

## BRIDGES INSPECTED ON THE SUPERIOR DIVISION OF THE C. M. &amp; ST. P. RY.

Bridge 802; Oconto line; crossing Oconto river; pile approach; 8 spans; 120 ft. long; built in 1889; in fair condition. Howe truss; 135 ft. long; built in 1889; needs attention. Pile approach; 3 spans; 45 ft. long; built in 1889; very good.

Bridge 820; Menominee line; mile-post 167.6; pile approach; 2 spans; 32 ft. long; built in 1894. Howe truss; 92 ft. long; built in 1894. Pile approach; 16 ft. long; built in 1894. Very fair condition.

Bridge 874; Menominee line; Marinette; crossing Menominee river; pile approach; 10 spans; 153 ft. long; built in 1896; in good condition. Howe truss; 3 spans; 376 ft. long; built in 1896; good truss. Pile approach; 3 spans; 48 ft. long; built in 1896; in good condition.

Bridge 876; Menominee line; state line; crossing Menominee river; pile approach; 2 spans; 29 ft. long; built in 1896. Iron span, pony; 3 spans; 348 ft. 8 in. long; built in 1896; first class. Iron girder, deck; 35 ft. long; built in 1896. Pile approach; 108 ft. 6 in. long; built in 1896.

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*Bridge Inspection.*


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 BRIDGES INSPECTED ON THE NORTHERN DIVISION OF THE C. M. & ST. P. RY.
 

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Bridge 508; Main line; Beaver Dam; crossing Beaver Dam river; pile bridge; 23 spans; 355 ft. long; superstructure built in 1898; substructure built in 1889;

Bridge 562; Main line; Portage; crossing canal; pile approach; 16 ft. long; built in 1892; in good repair. Iron girder, draw; 123 ft. long; built in 1892; very good. Pile approach; 12 ft long; built in 1892; fair condition.

Bridge 88; Oshkosh line; crossing Rock river; pile bridge; 16 spans; 196 ft. long; superstructure built in 1891; substructure built in 1883; poor bridge.

Bridge 114; Oshkosh line; crossing Rock river; pile bridge; 2 spans; 32 ft. long; built in 1896. Howe truss; 78 ft. long; built in 1896. Pile approach; 24 ft. long; built in 1896. Good bridge.

Bridge 620; Fond du Lac line; near Mayville; crossing Rock river; Howe truss; 98 ft. long; superstructure built in 1896; substructure built in 1884; in fair repair. Pile approach; 2 spans; 30 ft. long; superstructure built in 1896; substructure built in 1884; some piles weak.

Bridge 748; Fond du Lac line; crossing Fond du Lac river; pile bridge; 8 spans; 128 ft. long; superstructure built in 1894; substructure built in 1884; some poor piles.

Bridge 802; North Lake line; crossing Menominee river; trestle bridge; 3 spans; 48 ft. long; built in 1888; on side track.

Bridge 808; North Lake line; crossing Wisconsin Central Ry.; trestle bridge; 10 spans; 164 ft. long; superstructure built in 1899; substructure built in 1888; being repaired.

## BRIDGES INSPECTED ON RACINE &amp; SOUTHWESTERN DIVISION OF THE C. M. &amp; ST. P. RY.

Bridge 72; Main line; near Burlington; crossing Fox river; Howe truss; 4 spans; 364 ft. long; superstructure built in 1881; to be renewed quite soon.

Bridge 84; Main line; near Lyons; crossing White river; Howe truss; 90 ft. long; built in 1882; poor bridge.

Bridge 156; Main line; pile approach; 14 ft. long; built in 1890. Howe truss; 120 ft. long; built in 1890. Pile approach; 76 ft. long; built in 1890. Concrete abutments and piers being put in.

Bridge 178; Main line; mile-post 62; iron girder; 43 ft. 8 in. long; superstructure built in 1898; old abutments.

Bridge 180; Main line; mile-post 63; iron girder; 2 spans; 124 ft. long; superstructure built in 1900; first class.

Bridge 184; Main line; iron girder; 2 spans; 80 ft. long; superstructure built in 1900; very good.

Bridge 186; Main line; crossing Turtle creek; Howe truss; 62 ft. long; superstructure built in 1893; poor bridge.

Bridge 208; Beloit line; mile-post 67; iron truss, pony; 2 spans; 217 ft. long; built in 1896; good bridge.

## BRIDGES INSPECTED ON THE CHICAGO DIVISION OF THE C. M. &amp; ST. P.

Bridge 262; Main line; Iron deck girder; 3 spans; 195 ft. long; superstructure built in 1890.

Bridge 314; Main line; Milwaukee; crossing Kinnickinnick river; draw span, iron; 172 ft. 6 in. long; superstructure built in 1881; masonry not first class.

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*Bridge Inspection.*

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## BRIDGES INSPECTED ON SOUTHERN DIVISION OF WISCONSIN CENTRAL RY.

Bridge 337; 1st District line; mile-post 132.6; crossing Rock river; pile bridge; 10 spans; 158.5 ft. long; superstructure built in 1899; very good.

Bridge 392; 1st District line; Fond du Lac; pile approach; 8.5 ft. long; superstructure built in 1898. Pin-connected truss, through; 170 ft. long; superstructure built in 1898.

Bridge 398; 1st District; Fond du Lac; pin-connected truss, through; 150 ft. long; built in 1898.

Bridge 429; 2nd District; Oshkosh; crossing Fox river; pile approach; 16 spans; 232 ft. long; very good. Through plate girder, draw; 132 ft. 8 in. long; to be replaced soon. Howe truss, through; 2 spans; 223 ft. long; in fair condition. Pile approach; 6 spans; 93 ft. long; very good.

Bridge 450; 2nd District; Neenah; trestle bridge; 6 spans; 96 ft. long; built in 1895; in good condition.

Bridge 487; 2nd District; crossing Wolf river; pile approach; 24 spans; 345 ft. long; built in 1894; very good. Plate girder, draw; 160 ft. 9 in. long; built in 1894. Pile approach; 52 spans; 794 ft. long; built in 1894; first class.

Bridge 532; 2nd District; crossing Plover river; tail wall; 26 ft. 2 in. long; built in 1898. Plate girder; 78 ft. 5 in. long; superstructure built in 1898; on concrete bridge seat. Tail wall; 26 ft. 2 in. long; built in 1898.

Bridge 533; 2nd District; Stephens Point; crossing Wisconsin river; through steel truss; 183 ft. 5 in. long; superstructure built in 1889. Through steel truss; 189 ft. 5 in. long; superstructure built in 1889. Through steel truss; 198 ft. 6 in. long; superstructure built in 1889.

Bridge 606; 2nd District; mile-post 295.8; crossing Little Eau Claire river; pile bridge; 210 ft. long; built in 1892; in fine condition.

Bridge D; Portage branch of 2nd District; mile-post 1.9; crossing Plover river; frame bent; 2 spans; 32 ft. 6 in. long; built in 1897; very good. Plate girder, deck; 40 ft. long; built in 1896. Frame bent; 2 spans; 32 ft. 2 in. long; built in 1897; very good.

Bridge D3; Portage branch of 2nd District; mile-post 3; pile bridge; 16 spans; 241 ft. long; superstructure built in 1895; piles show rot at surface of the ground.

Bridge D12; Portage branch of 2nd District; mile-post 8.6; crossing Beuna Vista creek; pile bridge; 10 spans; 136 ft. long; superstructure built in 1895; good bridge.

Bridge D39; Portage branch of 2nd District; near Westfield; pile bridge; 5 spans; 74 ft. long; superstructure built in 1895; in good repair.

Bridge D45; Portage branch of 2nd District; mile-post 45.6; crossing Montello creek; pile bridge; 10 spans; 154 ft. long; superstructure built in 1893; in fair condition.

Bridge D60; Portage branch of 2nd District; mile-post 56.6; pile bridge; 11 spans; 164 ft. long; superstructure built in 1892; in fair condition.

Bridge D66; Portage branch of 2nd District; mile-post 59; overhead highway bridge; 5 spans; 81 ft. long; built in 1892; very good bridge.

Bridge D91; Portage branch of 2nd District; mile-post 67.7; crossing Fox river canal; pile bridge; 2 spans; 29 ft. long; built in 1894; very good. Jack-knife draw span; 68 ft. 6 in. long; built in 1894; efficient. Pile bridge; 2 spans; 32 ft. long; built in 1894; very good.

Bridge D96; Portage branch of 2nd District; mile-post 69.6; crossing Fox river; pile bridge; 11 spans; 164 ft. long; built in 1892; in good repair.

Bridge D97; Portage branch of 2nd District; crossing Fox river; pile bridge; 8 spans 115 ft. long; built in 1892; sway bracing needed.

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*Bridge Inspection.*


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 BRIDGES BEING INSPECTED ON THE NORTHERN DIVISION OF WISCONSIN CENTRAL RY.
 

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Bridge 629; 3rd District; mile-post 312; crossing Poplar river; Howe truss; 86 ft. long; superstructure built in 1893; being repaired.

Bridge 668; 3rd District; mile-post 333; crossing Little Wolf river; pile bridge; 14 spans; 236 ft. long; built in 1891; being rebuilt.

Bridge 715; 3rd District; mile-post 353; crossing Paint creek; pile bridge; 6 spans; 93 ft. long; substructure built in 1891. Fink truss; 32 ft. long; substructure built in 1891. Pile bridge; 6 spans; 94 ft. long; substructure built in 1891; grade raised 7 ft; bridge poor; to be replaced next year.

Bridge 722; 3rd District; at Chippewa Falls; crossing Chippewa river; plate girder, deck; 1 span; 60 ft. long; built in 1898. Through steel truss; 3 spans; 300 ft. long; superstructure built in 1894. Through steel truss; 4 spans; 598 ft. long; superstructure built in 1894. Pile bridge; 1 span; built in 1898.

Bridge 724; 3rd District; mile-post 357; crossing Duncan creek; pile bridge; 9 spans; 140 ft. long; built in 1900; very good. Steel truss; 122 ft. long; superstructure built in 1894. Pile bridge; 4 spans; 62 ft. long; built in 1900; very good.

Bridge 772; 3rd District; near Colfax; crossing Red Cedar river; through, pin-connected, steel truss; 2 spans; 240 ft. long; built in 1896.

Bridge 788; 3rd District; mile-post 386; crossing Hay river; plate girder, through; 60 ft. long; built in 1900. through, pin-connected, steel truss; 120 ft. long; built in 1896.

Bridge 882; 3rd District; mile-post 418; crossing Willow river; pile bridge; 6 spans; 84 ft. long; built in 1896; first class. Through, steel truss; 120 ft. long; built in 1896. Pile bridge; 4 spans; 56 ft. long; built in 1896; good.

Bridge A128; 4th District; mile-post 358; crossing Elk river; pile bridge; 8 spans; 102 ft. long; superstructure built in 1895. Deck plate girder; 80 ft. long; superstructure built in 1895. pile bridge; 5 spans; 65 ft. long; superstructure built in 1895.

Bridge A141; 4th District; mile-post 371; crossing East Fork Flambeau river; pile bridge; 15 spans; 218 ft. long. Howe truss, through; 96 ft. 7 in. long; superstructure built in 1893. Pile bridge; 4 spans; 60 ft. long; very good condition.

Bridge A153; 4th District; mile-post 375; pile approach; 1 span; 16 ft. long. Through steel truss; 1 span; 135 ft. long. Pile approach; 1 span; 16 ft. long.

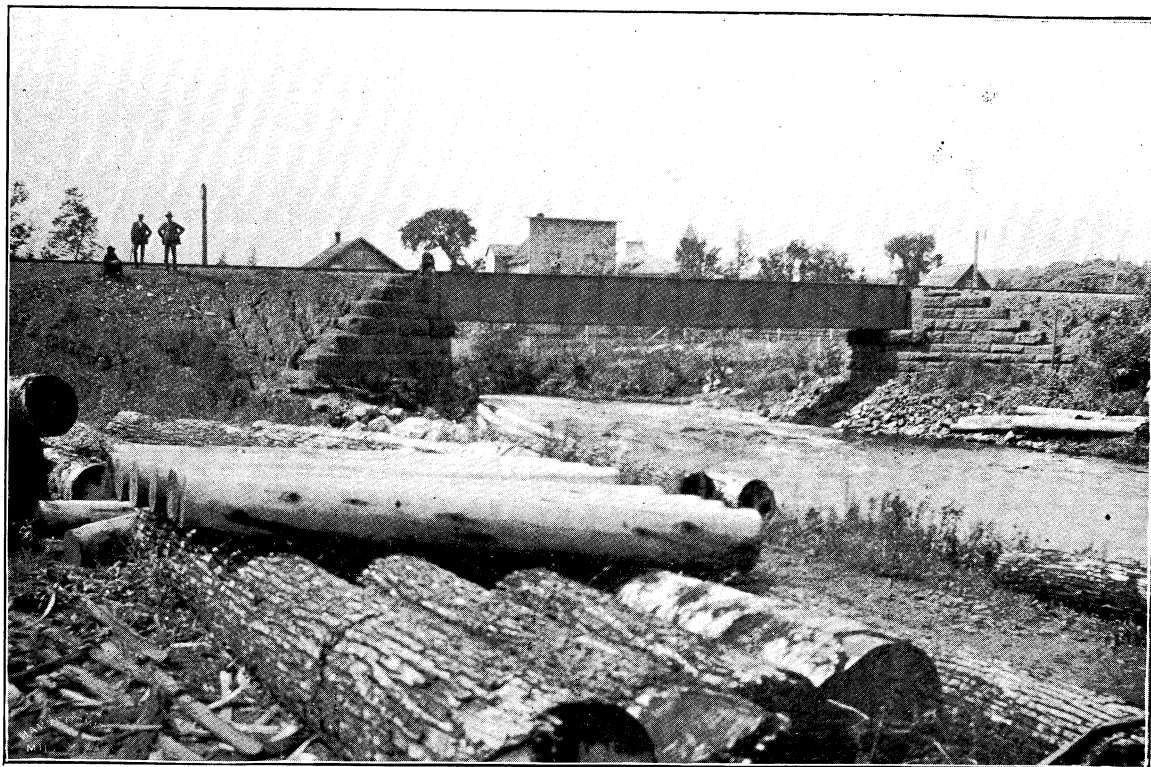
Bridge A221; 4th District; mile-post 406; crossing Bad river; pile approach; 5 spans; 67 ft. long; built in 1896. Deck plate girder; 1 span; 50 ft. long; built in 1896. Pile approach; 3 spans; 41 ft. long; built in 1896.

Bridge —; 4th District; mile-post 416; crossing Silver creek; iron trestle; 21 spans; 638 ft. 9 in. long; built in 1872.

Bridge A274; 4th District line; mile-post 420; pile bridge; 18 spans; 271 ft. long; built in 1893; very good bridge.

Bridge —; 4th District line; crossing White river; iron trestle; 7 spans; 210 ft. long; built in 1872. Iron truss, deck; 1 span; 125 ft. long; built in 1872. Iron trestle; 38 spans; 1,140 ft. long; built in 1872.

Bridge A296; 4th District line; near Ashland; crossing Bay City creek; pile bridge; 21 spans; 325 ft. long; built in 1893; in fair repair.



WISCONSIN CENTRAL RAILWAY—STEEL GIRDER BRIDGE,



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*Bridge Inspection.*

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## TUNNELS.

Five tunnels have been inspected; of these four are on the C. & N. W. Ry. and one on the C., M. & St. P. Ry.

Tunnels Nos. 1, 2 and 3 are on the main line of the Madison division of the C. & N. W. Ry., in Monroe county, and were built in 1872 and 1873. Tunnel No. 1 is 1,697 feet in length, No. 2 is 1,544 feet long, and No. 3 is 3,810 feet long. Tunnels Nos. 1 and 3 are cut through solid stone and with the exception of two short sections in No. 3, are not lined. The stone through which these tunnels are cut lies in horizontal strata. No. 2 is arched throughout with stone and brick masonry. Niches have been left in the wall at regular intervals to insure the safety of workmen from passing trains. The masonry lining seems to be in good condition and the entrances are strong and well protected.

Tunnel No. 4 is on the Galena branch of the Madison Division of the C. & N. W. Ry., in Lafayette county. This tunnel is cut through hard sandstone in which the strata are horizontal and is not lined.

The "Greenfield" tunnel on the C., M. & St. P. Ry. is on the main line of the La Crosse Division in Monroe county. It was built in 1875 to take the place of the "Old Greenfield" tunnel which, since it has been abandoned, has partly caved in. The material encountered in excavating this tunnel was lower silurian sandstone of a very friable nature. It is arched with brick masonry. Suitable niches have been built into the walls at regular intervals.

In none of these tunnels were any evidences of weakness found.

In making this inspection I have been very much hampered by reason of there being no records, at hand, of the bridges on the several roads, to consult before going out



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*Bridge Inspection.*

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to make the inspection. This information which should be on file in your office I have had to get from the records of the various divisions at the time of inspection.

I, therefore, recommend that you have a blank form printed with suitable headings to secure the information in regard to the bridges which it is desirable to have, and that these blanks be sent to the several railway companies operating in the state with the request that they be filled out at once and returned to your office where they may be put on file for future reference.

Respectfully submitted,

W. H. HENBY,  
*Consulting Engineer.*

December 19th, 1900.

*Index.*

## INDEX.

## PART I.

	Page
Assets, recapitulation of, 1900.....	4
Bonds, recapitulation, mortgage, 1900.....	4
Bonds owned, recapitulation of, 1900.....	7
Capital stock, recapitulation of, 1900.....	3
Cost of road and equipment, recapitulation of, 1900.....	5
Complaints, synopsis of.....	39
Depots, condition of, 1900.....	36
Dividends, 1900.....	3
Earnings, recapitulation of, 1900.....	6
Employs, distribution of, 1900.....	8
Expenses, general, 1900.....	8
Equipment, trust obligation, 1900.....	4
Funded debt, recapitulation of, 1900.....	5
Gross earnings, recapitulation of, 1900.....	6
Highway crossings, 1900.....	25
Income account, 1900.....	6
Interlocking plants installed.....	23
Improvements, permanent, 1900.....	5
Liabilities.....	5
Logging railroads.....	31
Maintenance of way and equipment.....	8
Maps, recommendations on.....	23
Mileage, passenger train, 1900.....	8
Office, personnel of, 1900.....	2
Pensions of railway employes.....	24
Rates, reduction of.....	45
Rates, commissioner's comments on.....	20
Railroads, condition of.....	18
Railroads, taxation of.....	31
Railroads, logging.....	25
Railroads, amount of tax of.....	35
Recommendation of commissioner.....	59
Rents received by railroads.....	8
Report to governor.....	3
Stock owned.....	7
Surplus from operation, recapitulation of, 1900.....	6

## Index.

## PART II.

## A.

	Page
Accidents to persons, 1899 .....	126
Alignment of road, 1899 .....	139
Average price of ties, 1899 .....	139
Average price of rails, 1899 .....	104
Agriculture, Product of, traffic, 1899.....	106
Animals, Product of, 1899.....	108
Anthracite coal, traffic, 1899.....	113
Agricultural implements, 1899 .....	93
Administration, General, 1899 .....	95
Average receipt per passenger per mile, 1899.....	95
Average amount received from each passenger, 1899.....	95
Average number of cars in train, 1899.....	103
Agents, station, 1899 .....	73
Agents, station, wages of, 1899.....	87
Assets and liabilities, June 30, 1899.....	22 to 47
Assets, current .....	314
Additions, net, year ending June 30, 1900.....	321
Agents, station, wages of, 1900.....	361
Agencies, including salaries and rent, 1900.....	265
Association, traffic expenses of, 1900.....	365
Average amount received for each ton, 1900 .....	283
Average receipt per ton per mile, 1900.....	383
Average loads .....	389
Average number of cars in train .....	389
Average number of tons freight in cars .....	392
Animals, product of, traffic in .....	394
Anthracite coal, traffic in .....	399
Agricultural implements, traffic in.....	405
Automatic couplers .....	420
Accidents to persons, Wisconsin, 1900.....	433
Accidents to persons, passengers, 1900.....	434
Accidents to persons, trespassers, 1900.....	435
Accidents to persons at highway crossings, 1900.....	436
Alignment of road, 1900 .....	437
Ascents, sum of, in feet, 1900.....	447
Articles of incorporation, New Ry. ....	447

## B.

Baggage earnings, 1899 .....	55
Bonds owned, June 30, 1899 .....	66
Barges, floats, tugs, etc., expenses of, 1899.....	71
Boats, ferry, expenses of, 1899.....	75
Bar and sheet metal, 1899.....	113
Brick, 1899 .....	113
Beer, freight tonnage, 1899 .....	116
Bridges, 1899 .....	159
Bills receivable, June 30, 1900 .....	314
Bonds owned, June 30, 1900 .....	352
Balance sheet, comparative, 1900 .....	279-303
Bridges, repairs of, June 30, 1900.....	357
Buildings, repairs of, 1900.....	357
Boats, repairs of .....	259
Bituminous coal, traffic in .....	294
Bar and sheet metal, traffic in .....	290
Brick, traffic in .....	290
Beer, traffic in .....	299
Bridges, description of, 1900.....	400
Bridges, inspection, W. H. Henby, Wisconsin, 1900.....	438
	471

## C.

Cost of road, Dec. 31, 1899 .....	12
Cost of road, Dec. 31, 1898 .....	2
Car companies, earnings, 1899 .....	15
Construction, amount expended, 1899.....	16

*Index.*

	Page
Comparative table, 1899 .....	22
Capital stock, 1899 .....	23, 24
Cost of road and equipment, 1899 .....	40
Cars, sleeping, earnings, 1899 .....	55
Car mileage earnings, 1899 .....	60
Conducting transportation, 1899 .....	83
Conductors, wages of, 1899 .....	88
Carpenters, wages of, 1899 .....	89
Cost carrying passenger one mile, 1899 .....	95
Coal traffic, 1899 .....	108
Coke traffic, 1899 .....	108
Cement, 1899 .....	113
Carriages, traffic, 1899 .....	113
Chicago, M. & St. Paul Ry. ....	173
Chicago & N. W., History of .....	174
C., St. P., M. & O. ....	178
C., B. & Q., History of .....	179
Capital stock, June 30, 1900 .....	304
Car companies, amount due .....	312
Cash assets .....	315
Construction, expenditures for, 1900 .....	322
Cost of road and equipment, June 30, 1900 .....	324
Cost per mile, railroads .....	325
Culverts, repairs of .....	357
Cattle guards, repairs of .....	357
Cars, passenger, repairs, 1900 .....	358
Cars, freight, repairs, 1900 .....	358
Car mileage, balance, 1900 .....	362
Clerks, salaries of, 1900 .....	364
Conducting transportation, 1900 .....	369
Conductors, salaries of, 1900 .....	374
Carpenters, salaries of, 1900 .....	375
Cost carrying one ton 1 mile, 1900 .....	383
Coke, traffic in .....	396
Cement, traffic in .....	399
Cars of all kinds, 1900 .....	407
Cars in companies' service .....	416
Cars leased, 1900 .....	417
Cars, total number, 1900 .....	417
Cars contributed to fast freight, 1900 .....	419
Cars owned .....	419
Characteristics of road, Wis., 1900 .....	436
Capital stock, New Ry. ....	447
Classification report of committee N. R. R. commissioners .....	470

D

Dividends, 1898 .....	7
Disbursements, 1898 .....	8, 9, 10, 11
Disbursements, 1899 .....	16
Disbursements, amount expended, 1899 .....	18
Dividends, amount paid, 1899 .....	18
Disbursements, amount paid .....	18
Dividends paid, 1899 .....	21
Debt, funded, Jan. 30, 1899 .....	25 to 30
Deficit from operation, June 30, 1899 .....	46
Deductions from income, June 30, 1899 .....	48
Duluth, S. S. & A., history of .....	182
Duluth, Superior & Western Ter. Co. ....	182
Directors, 1899 .....	196, 240
Directors, 1900 .....	241, 278
Deferred payment, equipment .....	312
Due from solvent companies .....	315
Dividends not called for .....	317
Deficit from operation, June 30, 1900 .....	327
Deficit, total, June 30, 1900 .....	329
Dividends, total declared, June 30, 1900 .....	330
Deficit from operation, June 30, 1900 .....	331
Deficit June 30, 1900 .....	335
Dividends, common stock, June 30, 1900 .....	335

*Index.*

	Page
Dividends, preferred stock, June 30, 1900.....	335
Deficit June 30, 1899, general balance sheet .....	336
Dividends, rec'd bonds owned June 30, 1900 .....	352
Docks, repairs of, 1900.....	357
Dining cars .....	407
E.	
Earnings, net, Dec. 31, 1899 .....	12
Earnings, passenger, freight, mail and express, 1898.....	12
Earnings, railways in Wisconsin, 1898 .....	4-5
Expenses, taxes, etc., 1898 .....	6, 7
Earnings per mile of road, 1899 .....	13
Earnings, calendar year, 1899.....	14
Earnings, other sources, 1899 .....	15
Equipment, amount expended, 1899 .....	16
Expenses for calendar year 1899.....	20
Earnings from operation, June 30, 1899.....	45
Earnings June 30, 1899 .....	52
Express earnings June 30, 1899 .....	54
Earnings, miscellaneous, 1899 .....	55
Elevators, earnings, 1899 .....	59
Earnings June 30, 1899 .....	62
Earnings, gross, recapitulation of.....	64
Expenses, operating, June 30, 1899 .....	70
Engineers, wages of, June 30, 1899 .....	72
Expenses, operating, June 30, 1899.....	75-80
Equipment, maintenance of, June 30, 1899 .....	82
Emploves, salary of, 1899 .....	87
Emploves, distribution of, 1899 .....	93
Earnings from operation, passenger and freight.....	99
Equipment of roads, 1899 .....	118
Equipment, description of, 1899 .....	120
Electric light plant .....	171
Eastern R'y of Minnesota, history of.....	183
Equipment, trust obligation .....	312
Expenditures for the year ending June 30, 1900.....	321
Equipment expenditures, 1900 .....	323
Earnings, gross, June 30, 1900 .....	326
Expenses, operating, June 30, 1900 .....	327
Earnings, freight, 1900 .....	338
Elevators, 1900 .....	339
Earnings, passenger, June 30, 1900 .....	340
Express, earnings, June 30, 1900 .....	341
Earnings, passenger and freight, total 1900 .....	343
Earnings, car mileage balance, 1900 .....	344
Earnings, telegraph companies, 1900 .....	344
Earnings, rent tracks, yards and terminals, 1900 .....	345
Earnings, other rentals, 1900 .....	345
Earnings, other sources, 1900 .....	345
Earnings, total, from operation, 1900 .....	345
Earnings, recapitulation of, 1900 .....	346
Earnings, whole line, 1900 .....	348
Expenses, operating, June 30, 1900 .....	356
Equipment, maintenance of, 1900 .....	358
Expenses, percentage of operating, 1900 .....	367
Expenses, legal, 1900 .....	366
Expenses, general, 1900 .....	369
Emploves, distribution of, 1900 .....	379
Earnings per mile of road, 1900 .....	384
Earnings, gross, from operation, 1900 .....	385
Earnings, from operation per mile, 1900 .....	385
Employment, description of, 1900 .....	404
Emploves, accidents to, 1900 .....	431
Engineer, consulting, R. R. Com., 1900 .....	471
F.	
Freight earnings, calendar year, 1899 .....	14
Freight earnings, calendar year, 1899 .....	56
Firemen, wages of, 1899 .....	72

*Index.*

	Page
Fuel for locomotives, 1899 .....	72
Flagmen, wages of, 1899 .....	73
Firemen, wages of, 1899 .....	88
Freight traffic, Wisconsin, 1899 .....	96
Freight earnings per mile of road, 1899 .....	97
Forest products, other, 1899 .....	110
Fuel, kind and quantity used, 1899 .....	140
Funded debt, Wisconsin .....	308
Funded debt, whole line .....	310
Fences, repairs of, 1900 .....	357
Firemen, salaries of, 1900 .....	374
Freight earning revenue, tons of .....	382
Freight, number of tons carried one mile, 1900 .....	382
Freight, average distance haul one ton, 1900 .....	382
Freight revenue, total 1900 .....	382
Freight earnings per train mile, 1900 .....	383
Freight earnings per mile of road, 1900 .....	383
Fruit, traffic in .....	391
Forest products, traffic in .....	396
Furniture, traffic in .....	400
Freight, total traffic in .....	403
Fuel, consumption of, 1900 .....	426
Fuel, cost of, 1900 .....	428
Fuel, consumption per mile, 1900 .....	429
G.	
Gross receipts, December 31, 1899 .....	12
Gross earnings, calendar year, 1898 .....	2
Gross earnings June 30, 1899 .....	52
Gross earnings from operation, 1899 .....	61
Grades, ascending, 1899 .....	157
Grades, descending, 1899 .....	157
Gauge of all roads, 1900 .....	441
H.	
Highways, overhead .....	162
History of railroads .....	172
Hay, traffic in .....	390
Hides, traffic in .....	393
Household goods, traffic in .....	400
I.	
Interest bearing indebtedness, Dec. 31, 1899 .....	12
Interest bearing indebtedness, 1898 .....	2
Interest accrued upon indebtedness, 1898 .....	3
Interest paid upon indebtedness, 1898 .....	3
Interest accrued upon indebtedness, 1899 .....	13
Interest paid upon indebtedness, 1899 .....	13
Interest, amount expended, 1899 .....	17
Improvements, permanent, etc., June 30, 1899 .....	38
Income account, June 30, 1899 .....	44
Income, miscellaneous, June 30, 1899 .....	69
Income from operation per mile of road .....	99
Iron, pig and bloom, traffic 1899 .....	112
Iron rails, traffic 1899 .....	113
Iron rails laid, 1899 .....	138
Injured, 1899 .....	144
Interest, deferred payment .....	313
Interest unpaid, July 1, 1900 .....	317
Improvements year ending June 30, 1900 .....	320
Income account June 30, 1900 .....	326
Income from operation, 1900 .....	326
Income from other sources, 1900 .....	327
Income, total, June 30, 1900 .....	328
Income, deductions from, 1900 .....	329
Interest on current liabilities, 1900 .....	332

*Index.*

	Page
Income, net, June 30, 1900 .....	334
Income from stocks owned, 1900 .....	353
Income, net, miscellaneous, 1900 .....	355
Injuries to persons, 1900 .....	363
Income from operation, 1900 .....	385
Income from operation, per mile, 1900 .....	385
Iron, pig and bloom, traffic in, 1900 .....	398
Incorporators of new railway organizations .....	447
K.	
Killed, 1899 .....	144
Kewaunee, G. B. & W. Ry. ....	185
L.	
Liabilities, June 30, 1899 .....	32-37
Lumber, traffic 1899 .....	110
Lime, traffic 1899 .....	113
Leased cars, 1899 .....	120
Locomotives in use, 1899 .....	132
Liquor, freight tonnage, 1899 .....	116
Loans and bills payable .....	316
Locomotives, repairs of, 1900 .....	358
Loss and damages, 1900 .....	363
Live stock, traffic in, 1900 .....	392
Leather, traffic in, 1900 .....	393
Lumber, traffic in, 1900 .....	396
Lime, traffic in, 1900 .....	399
Locomotives, all kinds, 1900 .....	418
Lease, lines operated under .....	421
M.	
Mileage of roads in Wisconsin, 1898 .....	3
Mileage of roads in Wisconsin, 1899 .....	13
Mail earnings, 1899 .....	15
Mail earnings, June 30, 1899 .....	54
Machinists, wages of, 1899 .....	89
Merchandise, freight traffic, 1899 .....	114
Mileage, line in use, etc. ....	134
Mileage, new line constructed, 1899 .....	135
Miles run by locomotives, 1899 .....	143
Mileage of street railways .....	168
Marquette, T. & W. Ry. ....	186
Minneapolis, St. P. & Sault Ste. Marie .....	187
Mortgage bonds .....	306
Material and supplies on hand .....	306
Material and supplies in hand June 30, 1900 .....	315
Mail earnings, 1900 .....	340
Miscellaneous earnings, 1900 .....	341
Mileage of roads reporting, 1900 .....	367
Maintenance of ways and structures, 1900 .....	368
Maintenance of equipment .....	368
Machinists, salaries of, 1900 .....	375
Miles run by passenger trains .....	386
Mileage of loaded cars .....	388
Mileage of empty cars .....	388
Meats, traffic in .....	392
Machinery, traffic in .....	399
Merchandise, traffic in .....	402
Miles of road operated, 1900 .....	420
Miles represented by capital stock .....	421
Mileage operated of all kinds .....	421
Mileage, whole line .....	422
Miles run by locomotives .....	429
N.	
Net earnings, calendar year 1898 .....	2
Naval stores, traffic, 1899 .....	112

*Index.*

	Page
Northern Pacific railway, history .....	188
Net traffic balances June 30, 1900 .....	316
News earnings, June 30, 1900 .....	341
Naval stores, traffic in .....	398

## O.

Operation, amount expended, 1899 .....	17
Other purposes, amount paid, 1899 .....	18
Ores, traffic of, 1899 .....	108
Operating expenses St. Ry. ....	170
Officers, 1899 .....	196, 240
Officers, 1900 .....	241, 278
Operators, wages of, 1900 .....	361
Officers, salaries of, 1900 .....	364
Operators, telegraph, salaries of, 1900 .....	377
Ores, traffic in .....	394
Oils, traffic in, 1900 .....	398
Originating in Wisconsin, traffic .....	403
Overhead highways, Wisconsin, 1900 .....	442
Officers of new railway organizations .....	447

## P.

Passenger earnings, calendar, 1899 .....	14
Passenger earnings, calendar, June 30, 1899 .....	53
Percentage of operating expenses to earnings .....	81
Printing and stationery, June 30, 1899 .....	81
Passengers carried, earning revenue, 1899 .....	94
Passengers carried one mile, 1899 .....	94
Passenger revenue, 1899 .....	94
Passenger earnings per mile of road, 1899 .....	95
Passenger traffic, 1899 .....	94-95
Passenger train mileage, 1899 .....	100
Petroleum, products of, 1899 .....	112
Price of rails, 1899 .....	138
Price of ties, 1899 .....	139
Printing, stationery, June 30, 1900 .....	367
Percentage of operating expenses, 1900 .....	367
Passengers, number carried earning revenue, 1900 .....	380
Passengers, number carried one mile, 1900 .....	380
Passengers, average distance carried, 1900 .....	380
Passengers, total revenue, Wisconsin, 1900 .....	380
Passengers, average amount received from each .....	381
Passengers, average receipt per mile .....	381
Passenger, estimated cost to carry one mile, 1900 .....	381
Passenger earnings per mile of road, 1900 .....	381
Passenger earnings per train mile, 1900 .....	381
Passenger and freight train mileage, 1900 .....	382
Passenger and freight revenue, 1900 .....	384
Passenger and freight revenue per mile of road, 1900 .....	384
Poultry, traffic in, 1900 .....	392
Petroleum and other oils, traffic in, 1900 .....	393
Passenger cars, 1900 .....	406

## R.

Report to State Treasurer, 1898 .....	2-3
Rentals and interest, 1898 .....	7
Rentals, amount expended, 1899 .....	18
Rentals and interest paid, 1899 .....	21
Rentals from tracks, yards and terminals .....	61
Rentals, other .....	61
Rentals received June 30, 1899 .....	68
Round-housemen, wages, June 30, 1899 .....	68
Rentals, 1899 .....	72
Rails, iron and steel, 1899 .....	84
Rails, renewal of, Jan. 30, 1900 .....	135
Road, characteristics of, 1899 .....	356
Rentals paid June 30, 1900 .....	156
Rentals paid June 30, 1900 .....	333



*Index.*

	Page
Rents received from yards, tracks and terminals, 1900 .....	354
Rails, renewal of, Jan. 30, 1900 .....	356
Rentals, 1900 .....	366
Rentals paid for lease of roads, 1900 .....	370
Rentals paid for lease of other property, 1900 .....	371
Rails, iron and steel, traffic in .....	399
Rails, renewal of, Wisconsin .....	424
Rails, average price of .....	424
Rails, iron and steel, 1900 .....	421
Railway organizations, new, 1900 .....	447
Railroad Commissioner convention, 1900 .....	452
Report of the committee on R. R. Com. Conv. ....	453
Report of consulting engineer .....	471

## S.

Stock yards, earnings, 1899 .....	58
Switching charges balances, 1899 .....	60
Stocks owned, June 30, 1899 .....	67
Switchmen, wages of, 1899 .....	73
Supplies, station, cost of, 1899 .....	73
Salaries of employes, 1899 .....	86
Stone, traffic, 1899 .....	109
Sugar, traffic, 1899 .....	112
Steel rails, 1899 .....	113
Steel rails laid, 1899 .....	138
Street railways .....	168
Street railways, location of .....	169
St. Paul & Duluth Ry., history of .....	190
Surplus from operation, June 30, 1900 .....	331
Surplus June 30, 1899, from general balance sheet .....	331
Sleeping car earnings, 1900 .....	341
Switching charges balance, 1900 .....	344
Stocks owned, 1900 .....	353
Switching charges balance, 1900 .....	362
Salaries of officers and men, 1900 .....	373
Section foremen, salaries of, 1900 .....	376
Switchmen, salaries of, 1900 .....	377
Stock, live, traffic in, 1900 .....	392
Stone, sand, etc., traffic in, 1900 .....	395
Sugar, traffic in, 1900 .....	398

## T.

Taxation of railroads in Wisconsin, 1898 .....	3
Tax, or license, for year 1899 .....	13
Taxes, amount expended, 1899 .....	17
Taxes, amount paid by each railway .....	20
Tickets, sale of, June 30, 1899 .....	54
Telegraph earnings, 1899 .....	60
Trainmen, wages of, 1899 .....	73
Telegraph operators, wages of .....	73
Train supplies .....	73
Terminals, rentals of, 1899 .....	85
Train mileage, 1899 .....	98
Tons of freight traffic, 1899 .....	109
Tools, traffic of, 1899 .....	113
Total freight tonnage, 1899 .....	115
Ties, cross-ties laid, 1899 .....	139
Trestles, 1899 .....	160
Tunnels .....	161
Telegraphs owned by railway .....	165
Telegraph owned by other than railway .....	166
Telegraph companies, names of .....	167
Taxes June 30, 1900 .....	333
Tickets, sale of, 1900 .....	340
Ties, renewal of, June 30, 1900 .....	356
Telegraph, repairs of, June 30, 1900 .....	357
Trainmen, wages of, 1900 .....	361
Train mileage, 1900 .....	386
Trains earning revenue .....	387

*Index.*

	Page
Tons of freight, loaded trains .....	389
Traffic, freight .....	390
Traffic, grain .....	390
Traffic, flour .....	390
Traffic, products of agriculture .....	390
Tobacco, traffic of .....	391
Train brakes .....	405
Ties, new ties laid, 1900 .....	425
Ties, average price, 1900 .....	425
Trestles, description of, 1900 .....	440
Tunnels, description of .....	441
Telegraph operated by railway company .....	444
Telegraph operated by another company .....	445
Tunnels, inspection of .....	509
U.	
U. S. government, due from .....	315
V.	
Value of bonds owned June 30, 1900 .....	352
W.	
Wages, June 30, 1899 .....	72
Water supply for locomotive .....	72
Wagons, traffic of .....	113
Wines, freight tonnage .....	116
Weight of rails laid, 1899 .....	138
Wood used in making ties .....	139
Wood, cords of, used, 1899 .....	142
Wisconsin Central Co., history of .....	192
Wisconsin Central Railway Co., history of .....	193
Wisconsin Central Railway Co., history of .....	195
Wages of enginemen, firemen, etc. ....	360
Water supply for locomotives .....	360
Wagons, carriages, etc., traffic in .....	399
Wines, liquors and beers .....	400
Wood, traffic in .....	392
Wood, consumed by locomotives .....	428



COMPLIMENTS OF

U. O. B. WINGATE, M. D.,

*Secretary State Board of Health,*

204 BIDDLE STREET,            MILWAUKEE, WIS.

EIGHTEENTH REPORT

OF THE

State Board of Health

OF WISCONSIN.

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September 30th, 1900.



MADISON, WIS.:  
DEMOCRAT PRINTING COMPANY, STATE PRINTER,  
1901

## MEMBERS OF THE BOARD.

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SOLON MARKS, M. D., President .....Milwaukee  
J. HENRY McNEEL, M. D. ....Fond du Lac  
F. C. SUITER, M. D. ....La Crosse  
WM. F. WHYTE, M. D. ....Watertown  
G. W. HARRISON, M. D. ....Ashland  
Q. O. SUTHERLAND, M. D. ....Janesville  
U. O. B. WINGATE, M. D., Secretary .....Milwaukee

---

PROF. H. L. RUSSELL, PH. D., Consulting Bacteriologist, Madison.  
PROF. WM. S. MILLER, M. D., Consulting Pathologist, Madison.

## LETTER OF TRANSMITTAL.

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STATE OF WISCONSIN.

*Office of the Secretary of the State Board of Health,*

MILWAUKEE, October 1st, 1900.

To the Honorable EDWARD SCOFIELD,

*Governor of the State of Wisconsin:*

SIR:—In compliance with the requirements of law, I have the honor to herewith present the Eighteenth Report of the State Board of Health, the same being for the biennial period ending September 30th, 1900.

Respectfully submitted,

U. O. B. WINGATE, M. D.,

*Secretary.*

## TABLE OF CONTENTS.

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	Page
Report of the Board .....	1
Report of the Secretary .....	8
Poisoning by a Hemlock Species; Contribution to a nearer knowledge of a Hemlock Species by Fr. and L. F. Ruschhaupt, of Milwaukee .....	99
Outbreak of Anthrax Fever at Medford, Wis., by H. L. Russell, Professor of Bacteriology, University of Wisconsin, and Consulting Bacteriologist to the Wisconsin State Board of Health .....	105
Sanitary Analysis of Water .....	119
Extracts from Health Officers' Correspondence .....	204



## REPORT OF THE BOARD.

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Among the provisions of law defining the duties of the State Board of Health may be found the following relating to the Reports of the Board: "The Board shall report to the Governor their transactions, investigations, and discoveries during the preceding term, and such suggestions for legislation as they think fit."

In this connection attention is called to the report of the Secretary in which will be found a detailed account of the work done by the Board during the past two years. The general health of the state has been fairly good, as usual, but it is to be noted that there are certain preventable diseases which are constantly with us and vary from year to year in number of cases and virulence. The principal preventable diseases to which the Board feels that greater attention should be given are diphtheria and typhoid fever. These diseases can be prevented by proper sanitary precautions. They affect the young and middle-aged of our population, and their fatality is a great loss in any community, and the Board believes that some stringent measures should be taken to prevent their devastation.

The prevalence of smallpox throughout the country during the past two years has given the Board considerable concern and anxiety. More or less, the disease has prevailed in this state during that time, and its very unusually light character has been a cause of neglect on the part of many as less fear has existed among the people than is usual. It has been quite frequently taken for chicken pox or some other mild disease, and has been allowed to spread. The Board feels that some legisla-

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*Report of the Board.*

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tion concerning vaccination to prevent the spread of this disease is of the greatest importance.

The sad catastrophe which occurred in June, 1899, at New Richmond, Wis., in the form of a cyclone, required the services of the Board, and also the expenditure of a certain portion of the contingent fund in order to clear up the debris and prevent any possible outbreak of disease that might result therefrom. A full account of this will be found in this report.

Attention is also called to the interesting and valuable paper by Mr. Fred Ruschhaupt, describing a poisonous plant which exists in the state, and it is hoped that the full report on the investigation of this plant will be of value to our people.

Attention is also called to the valuable paper by Prof. H. L. Russell on Anthrax, which is of much interest and importance.

A limited amount of work has been done in examining water supplies throughout the state, and much more work of this nature is needed, but a larger appropriation is necessary in order to meet the demand. A full account of this work will also be found in the report.

Considerable space has been given to the reports of the various health officers in different parts of the state, and it is to be noted that a larger number of local boards of health exist at the present time than ever before, and a larger number are reporting from year to year.

#### LEGISLATION.

*A Bill to Provide for the Transportation of Corpses:* At the last session of the legislature the Board prepared and had introduced a bill to regulate the transportation of dead bodies. The National Baggage Masters' Association, and State Boards of Health generally, throughout the country, have adopted rules and regulations providing for bodies dead of certain contagious diseases to be safely transported that formerly were consid-

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*Report of the Board.*

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ered dangerous. The advancement made in the care of dead bodies during the past few years has been such that this work can now be safely done where formerly it was considered impracticable. The states adjoining have adopted these rules and regulations, but our legislature declined to amend our laws in this regard. We most urgently recommend that the laws relating to this matter be amended so as to conform to the rules adopted by the National Baggage Masters' Association and the other State Boards of Health in order that our people may receive the benefit to be derived therefrom.

*To Provide for the Control of Water Supplies and Sewage Disposal:* The Board has also urged for several years that a law be enacted to regulate the adoption of systems of water supplies and sewage disposal in the state. In many instances, through lack of information, or other reasons, systems of water supply are adopted that prove dangerous to the people, and much money is misspent in this direction, and the same is true of systems of sewage disposal. Laws in some other states have been enacted providing that all such systems shall be submitted to the State Board of Health for their inspection and approval before adoption, and the Board would most strongly urge that our legislature enact some law regulating this matter. One of the most dangerous conditions that confront the people of this state at the present time comes from the pollution of water supplies, and until some protection is given by way of law in this direction the evil will continue. The number of cases of typhoid fever, and of deaths therefrom, is increasing from year to year, and in the great majority of instances this disease is contracted from polluted water supplies, and with our present knowledge concerning the prevention of this disease it seems little less than criminal not to make all the provisions possible for the prevention thereof.

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*Report of the Board.*

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*Vaccination for the Prevention of Smallpox:* The Board strongly urges that some law be enacted giving local health authorities power to require vaccination as a prevention of smallpox. Such a law exists in some of the older states and in Germany, and where it is enforced it is a well recognized fact that smallpox is almost unknown. The Board does not advocate a compulsory vaccination law, only when the disease is prevalent and threatening a locality. Then the Board would advocate a law giving the local board of health authority to enforce vaccination in all persons not previously protected by the operation, or in persons not successfully vaccinated within the previous five or seven years. This act to be enforced subject to the recommendation of the State Board of Health. In other words, when in the judgment of the State Board of Health smallpox is threatening a locality, the State Board should declare general vaccination necessary, and the local boards should be empowered by law to put such a declaration into effect. A law of this nature will work no hardship, and will be of the greatest service to the people in preventing this most loathesome disease. The time is past for argument that vaccination is not a preventive of smallpox, when 95 per cent. of physicians of all schools throughout the civilized world, all medical colleges, and all text-books worthy of the name that treat of the subject, advocate vaccination. The members of the State Board of Health are citizens of the state, having families and friends as dear to them as those of any other citizens, and in advocating this measure they are fully aware that they and their families are subject to such a law as well as others, and they are most sincere in advocating a measure that if properly enforced will result in more happiness, freedom from a most loathesome disease, disfigurement of countenance, and protection from financial loss, than any sanitary act of the age in which we live.

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*Report of the Board.*

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*Vital Statistics:* While the present vital statistics law is an improvement over previous acts, it is far from satisfactory, and the Board is strongly in favor of a law creating a State Vital Statistician, whose duty it shall be to see that any law enacted shall be enforced. The vital statistics of this state are becoming more and more valuable and important, and it is believed that the law can be so amended as to make our vital statistics of very great value to the inhabitants. It is also believed that by so providing that births, deaths, and marriages be collected by some local officials in the various towns, villages, and cities, and reported direct from them to the State Vital Statistician, whose office should be located in the State House, a great expense over the present law can be saved. It is estimated that some \$12,000 to \$15,000 per annum can be saved by this means, and very much better statistics would also be the result. This plan would do away with reporting to the various registers of deeds in the different counties, and would render the provision very much more simple than now exists. Certain other states that have laws of this character are reaping the rewards of very satisfactory vital statistics, and it is to be hoped that our legislature will see the importance of thus amending our laws in this regard.

*A State Board of Health Laboratory:* In many of the states the State Boards of Health are being provided with laboratories, both chemical and bacteriological. In order to meet the demands of the age laboratory work in connection with public health work is absolutely necessary. With a population of over 2,000,000 people, the state of Wisconsin is behind many other states in this respect, and it is of the greatest importance that means be provided whereby the Board can be supplied with a laboratory of this description. The work of examining drinking water, investigations in regard to sewage disposal, the examinations of the various contagious diseases, such as diph-

*Report of the Board.*

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theria, typhoid fever, etc., are of the greatest importance, and it is work that can only be done under the supervision of the State Board. The Board most strongly recommends that the legislature provide for an increase in the appropriation sufficient to establish laboratories of this nature. The appropriation of the Board has not been increased for many years, while the population of the state has been constantly increasing, and the work required of the State Board is growing greater from year to year and the demand more imperative. Much work remains undone which ought to be done by the Board but which cannot be accomplished without a larger appropriation, and we most urgently advocate that the appropriation be increased to at least \$10,000 per annum, and that the money saved by amending the vital statistics law be appropriated to the Board, then the state would still save a number of thousand dollars per annum.

*Animal Tuberculosis:* During the past two years the State Board has issued circulars to the various dairymen throughout the state, calling their attention to the importance of having their herds tested for tuberculosis. The result of this information contained in these circulars has created a demand for inspections of herds which it has been impossible to meet by the State Veterinarian or State Board. The Board is strongly of the opinion that the laws requiring the diseases of animals, and especially that part pertaining to tuberculosis, should be amended in order that the work required in this direction may be accomplished. The dairy interests of the state, and the public health, both demand that attention should be given to this matter. There is no longer any doubt but what tuberculosis can be contracted by meat and milk of animals, and that many deaths from consumption can be prevented by proper precautions being taken along these lines. The investigations of the Board show that while tuberculosis among dairy herds is not as prev-

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*Report of the Board.*

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alent in this state as in some of the eastern states, yet there is a sufficient amount of it to cause anxiety and to stimulate the most active efforts to prevent its further spread, and if possible to eradicate it altogether. This is a question of not only the saving of human life, but it is of great financial importance to the state of Wisconsin, and one that merits the most careful consideration by our legislature.

In making the aforesaid suggestions relative to legislation the State Board has only referred to such as are of the most vital importance to the people of the state. They are questions which have been carefully studied by the State Board, and it is hoped that they will receive the attention that the importance of the subjects demand.

SOLON MARKS, M. D., *President,*

J. H. McNEEL, M. D.,

G. W. HARRISON, M. D.,

WM. F. WHYTE, M. D.,

F. C. SUITER, M. D.

Q. O. SUTHERLAND, M. D.

U. O. B. WINGATE, M. D., *Secretary,*

*Members of the Wisconsin State Board of Health.*

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*Secretary's Report.*

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**REPORT OF THE SECRETARY.**

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*To the State Board of Health,*

GENTLEMEN: I have the honor to submit the following report, as your Secretary, for the biennial period ending September 30th, 1900:

PERSONAL OF THE BOARD.

During the past two years the membership of the Board has remained unchanged, with the exception of the appointment by Governor Edward Scofield of Dr. Wm. F. Whyte of Watertown in place of Dr. F. H. Bodenius, deceased, which appointment occurred the latter part of 1898.

The term of your Secretary having expired in February, 1899, he was reappointed to succeed himself, and the term of Dr. Q. O. Sutherland having expired in February, 1900, he was also re-appointed to succeed himself.

MEETINGS.

The first meeting of the biennial period was held in Madison on January 4-5, 1899. At this meeting Dr. Solon Marks was re-elected President of the Board for the ensuing year. The following committees were appointed by the President:

On Finance: Dr. J. H. McNeel, Dr. G. W. Harrison, Dr. F. C. Suiter.

On Legislation: Dr. Wm. F. Whyte, Dr. F. C. Suiter, Dr. Q. O. Sutherland.

On Printing: Dr. U. O. B. Wingate, Dr. F. C. Suiter, Dr. J. H. McNeel.



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*Secretary's Report.*

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At this meeting the matter of preparing suggestions to teachers in the public schools in regard to contagious diseases was considered, and a set of rules were presented, but on motion the matter was deferred for action until the next meeting of the Board. The Secretary presented a report of the work done in his office during the past six months, and the same was accepted and ordered placed on file. On motion it was voted to re-draft the circular on the "Prevention of Smallpox," issued by the Board, and to submit the same at the next meeting for approval. Also to re-draft the circular on the "Prevention of Diphtheria," and submit the same to the next meeting. Mr. Rood of Beloit presented a petition to the legislature, which was signed by the members present, asking for an appropriation to reimburse the State Board of Health in the sum of \$652.11 and the School Board of Beloit in the sum of \$629.11, total, \$1,281.22, the same having been expended by the two Boards for legal expenses in case of *State ex rel. Adams v. Burdge et al., School Board*. This was a case which came out of an attempt to enforce a rule made by the State Board of Health requiring all children to be vaccinated before admittance to school in pursuance of section 1408 of the Wisconsin statutes as annotated by Sanborn and Berryman but the rule was declared null and void by the Supreme Court on the ground that the legislature could not delegate power to any Board to make such a rule. (Legislature reimbursed the School Board of Beloit but declined to reimburse the State Board of Health.) Prof. H. L. Russell, Consulting Bacteriologist of the Board, made a verbal report relating to the work of attempting to eradicate Bovine Tuberculosis in the state. He stated that in his judgment our present laws on the subject of treating and disposing of diseased animals were antiquated, and that if we were to attempt to accomplish anything in this direction our laws should be revised. Prof. Russell and the Secretary were

*Secretary's Report.*

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appointed a committee to visit the Governor and present the matter to him and obtain his views, and if possible his opinion on the subject. Prof. Russell made some remarks relating to the work of Water Analysis which he was conducting for the Board, and expressed an opinion that there was an increase in the interest taken in the subject throughout the state.

The Secretary then presented various reports of inspections made by him in various localities throughout the state.

The Secretary then presented a bill to be introduced into the legislature during the next session, entitled, "A Bill to Regulate the Transportation of Corpses." This bill was drafted to conform to the rules lately promulgated by the National Association of Baggage Masters and other State Boards of Health. On motion the bill was approved and the Secretary instructed to have the same introduced. (This bill failed to pass.)

The Secretary then presented a bill entitled, "A Bill to Provide a Contingent Fund for the Prevention of Cholera and Other Dangerous Contagious Diseases, and Providing for an Appropriation." This bill called for an appropriation of \$50,000 to be used by the Board, by and with the consent of the Governor. This bill was approved and the Secretary ordered to have the same introduced. (This bill became a law.)

The Secretary was then authorized and directed to draft a bill entitled, "A Bill to Provide for the Control of Water Supplies and Sewerage in the State of Wisconsin, and Calling for an Appropriation," and to submit a copy of the same to each member of the Board for his approval, after which to have the same introduced into the legislature. (Bill was introduced but failed to pass.)

The next meeting of the Board was held in Milwaukee, June 27-28, 1899. The question of preparing rules for use of school teachers was again considered, and on motion it was

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*Secretary's Report.*

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voted that it was inexpedient for the Board to issue such a circular at the present time.

Works on Physiology and Hygiene, to be used in the public schools, were then considered by the Board.

The Secretary then presented various reports of inspections made in different localities throughout the state. Also letters were presented by the Secretary from the authorities at New Richmond, Wisconsin, relative to the recent calamity at that place, resulting from a cyclone, in which the entire city was nearly destroyed, many killed and more wounded. The Board was urged to visit the city in a body, and do what it could in improving the sanitary conditions. The Secretary was authorized to prepare suitable ordinances for adoption by the Common Council of New Richmond to meet the emergency. It was also the sense of the Board, that on the approval of the Attorney General and the Governor, so much as may be necessary of the emergency or Cholera fund should be used for the purpose of rendering immediate sanitary aid.

The Secretary presented a report as delegate to the Conference of State and Provincial Boards of Health of North America, held at Richmond, Virginia, May 23-24, 1899.

The following resolution was adopted:

“That the Board appoint a committee to confer with the railroad companies operating in the state, and ask them to improve the sanitary conditions of their passenger cars in the following respects:

First, To provide cuspidors containing disinfectants for all smoking cars and in the smoking rooms of sleeping cars.

Second, To give more attention to disinfecting passenger coaches at the end of each line.

Third, That better arrangements be made for the ventilation of passenger day coaches and sleeping cars.”

The next meeting was a special meeting, held in Milwaukee, September 13, 1899, for the purpose of meeting with the Governor, and considering the expenditure of a portion of the Con-

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*Secretary's Report.*

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tingent Fund to remedy the unsanitary conditions resulting from the tornado at New Richmond, Wisconsin, June 12, 1899, and for such other business as may be legally brought before the Board. The Attorney General having decided that it was the privilege and duty of the Board to use the Contingent Fund, or such portion of it as might be necessary for the purpose named, and under instructions of the Board, the sum of \$3,862.27 was expended in cleaning up the city and removing debris dangerous to the public health.

The next meeting of the Board was held at Madison, January 17-18, 1900. Dr. Solon Marks was again re-elected President of the Board for the ensuing year, and the same committees on Finance, Legislation, and Printing re-appointed.

The Secretary presented a synopsis of the work done in the office during the year 1899, and the same was approved and ordered placed on file.

The Secretary presented a revision of the fifth edition of "The Powers and Duties of Local Boards of Health." On motion same was approved by the Board and the Secretary authorized to have 5,000 copies printed for circulation among the 1,273 boards of health now existing in the state, and to such others as may require them.

The Secretary then made a verbal report of progress made by the committee on car sanitation, and it was voted to give the committee further time.

The question of school text books on Physiology and Hygiene was then discussed by the members present.

Prof. H. L. Russell, Consulting Bacteriologist, and Dr. H. P. Clute, State Veterinarian, being present at the meeting, the subject of Bovine Tuberculosis and the best methods for its eradication in the state was considered, and it was the opinion of those present that the present laws governing the matter were antiquated, and that they should be amended at the earliest pos-

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*Secretary's Report.*

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sible date. It was suggested that the Secretary of the Board prepare a form for an ordinance to be passed by the various local health authorities throughout the state providing for applying the tuberculin test to all cows used in producing milk for public consumption.

Prof. Russell presented a report on his investigation of an outbreak of Anthrax at Medford, which was traced to infected hides imported by the tanneries at that place. Many animals had been infected by grazing along the banks and drinking the water from a river which had been contaminated by drainage from a tannery. Also several persons had been infected by handling the hides.

The Secretary then presented a report to the Executive Committee of the Board of an inspection of a sewerage filtration plant at Wauwatosa, Milwaukee county, in compliance to a resolution adopted by the Board of Supervisors of that county.

The Secretary then presented reports of various inspections made in different localities throughout the state.

The next meeting of the Board was held at Milwaukee, June 19-20, 1900. The Secretary presented a synopsis of the work done in his office during the past six months, which was approved and ordered placed on file. He presented a lengthy correspondence relating to text books on Physiology and Hygiene to be used in the public schools.

The Secretary also presented a communication from Mr. C. L. Hastings of Fond du Lac, relative to a bad nuisance created by the drainage of the Fond du Lac river at that place. On motion it was voted to urge the local board of health to take action in the matter.

A communication was received from the Consulting Bacteriologist, Prof. H. L. Russell, relating to some legislation improving the present laws governing the disposition of diseased cattle. On motion it was voted to request the Secretary to confer

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*Secretary's Report.*

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with Prof. Russell and Dr. H. P. Clute, the State Veterinarian, and if thought practicable draft a bill to be introduced at the next session of the legislature, and to report at the next meeting of the Board.

The Secretary then reported that he had been investigating the cases of leprosy in the state, and that he was only able to find three cases at the present time.

The Secretary then presented his report as delegate to the meeting of State and Provincial Boards of Health of North America, held at Atlantic City, N. J., on June 1 and 2, 1900.

A letter was presented from Dr. M. R. Wilkinson of Oconomowoc, reporting the death of a boy who had eaten some tubers found in the woods. These tubers were sent to be examined and found to belong to the hemlock family, and to contain a very dangerous poison.

The committee on car sanitation then made its report, and it was voted to instruct the Secretary to send a copy of the recommendations as read to the chief surgeons of the three principal railroads operating in the state.

The Secretary then presented various reports of inspections made in different parts of the state.

The Secretary then presented a report from Prof. H. L. Russell, Consulting Bacteriologist, of his examination of specimens sent from Medford, Wis., supposed to be infected with anthrax coming from hides of cattle received by a tannery from China and other distant points. The anthrax bacillus was found.

The Secretary then presented an opinion received from the Attorney General relative to the payment of fees to physicians for reporting births, in which the Attorney General gave the opinion that under the present law, as he interpreted it, no fees could be allowed to physicians for reporting births.

The Secretary then reported that since January 1st last there had been 213 cases of smallpox with 5 deaths in the state.

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*Secretary's Report.*

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## LOCAL BOARDS OF HEALTH.

At the present time there are 1,305 towns, villages and cities entitled to a local board of health under the existing laws, and of this number reports have been received of the organization of 1,283 for the year 1900.

The following is a list of the names of all places in the state failing to report local board of health organizations for 1900. To these different localities from three to four calls have been sent but no report of organization received:

De Pere Tp., Brown county; Eaton Tp., Brown county; Rockland Tp., Brown county; Gilmanton Tp., Buffalo county; Unity Tp., Clark county; Waunakee Vil., Dane county; Little Grant, Grant county; Finley Tp., Juneau county; Burns Tp., La Crosse county; Evergreen Tp., Langlade county; Corn- ing, Lincoln county; Phillips City, Price county; Somerset, St. Croix county; Delton, Sauk county; La Valle Tp., Sauk county; Hartland Tp., Shawano county; Menomonie Tp., Waukesha county; Helvetia Tp., Waupaca county; Waupaca Tp., Waupaca county; Winneconne Tp., Winnebago county; Saratoga Tp., Wood county.

Of the 1,273 local boards of health organized in 1899, 755 made annual reports, and of the 1,283 organized in 1900, 780 made annual reports. It will be observed that the number of boards are gradually increasing each year and that the number of annual reports are increasing. The larger places make their annual reports regularly; those that fail to report are, the majority of them, smaller places in which there is but little sickness and but little work for local boards of health to do. So far as can be learned the most cordial harmony exists between the local boards and the State Board throughout the state.

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*Secretary's Report.*

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## HEALTH OFFICERS.

*Salaries:* For the year ending September 30, 1899, of the 755 health officers reporting, 423 report some salary; for the year ending September 30, 1900, of the 780 health officers reporting, 468 report some salary. The others report no salary. In the cases where the salary is paid, in many instances, the most meager sum is given for this service. Your Secretary is of the opinion that some law should be enacted fixing the salary of the health officer. This service is one of the most important of any in the various localities, and certainly should no longer be considered charity work. A physician or layman who takes upon himself the responsibilities of a health officer undoubtedly saves many lives each year, and much expenditure of money, to say nothing of the happiness and comfort of the people in his jurisdiction, and to consider this as charity work, without any pay, is an imposition upon the intelligence of the community in which such is allowed to exist. Our legislature should see to it that for such important labor a reasonable compensation should be paid.

*Sewerage Systems:* In the blanks used for securing the reports of health officers, issued during the past two years, the question was asked of the health officer, "Whether or not a sewerage system existed in his jurisdiction." For the year ending September 30, 1899, of the 755 places reporting, only 59 report a sewerage system. For the year ending September 30, 1900, of the 780 places reporting, but 63 report a sewerage system. This goes to show that the drainage of many of our villages and cities and larger towns is sadly neglected and should receive earnest attention.



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*Secretary's Report.*

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## CONTAGIOUS DISEASES.

It is believed that the following reports of the number of cases and deaths from Smallpox, Diphtheria, Scarlet Fever, and Typhoid Fever are nearly accurate.

*Smallpox:* For the year ending September 30, 1899, there were 63 cases with 9 deaths reported in the state, the largest number of cases occurring in the months of February and June. There were no cases in the state during the months of July, August, and September, 1899.

For the year ending September 30, 1900, there were 446 cases with 15 deaths reported in the state, the largest number of cases occurring in the months of May and September, 1900. The small death rate corresponds with the death rate from the disease in all parts of the country, and in many cases the disease has been exceedingly light and has often been mistaken for chicken pox, hence it has been allowed to spread. In every outbreak of the disease, as soon as reports have been received, a supply of circulars on the "Prevention of Smallpox" has been sent to the local health officer for distribution, and rigid quarantine advised, and general vaccination urged. In many places these directions have been carried out. Your Secretary has visited several localities and advised with the local authorities regarding the control of the disease.

*Vaccination:* In the absence of any law to require vaccination in the state, we must expect more or less smallpox to prevail. While Wisconsin has had less cases than some states during the past years, yet in many localities it has been a serious menace to business and an expensive experience. It is to be earnestly hoped that the friends of vaccination in the state will be sufficient to influence our legislature to pass some law providing for general vaccination of the people when the disease threatens a community.

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*Secretary's Report.*

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*Diphtheria:* During the year ending September 30, 1899, from 189 places there were reported 2,003 cases with 263 deaths, mortality of 13 per cent., and for the year ending September 30, 1900, from 185 places there were reported 2,056 cases with 282 deaths, mortality of 13 per cent.

For the four years prior to this report, for the year ending September 30, 1895, from 107 places there were reported 1,368 cases with 235 deaths, a mortality of 17 per cent.

For the year ending September 30, 1896, from 130 places there were reported 2,097 cases with 410 deaths, a mortality of 19 per cent.

For the year ending September 30, 1897, from 172 places there were reported 2,015 cases with 461 deaths, a mortality of 22 per cent.

For the year ending September 30, 1898, from 159 places there were reported 1,775 cases with 271 deaths, a mortality of 15 per cent.

It will be observed by these figures that the disease continues to be prevalent in the state and is causing a large number of deaths each year. The mortality has been decidedly lower since the use of antitoxin, which has been, so far as can be learned, very generally used throughout the state where the disease has existed. Your Secretary is of the opinion that more active measures must be taken in regard to the prevention of this disease. Our regulations certainly are not sufficient to prevent it, and if anything the disease is increasing. The public should be made to understand that this is a preventable disease, and that the most rigid precautions must be observed and carried out in order to prevent its devastation. Our rules now prescribe that "All persons infected with the disease shall be isolated for fourteen days after recovery and disinfection of the premises, and that persons associated with or in the family with the patient shall be quarantined until after death or re-

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*Secretary's Report.*

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covery of the patient and disinfection of the premises." Our present knowledge of this disease certainly demands that these regulations be revised. To placard a house is not sufficient. Quarantine must be maintained by an officer stationed on the premises to prevent anyone from entering or coming out of the house, except those in attendance. Without such a quarantine it is absolutely impossible to carry out any isolation that will be effectual. The throats and noses of all inmates of the house should be examined, and a bacteriological examination made, and quarantine should not be removed until by repeated bacteriological examinations it has been shown that the disease has become extinct. There are many individuals who carry the germs of the disease about in the throat and nose for many weeks after the disease has apparently disappeared, and invariably these persons infect others with whom they come in contact. When the disease appears in a school, all of the children's throats should be examined bacteriologically, and also the throats of the teachers. Cases have been reported repeatedly where teachers, having had a "chronic sore throat," have carried the germs of diphtheria for months, infecting children every time the school was opened without coming down with the diphtheria themselves. Bacteriological examinations should be made of every person's throat who has in any way been exposed to diphtheria; also of every child's throat on entering a school, and once a week thereafter, in every locality where the disease has made its appearance. The duration of quarantine should depend upon the bacteriological findings, and these must not depend upon a single smear taken from the surface of the tonsil. They should not only be taken from the throat but they should be taken from the nose and naso-pharynx, and also from the ears should any discharge come from those organs, before the patient can be safely released, whether it be three weeks or

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*Secretary's Report.*

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three months. Your Secretary is of the opinion that until a more rigid quarantine and these bacteriological results can be obtained our efforts will be futile to prevent the prevalence of this disease. In order to do this work the Board should be provided with a laboratory. There is so much work of this kind that is demanded that it is utterly impossible to serve the public as it should be served without a bacteriological and chemical laboratory.

*Scarlet Fever:* For the year ending September 30, 1899, from 141 places there were reported 1,288 cases with 39 deaths, a mortality of 3 per cent., and for the year ending September 30, 1900, from 236 places there were reported 4,497 cases with 170 deaths, a mortality of 3.7 per cent. (Two thousand of these cases occurred in the city of Milwaukee.)

It will be observed that this disease has been quite prevalent during the past year, but it has been of an extremely light character, the mortality being very low as compared with some years previous, the disease having been so light in many instances that no physician was called, and hence it has spread in many localities without any precautions having been taken. It is difficult to prevent the spread of this disease under such circumstances unless medical health officers can be employed to make a house to house inspection at stated intervals, which should be done in all villages and cities, and especially the schools should have the benefit of a medical inspector for this purpose as well as for other sanitary reasons. Wherever the disease has been reported we have sent a supply of scarlet fever literature to be circulated, and have urged quarantine and disinfection.

*Typhoid Fever:* For the year ending September 30, 1899, from 224 places there were reported 1,312 cases with 120 deaths, a mortality of 9 per cent., and for the year ending Sep-

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*Secretary's Report.*

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tember 30, 1900, from 233 places there were reported 1,465 cases with 178 deaths, a mortality of 12 per cent.

For the four years prior to this report, for the year ending September 30, 1895, from 59 localities only there were reported 993 cases with 144 deaths, a mortality of 14.5 per cent.

For the year ending September 30, 1896, from 66 localities there were reported 1,234 cases with 171 deaths, a mortality of 13.8 per cent.

For the year ending September 30, 1897, from 146 localities there were reported 658 cases with 126 deaths, a mortality of 19.9 per cent.

For the year ending September 30, 1898, from 165 places there were reported 1,085 cases with 109 deaths, a mortality of 10 per cent.

It will be observed that this disease is being reported from more places each year. In 1895 it was reported from 59 localities; in 1896 from 66 localities; in 1897 from 146 localities; in 1898 from 165 localities; in 1899 from 224 localities, and in 1900 from 233 localities. In each instance where this disease has been reported literature has been sent, and in many localities the public drinking water has been examined and found impure. This is another disease which should receive more attention. It attacks the young and middle aged, and a death from its cause is an absolute loss to every community, and its prevalence is only the result of negligence and carelessness. Again, in order to meet the spread of this disease, your Secretary most urgently calls for a laboratory. The demands for the examination of drinking water are becoming greater each year, and provision should be supplied whereby the demands can be met.

*Measles:* The statistics in regard to measles are undoubtedly more imperfect but a sufficient number of cases have been reported to show that it is a disease which should receive atten-

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*Secretary's Report.*

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tion. For the year ending September 30, 1899, there were reported 5,670 cases with 69 deaths, and for the year ending September 30, 1900, there were reported 3,292 cases with 45 deaths. Undoubtedly this only shows a proportion of the cases existing. The disease spreads most freely among school children and until medical inspectors can be provided for our public schools throughout the state, it is a very difficult matter to control its spread.

*Whooping Cough:* The same can be said concerning the accuracy of the report of whooping cough as has been said of measles.

For the year ending September 30, 1899, there were reported 3,543 cases with 84 deaths, and for the year ending September 30, 1900, there were reported 3,978 cases with 90 deaths. It will be seen that the mortality from this disease, from the cases reported, is about equal to that of measles.

This is another disease which can be met and controlled best by a medical inspector of schools.

*Pneumonia:* This disease has been as prevalent as usual throughout the state. For the year ending September 30, 1899, there were reported 2,572 cases with 810 deaths; and for the year ending September 30, 1900, there were reported 2,608 cases with 749 deaths. This is only an estimate of the cases existing as undoubtedly only a certain proportion are reported.

*La Grippe:* Many cases of la grippe have been reported during the past few years, but less for the past year than the year before. For the year ending September 30, 1899, there were reported 12,448 cases with 261 deaths, and for the year ending September 30, 1900, there were reported 8,806 cases with 70 deaths.

*Consumption:* For the year ending September 30, 1899, there were reported 1,203 deaths from consumption, and for the

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*Secretary's Report.*

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year ending September 30, 1900, there were reported 1,147 deaths. This is only a proportion of the deaths that occur, as our vital statistics concerning this disease, as well as others, except the first four diseases named, are very imperfect. Until our vital statistics can be more accurately kept it is utterly impossible to study these diseases to any advantage. Many circulars have been issued relating to the prevention of tuberculosis throughout the state during the past two years, and it is believed with very good results. It is evident to your Secretary that more precautions are being taken relative to this disease than formerly, and that the public is very much better informed concerning its character and prevention.

*Leprosy:* Your Secretary has made a thorough investigation of all cases of leprosy in the state and at the present writing but three cases can be found. No cases so far as known have ever been contracted in this state, and it is hoped, that with the precautions now being taken for the prevention of the disease being brought into the country, that so far as Wisconsin is concerned the disease will soon become extinct.

The following communications were received concerning a suspected case of leprosy at Paoli, Wisconsin.

PAOLI, WIS., April 30, 1899.

DR. U. O. B. WINGATE,  
*Secretary State Board of Health,*  
Milwaukee, Wis.

DEAR SIR:—I have under my care now a child, five years of age, suffering from a peculiar skin trouble that puzzles the local physicians called in consultation. The community are greatly excited over it, fearing it to be leprosy, and it does partake somewhat of the nature of that disease.

We wish the State Board of Health to assist us, by sending us an expert on skin diseases, to place beyond doubt the nature of the trouble.

Please take action immediately and oblige

(Signed) P. H. SMITH, M. D., Health Officer.

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*Secretary's Report.*

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In reply to this communication Dr. Louis F. Frank of Milwaukee was sent to make this inspection and reports as follows:

DR. U. O. B. WINGATE,  
Secretary.

DEAR DOCTOR:—At the request of your Board I visited Paoli, a small place south of Madison, the first part of May, 1899, to examine a case of suspected leprosy, diagnosed as such by two resident physicians. Dr. P. H. Smith, the physician in charge of the patient, informed me on my arrival that the little patient had succumbed to the illness 18 hours before my arrival. A post mortem was made by Dr. Smith and myself. The following is the history of the case: The patient in question was born Nov. 28, 1896. About 2½ months ago the child first complained of intense pruritus of hands and feet especially, and other parts of the body; small prurigo papules were visible giving rise to the itching. This for a long time was the only symptom. Gradually small vesicles formed on the hands and feet near the joints, which increased in size and extended deeply into the tissues, into the cartilaginous portions of the joints, causing deep ulceration and even loss of two phalanges, giving a striking picture of lepra lesions. Gradually symptoms of meningial irritation appeared, viz.: difficulty in swallowing solid food, ptosis of the right upper eyelid; in the latter stage of the disease child did not seem to be conscious of its surroundings, the conditions being that of stupor. Death was caused by coma.

As to the family history of above case, the following points may be noted: Both parents seem perfectly healthy, and had emigrated from Switzerland about ten years ago; their occupation is the manufacture of cheese. Their five older children are in perfect health, only the oldest son being an inmate of an insane asylum. Father and mother are first cousins.

The child has always been healthy, a hearty eater, but highly irritable. On Dec. 27, 1898, it was severely scalded.

The necrosed appearance of the hands and fingers suggested a diagnosis of leprosy but after considering the case from every standpoint such diagnosis could not be upheld for following reasons:

Absence of period of prodromata, pain, malaise, chills, rigor, etc. Absence of erythematous spots and macules. Absence of



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*Secretary's Report.*

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neuralgia. Age of the patient. Absence of paralysis of muscles, tendinous retractions and consequent deformities. Absence of source of infection and family history. Negative results of microscopic examinations for the bacillus of leprosy.

After careful examination and deliberation the disease was pronounced by Dr. Patek and myself as "Syringo-myelia" or Morvan's disease.

(Signed) LOUIS F. FRANK, M. D.

## VITAL STATISTICS.

During the past two years a printed form has been prepared each year, and sent to all of the registers of deeds of the different counties in the state, for a report from them giving the total number of births, total number of deaths, and also total number of deaths from smallpox, diphtheria, scarlet fever, typhoid fever, measles, whooping cough, and consumption. These reports have been received from all of the registers of deeds of the 70 counties, and prove conclusively that the present law is very unsatisfactory and very imperfectly enforced, so that practically our vital statistics, so far as they are made to the different registers of deeds of the different counties, are absolutely useless. With these blanks we sent a request for the registers of deeds to make any remarks or observations concerning the enforcement of the law that might seem desirable to them, and many suggestions have been received, nearly every one containing some different idea concerning the subject.

Your Secretary after years of experience, and much study of the question, is firmly of the opinion that a law should be enacted creating a State Vital Statistician, whose office should be located in the State House at Madison, preferably in the office of the Secretary of State, and he should be given power to enforce the vital statistics law; that this bill should provide for the collection of births, marriages, and deaths by either the health officers of the various towns, villages, and cities, the

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*Secretary's Report.*

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town, village or city clerks, or the assessors, and forwarded direct to the State Vital Statistician at Madison, doing away with the reporting to the registers of deeds of the counties.

This would be a great saving financially to the state, and I believe it is the only way we can have satisfactory statistics. The value of vital statistics is increasing from year to year, and it is of the utmost importance that some provision be made so that our state can study its growth and decay, and especially its diseases. The Attorney General has decided that the present law does not provide for paying physicians for reporting births, hence in many localities no births are reported whatever. Nevertheless the fees that are paid under the existing law are such that it is believed, after a careful estimate, that a saving of from \$10,000 to \$12,000, if not more annually, can be realized by creating the office of Vital Statistician at the capitol.

REPORT OF INVESTIGATION OF SUSPECTED SMALLPOX AT WILD  
ROSE, WIS., MARCH 30, 1900.

I visited Wild Rose at the urgent request of the attending physician of the case, and also of the local health authorities. Prior to that we had sent Dr. Pelton to investigate the matter, but they were not satisfied even with his report and that of Dr. Dodson of Berlin, who had been called in consultation before. The patient was a girl, 10 years of age, in the family of a merchant and the postmaster of the place. She had never been vaccinated, and no exposure could be traced except to what was supposed to be chicken pox that was reported to exist in other localities where she had been.

The following statement was given me by Dr. Fuller, the attending physician: that he saw the patient first on the 20th of March. "On that day she began to have an eruption which

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*Secretary's Report.*

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appeared first on the forehead and in the hair and gradually extended over the body; that she had been sick for three or four days prior to the appearance of this eruption; that with this eruption was a temperature of  $102.5^{\circ}$ , which disappeared as soon as the eruption was well out; that the eruption had a shotty feeling, especially when the skin was pulled tightly over the papule; the eruption was tender to the touch and itched a great deal. The second day after the eruption appeared the child had a very severe sore throat, which lasted for a couple of days." I saw the case on the tenth day of the eruption and then found several black scabs existing on the forehead and in the hair. These scabs were not the result of scratching, I believe, as no marks of scratching could be observed. The case had been seen by Drs. Pelton and Dodson two or three days prior to my seeing it and they had decided to leave quarantine up, although in the mind of Dr. Dodson there was some doubt as to the diagnosis. Dr. Pelton was more decided that it was a case of discrete smallpox. With the history as given me, and the condition in which I found the patient on the tenth day, I did not hesitate to declare that in my judgment it was a case of discrete smallpox, and advised quarantine to be maintained until the scabs had entirely come away. There was much feeling in the village and the parents were very indignant with the attending physician, thinking that he had attempted to create a smallpox scare for some personal reason concerning which I could see no truth whatever, and believe the physician was subjected to great injustice by the family he was attending. If the case was not one of smallpox, I believe it was one of those cases in which a positive diagnosis cannot be made, and in such cases the authorities all agree that quarantine should be established and maintained. When from the fact that a great deal of smallpox in the country has resulted from cases that were supposed to be chicken

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*Secretary's Report.*

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pox in the first place, and finally turning out to be smallpox, one is justified to be on his guard relative to any cases that may be questionable or may have the appearance of the milder disease.

The following is a letter written to the father of the child that was believed to be ill with a mild form of smallpox, the father not believing the health officer had treated the case properly, and also disbelieved that his child had the disease in question:

Dear Sir:—On reaching home I find your letter of the 28th ult. As there seems to be a decided misunderstanding on your part in regard to facts in the case, I take the liberty of writing the following letter of explanation:

In the first place I wish to state that I regret that I was unable to come to Wild Rose as I agreed to by telephone, and as I stated to you there my excuse was illness, which I think a valid one. The Board has always, and still has confidence in Dr. Pelton, and we thought as he lived so much nearer that he could investigate the matter satisfactorily. I was thrown off my guard a little at first, inasmuch as you probably know it is the function and duty of the local health officer to make all reports to this department, and not hearing any word from your local health officer I wrote to Dr. Hammond, and did not learn until some time afterward that he had moved away and that you had no health officer. The letter to Dr. Hammond is the one in which you claim that I stated that there was "grave doubt" about the existence of smallpox at Wild Rose. What I did say in that letter, which was written before I had received the report from Dr. Pelton as to the true situation, was as follows:

"I have to state that we are investigating the matter of smallpox at Wild Rose, and while it is claimed by some to be smallpox, there is a doubt. I expect to hear from there today or tomorrow concerning the matter. I do not see why it will be necessary to quarantine against the town as that case is quarantined, and will be kept quarantined, if it is smallpox, as rigidly as possible. I would therefore advise everybody to be vaccinated, which is much better than to quarantine."

These were the exact words which were contained in my letter to Dr. Hammond, and as stated before, were written to him

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*Secretary's Report.*

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in answer to his query as to the advisability of quarantining against Wild Rose and before I had received the report from Dr. Pelton.

Now, as to my statement over the telephone or in a letter, that it was not the "local authorities but some kickers" that were making complaint, I have to state, that in talking with Mr. Jones on the day I was at Wild Rose, he stated distinctly that I said no such thing over the telephone and that if you had anything of that kind it was in a letter. There was certainly nowhere in any of my letters that I used the word or term "kickers," so you are entirely mistaken in regard to these two matters.

Now, as to the matter of Dr. Fuller's reporting this case to be smallpox and believing it to be something else: I am thoroughly convinced that Dr. Fuller is perfectly honest in his endeavors. I consider that he has taken a very wise and judicious course to protect the public, even if there was a doubt in his mind it was his duty to quarantine. The best authorities, and amongst them I will quote Goodall and Washbourn of London, two of the best authorities on infectious diseases of late, state distinctly that there may be cases of chicken pox in which a positive diagnosis cannot be made, but in all such cases where there is a doubt they should be quarantined and the public should have the benefit of any doubt that may exist.

As to whether your daughter is suffering from smallpox or not, I desire to state the following, which led me to make the diagnosis I did: In the first place, in chicken pox the eruption appears on the first, and never later than the second day of the patient's illness. The evidence that I obtained in this case was that the eruption did not appear until the third or fourth day of sickness, which is the usual time for the eruption of smallpox to appear. Second, the eruption of chicken pox disappears on the fifth and never later than the seventh day from the time of its first being seen. In the case of your daughter, I saw her on the tenth day of the eruption and there were still black scabs that would not come off for several days. In chicken pox the scabs are yellowish brown and never black; in smallpox they are frequently black, as appear in the case of your daughter. In chicken pox sore throat is the rarest of all conditions: in smallpox it is a common condition, as existed in your daughter. The history and the condition of your daughter at the time I saw her would not permit me to make

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*Secretary's Report.*

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any other diagnosis than that of a mild form of smallpox, and if it should ever turn out not to be that, which can be only proved in two ways,—that of her having vaccination take thoroughly or of her having smallpox again within two or three years,—all I have to say is that under such circumstances a positive diagnosis was impossible, and that the only course to pursue was to quarantine.

Our Supreme Court has decided, and it is on record, that a board of health or a physician cannot be held responsible for errors of judgment, and certainly if there are any errors in this case they are those of judgment and not from any malice or intention not to be honest in the matter. In my best opinion and belief, based upon my experience and upon the evidence obtained and the condition of your daughter when I saw her, I certainly believe it to be a case of mild smallpox, and can arrive at no other conclusion.

I trust that you will not harbor hard feelings against Dr. Fuller, for it seems to me that he has taken the only wise course that could be taken under the circumstances. I do not say this because he is a friend of mine, I never saw him before and know nothing of him other than what I saw on the day I was there, but I would commend any physician who has been as careful as he has of the public health in any locality. It is much better to be cautious in such matters than to be careless, and certainly he has been cautious and has done everything he could, in my estimation, to protect the public against any possible danger.

#### REPORT OF OUTBREAK OF SMALLPOX AT WEST SUPERIOR.

On the evening of April 12th, 1900, I received a telegram from Governor Scofield from West Superior, asking me to come there at once and look after an outbreak of smallpox which needed the attention of the State Board of Health.

I arrived in West Superior on the morning of April 13th and met Governor Scofield and the Health Commissioner, who gave the following history:

That smallpox had existed all winter at Duluth, Minn., and that a young man in the employ of Governor Scofield, as clerk

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*Secretary's Report.*

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in his lumber office at West Superior, had probably contracted the disease from Duluth, and had been sick some eleven or twelve days. Seven days ago he was removed to the hospital, as there was no other place to take him. This hospital is a general institution, containing at the time seventy patients, but the smallpox patient was removed to the upper fourth floor, on which floor there were no other patients.

I visited the case which was on the seventh day of the eruption, and it proved to be a case of confluent smallpox. The young man had been vaccinated several times but it had never taken. He was just beginning to have symptoms of secondary fever and was too ill to be removed. They had fitted up an isolation hospital, and had it ready for occupancy the day of my visit, located some three miles distant from the heart of the city. I ordered the floor in the hospital quarantined and entirely shut off from the rest of the building, and no one allowed in that part, except the nurses who were to take care of him, and his attending physician and, as soon as he was able, to be removed to the isolation hospital, and the institution in which he then was to be thoroughly disinfected. There had been some exposure prior to his being removed to the hospital, but people were being generally vaccinated, and it was to be hoped that the disease would not spread.

On the same day I visited the new filter plant, which had just been completed by the water company who are furnishing water for the city of West Superior. This filter plant is constructed on the same principle as the one at Ashland, and promises to give West Superior a pure supply of water. The water supply of Superior is taken from Lake Superior, the intake pipe running across the channel of the river and thence into the lake. The channel of the river receives the sewage from the city, and it is reported that this intake pipe is broken somewhere in its course across the channel, hence their water supply

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*Secretary's Report.*

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was contaminated, and this led them to put in the filtration plant.

REPORT OF SECOND INSPECTION OF SMALLPOX AT WEST  
SUPERIOR.

On Sunday, April 15th, I received a telephone message from Governor Scofield stating that more cases of smallpox had occurred in West Superior, and that the people were dissatisfied and that it was absolutely necessary for me to visit the place again and do what I could to quiet the disturbance. I arrived in West Superior the second time on Monday morning, April 16th. Met the health officer, who informed me that the great difficulty was because of the change liable in his office; that in a day or two the new city government would reappoint the health officer, and that his men under him were unwilling to do anything until that matter was settled; that he was unable to get men to do their duty. He had, however, completed the isolation hospital, which was a small building fitted up for the purpose of caring for smallpox cases in the outskirts of the city, and some Sisters of Charity were there at work.

The first case which was in the West Superior hospital had improved to that extent that it was safe to move him; he was, therefore, removed that day to the isolation hospital. Two other cases had occurred: one an old man, living by himself with his wife and daughter, who had a case of discrete smallpox. He was not ill and up and about the house. He was to be removed to the isolation hospital that day. The other case was a woman who lived in a flat, and in which building was a saloon, with her husband, who was intoxicated at the time of my visit, and a small child two or three years of age, which I vaccinated. The woman had been sick a week but was up and about the house and did not complain of feeling very ill. She had discrete smallpox. The Commissioner of



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*Secretary's Report.*

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Health promised to remove her and the child to the isolation hospital that day. I at the same time wired the Secretary of the State Board of Health of Minnesota, Dr. Bracken at St. Paul, asking him if he was looking after the cases at Duluth, Minn., from which place all of these cases were contracted so far as I could learn. General vaccination was being performed in West Superior, and I advised the health officer to prepare another building at once, as the one he has will only contain the three patients which are now there, and as more cases are liable to occur they should have a place to put them.

I left West Superior that night leaving matters in as satisfactory condition as was possible under the circumstances. Also wired Governor Scofield of the situation.

## REPORT OF INVESTIGATION OF SMALLPOX AT WOODVILLE, WIS.

On April 16th, 1900, a telegram was received for me to visit Woodville at once to verify diagnosis of smallpox. This was from Dr. Stockman, the health officer. As I was at West Superior at the time could not respond that day. On the 17th inst. I telephoned Dr. Stockman and he still insisted upon my coming as soon as possible. I arrived at Woodville on the morning of April 18th, and met Dr. Stockman and another member of the board of health, and learned that a young man, several weeks ago, had been taken ill, having contracted the disease from a woman from Minneapolis. I saw this case. He was out on the street, now well, but has scars on the face which indicate that he has had a well marked case of smallpox. I saw a clerk, a young man who had never been vaccinated, and he was in the fourth or fifth day of the eruption. There was no question about the diagnosis in his case. His sickness began with severe headache and backache, with an increase in temperature, and the eruption did not appear until

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*Secretary's Report.*

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the third day after he was taken sick. I was also told by Dr. Stc 'man that his wife had the disease in a very mild form, not having more than a dozen papules on the body, and she had never been vaccinated. A great deal of exposure had taken place, as the people did not believe it was smallpox, although the doctor had insisted upon it and quarantined as far as he could.

I advised thorough quarantining of all cases, and thorough disinfection wherever any sickness had occurred, and in the houses where any sickness should occur in the future; also to vaccinate the inhabitants generally. Thus far there have been four or five cases in this place. The clerk, above referred to, was the only one that was confined to the house with the exception of the doctor's wife, at the time of my visit, all of the others having recovered.

REPORT OF INVESTIGATION OF SMALLPOX AT SPRING VALLEY,  
WISCONSIN.

On April 19th, 1900, I was telephoned to come to Spring Valley at once to decide whether they had cases of smallpox or not. I arrived about noon on the 20th of April, 1900, and met four physicians of the place, one being the health officer.

The history was that some months ago a young lady had an eruptive disease, which was supposed to be contracted at Minneapolis. She had come in contact with many people; and all of the cases were traced to this one case, and she lived in an adjoining town, as I understood it, of Spring Lake. There had been several cases of what was supposed to be chicken pox existing in the village, and also in the surrounding country. At the time of my visit there were five cases, four in one family and one in another in the village. I visited these four cases in one family, together with these four physicians. The ma-

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*Secretary's Report.*

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majority of the physicians had their doubts about its being chicken pox, but one, the attending physician, believed the cases to be chicken pox. On examination I found as well marked cases of smallpox as one could wish to see. Two of the cases were in the fourth day of the eruption, and one of the patients was evidently quite ill. His face was completely covered with papules, having the shot-like feeling and the eruption was beginning to appear on the chest and limbs. One case was in the pustular stage, the hands and arms being completely covered with pustules, and the face was quite covered with scabs. All of these cases were adults; history being, that they commenced with headache and backache, eruption not appearing until the third or fourth day, although some of them claimed that the eruption appeared on the second day. The other case I was informed was exactly like these and I did not see it. I also learned that there were cases just the same in the country, and I drove to one house in the township of Spring Lake, some two or three miles from the village, and there found a farmer who had been ill for about two weeks, who had commenced with a headache and backache, and eruption appearing on his head and face in three or four days. At the time of my visit he was out at work about his premises with hands and arms pretty well covered with smallpox pustules, and many scabs on his face, forehead, and in the hair. He lived in Spring Lake township, Pierce county. Just over the line, in the town of Cady, St. Croix county, his brother lived, and both his brother and wife had had the disease, but were convalescing. These parties had had no physician, and no precautions had been taken, and much exposure had existed from both the cases in the townships and in the village.

I ordered strict quarantine in all cases, to vaccinate everybody who would submit to the operation, and to disinfect thoroughly in all instances, and especially the clothing of those who

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*Secretary's Report.*

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had been exposed in any way. The local board of health took immediate steps to carry out my instructions, and while there has been great exposure the local authorities are now on the right track, and it is to be hoped that they will carry out necessary measures to prevent the further spreading of the disease. The health officers of the townships were immediately notified of the situation, and given strict orders to quarantine carefully.

The following notice was prepared and inserted in the local paper of the place:

TO THE PUBLIC OF SPRING VALLEY AND VICINITY.

This is to certify that on the 20th day of April, 1900, I visited Spring Valley, and in company with the local health officer of the village and three physicians of that locality, I visited and examined a family in which there was reported to be a suspicion of smallpox. I found four young men in this family suffering with almost typical smallpox. There is no question about the diagnosis of this disease, and it has been a common thing to mistake chicken pox for smallpox throughout the country during the present epidemic on account of the mildness of the disease. Having had an experience of over a quarter of a century in the practice of medicine, and having seen over five hundred cases of smallpox in all its varied stages and forms, I know whereof I speak in pronouncing these cases true smallpox. It should be borne in mind that chicken pox is a very rare disease in persons above twelve or fourteen years of age. It is almost invariably a disease of childhood, and whenever any disease having the appearance of chicken pox appears in an adult it always gives rise to suspicion of smallpox, or should, in the minds of the attending physician and local authorities; but these cases that I saw were very plainly cases of smallpox, and no doubt there are other cases existing which are so mild that no physician's attendance has been thought necessary, and that they have also been considered as cases of chicken pox. I desire to warn the people of this locality against all cases of eruption in adults. In order to stamp out this disease in the community all such cases should be carefully

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*Secretary's Report.*

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investigated by the local authorities, and every one should be vaccinated as early as possible, for in successful vaccination is our great protection against this loathsome disease.

While the disease is very mild, as a rule, these mild cases are liable to give rise to more serious forms of the disease at any time, and a malignant type may result from infection taken from a very mild form. The local board of health of Spring Valley is fully aware of the character and nature of the disease, and will take every precaution necessary to stamp it out. I call upon all good citizens to support the local health authorities in their work, and aid them in every way possible to eradicate this disease from the community as early as possible in order to save great expense and to remove danger to business, etc., which naturally results from the continuance of such a disease in any community. The disease also exists in the township of Spring Lake and in the town of Cady, and the health authorities of these localities have been cautioned in regard to maintaining strict quarantine and carrying out rigid disinfection in all cases, as well as urging vaccination of all persons as early as possible.

(Signed) U. O. B. WINGATE, M. D.,  
*Secretary State Board of Health.*

April 23rd, 1900.

As the result of this investigation at Spring Valley the local paper of that place saw fit to question the diagnosis made, and the following, among other things, was published in its columns:

NOT SMALLPOX.

The disease which is now scaring many people out of their wits is not smallpox.

We know in saying this that we run up against the dictum of Dr. Wingate, of the State Board of Health. He said: "Any contagious eruptive disease in adults which you do not understand should be called smallpox," and as soon as he stuck his nose into the room where the patients were—before examining them—he said, "smallpox." But the facts do not seem to bear him out.

If a man should bring you an animal which looked almost like a sheep and say:

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*Secretary's Report.*

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"This is a cow," you might say, "Why, it doesn't look like a cow."

"No matter; it is a cow."

"But it doesn't give milk like a cow."

"Well, I say it is a cow, and I know."

"But it has no cloven hoof."

"I am not here to give you a lecture on cows; it is a cow, and anyone who disputes it shows that he doesn't know cows."

Would you believe it was a cow?

This disease starts with a slight fever and pains like rheumatism; the temperature may be 103 or 104 the first day, but is lower the next. On the third day the eruption appears, and from that time the patient feels well, although the eruption may linger some time. Does a man with smallpox feel well when he breaks out?

The appetite increases, and they eat very heartily all the time. Is this like smallpox?

The pimples do not sink in—umbilicate, as the doctors call it—at all, nor has a single pit been formed in all the cases we have heard of. Is this smallpox?

Several pregnant women have had it in this neighborhood, and have been no sicker than others. Many people who have had it have not been sick enough to stop work. Is this smallpox? There is no smell to the disease. Is this smallpox?

About half the doctors around here do not believe it to be smallpox; the others did not think so until told so, and even they say it is a rarely light form of it. Those who treat the most cases are the ones who will not call it so. They know best.

But—nobody wants it.

And it should be strictly quarantined and stamped out. Those who have it should stay away from work and stop visiting around, and others should stay away from them, even if not afraid of it.

It is now all over the country. Other towns have quarantined it and said nothing; one or two "Spring Valleyites" have put the fact that we have a few cases before the public in such a shape that our trade has been badly hurt, and the people foolishly alarmed."

Such was the opinion expressed by the local paper, and many other articles appeared of a similar nature or worse, abusing

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*Secretary's Report.*

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the Secretary of the State Board of Health for his precautions. On Wednesday, May 9th, 1900, in the afternoon, I received a telephone message from the City Physician and health officer of New London, Wis., asking me to come there and verify a suspected outbreak of smallpox. On visiting the patients next morning I found three cases of smallpox in one house, the first case having contracted the disease at Spring Valley where the local paper abused me for calling it smallpox. The disease had been diagnosed in New London as chicken pox, until a few days prior to my visit, when an older physician was called in and declared it to be smallpox. Three physicians had declared it to be chicken pox and two had decided that it was smallpox prior to my visit. Quarantine was established and of course maintained. Two of the cases were recovering and another one just coming down with it, a woman who apparently was very ill. This patient died of hemorrhagic smallpox a few days later, and yet this case came from one taken at Spring Valley where the local paper abused the State Health Officer for his precautions and diagnosis of smallpox. The authorities at New London took active measures and kept the cases strictly quarantined, and urged vaccination of all citizens that they could possibly reach.

REPORT OF INVESTIGATION OF OUTBREAK OF SMALLPOX AT EAU  
CLAIRE, WIS.

On May 22, 1900, I received a telegram from the Board of Health of Eau Claire, that there were ten cases of smallpox reported, and that the board of health was desirous of having the Secretary of the State Board come at once to advise with them. I went to Eau Claire on the 23d inst., the next day, and together with the health officer, Dr. R. R. Chase, visited several of the cases, and found that they were genuine cases of smallpox. During the past forty-eight hours eighteen cases have

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*Secretary's Report.*

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been reported, so that altogether there were twenty-eight cases. The city had no Isolation hospital, it having been burned some time before. The physicians, and board of health, city officials, and school board were co-operating together, but there was some difficulty in maintaining quarantine as some of the people had doubts about its being smallpox on account of the light character of the sickness. After my visit they seemed better satisfied and quarantine was rigidly maintained, a guard being placed at each house where the cases were. One physician had been employed to attend all cases, and to give up his general practice, and the people were being generally vaccinated,

At the request of the board of health and physicians I prepared a statement to be published in the local papers, and copies were to be printed and circulated about the city, to the effect that smallpox existed in the city, and that it was necessary for the business men and all good citizens to co-operate with the board of health, and to stamp out the disease as quickly as possible. I also urged them to establish at once an isolation hospital where all cases were to be removed that occurred in hotels, boarding houses, or in thickly populated parts of the city, and where cases could not be properly isolated in the judgment of the local board of health.

The cases first originated from a perforated and disinfected letter from West Virginia, which evidently was not sufficiently disinfected. At one time the disease had ceased to exist, with the exception of a focus of infection from which the other cases were taken, and this focus of infection was in the person of a boy whose parents kept him isolated without calling any physician, and allowing the other boys to attend school, and thus the exposure was considerable, and the cases could all be traced from this one source.



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*Secretary's Report.*

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REPORT OF INVESTIGATION OF OUTBREAK OF SMALLPOX AT  
MENOMONIE, WIS., JUNE, 1900.

On Saturday, June 23, 1900, I received two telegrams from the health officer of Menomonie, to come there at once and investigate suspected outbreak of smallpox. I arrived in Menomonie late Saturday night, and met Dr. H. M. Read, the health officer, early Sunday morning, when we went and visited a patient, a young man some 22 or 23 years of age, who was suffering from a well marked case of smallpox. The attending physician had never seen smallpox and believed that this was a case, but the health officer was anxious that the State Board of Health should verify the diagnosis. I was then informed that chicken pox had existed in some children in the next house to this patient. I visited and examined one child, a little girl 8 or 9 years of age, and found her suffering from a very mild attack of discrete smallpox; two others had nearly recovered. The father of these children was at church at the time of my visit.

Rigid quarantine was immediately established in both cases, and all precautions possible taken. The case was undoubtedly contracted from exposure to cases in Eau Claire.

The following report was received from Dr. G. W. Harrison relative to smallpox at Medford:

ASHLAND, September 18, 1900.

"On the 1st of September, 1900, I was requested by yourself to go to Medford to investigate what was supposed to be a case of smallpox. I was taken by Dr. LeSage to a house in the outskirts of the town where we found a patient suffering from a case of smallpox. Four of his children, two boys and two girls, had had it before him, the oldest boy, about 16 or 17, had been working in a livery stable, driving traveling men to other places outside of Medford, and also drawing old rags for his father who is a gatherer of the same, and thought he had caught the disease from one or the other as he was the first

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*Secretary's Report.*

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to be taken down. The four children were better, almost fully recovered when I saw them. The father had been ill about ten days so that the eruption was at its height, so there was no doubt as to the disease. The health officer had taken all the precautions possible to prevent its spreading, and most of the people had been, or were being, vaccinated, so there will be no further alarm from trouble there."

(Signed.) G. W. HARRISON, M. D.

## REPORT OF DIPHTHERIA AT DARLINGTON.

On March 15, 1900, Dr. Q. O. Sutherland of Janesville reports that "I went to Darlington Sunday noon, on a freight train; arrived there at 4 P. M. Took a carriage and went to three places in the country. Two cases were easily diagnosed as diphtheria, the third I could not determine as the throats had both cleared up. There had been six cases and one death. The trouble arose from its having been diagnosed as tonsillitis at first, and allowing the two families free access to the house, and they all assisted in the care of the first case that died. Just before death another physician was called who pronounced it diphtheria. Two members in each of the other families were ill and I was not sure that one was diphtheria. The health officer of the township, having seen the first cases for three days, did not believe them to be diphtheria and would not enforce quarantine, but the health officer of the city of Darlington declared it to be diphtheria, and threatened arrest of those who came into the city. I advised all to be quarantined pending examination by you."

(Signed.) Q. O. SUTHERLAND, M. D.

The following letter was received:

DARLINGTON, March 11, 1900.

"I wish to thank you kindly for your prompt action in getting a member of the State Board of Health here. Dr. Sutherland has been here and has pronounced the cases diphtheria, and I send you by registered mail a specimen from three different throats which I wish you would make cultures of, and report to me as soon as possible the result of your examinations, so I will know still better regarding the quarantine."

(Signed) C. G. DWIGHT, M. D., City Health Officer.

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*Secretary's Report.*

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The following letter was received March 14, 1900:

"Your report at hand and many thanks. Will you kindly examine again carefully the culture in which you failed to find the Klebs-Loeffler bacilli, as I hardly understand why it was not present if you find them in the others. Kindly let me know by return mail to settle existing dispute."

(Signed.) C. G. DWIGHT, M. D.

Another careful examination was made of the specimen named with negative results.

REPORT OF INVESTIGATION OF OUTBREAK OF DIPHThERIA AT  
WAUPACA.

On March 27, 1899, a telegram was received from Dr. L. H. Pelton, Health Officer, Waupaca, to come to Waupaca at once relative to an outbreak of diphtheria.

On arriving the next morning I visited the house in which a child had just died, and there were three others consisting of the mother, another child, and a servant girl ill with the disease. The history of the case was that the father was a barber and had had a sore throat for a number of days about a week previous but had not given up his work. A few days after his trouble began. His wife was taken with the disease, and the next day a boy died two days after being attacked. The attending physician had not diagnosed it as diphtheria up to the time of my visit, but the health officer had heard of the outbreak and had visited the case and had decided that the disease was diphtheria, but in order to settle the dispute beyond question and to satisfy the attending physician he sent word to the State Board of Health. From the clinical symptoms there was no doubt about the disease being diphtheria. I, however, inoculated culture tubes from the throat of the child that was sick and from the servant girl, and took them with me and found the Klebs-Loeffler bacilli in both specimens. The next day I heard

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*Secretary's Report.*

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that the mother of the child died. Proper precautions were being taken at the time of my visit on behalf of the health officer, and so far as I have learned since the disease did not spread from that family.

The case is one well illustrating the importance of making an early diagnosis of this disease. Many instances undoubtedly occur that are treated by the physicians at first for follicular tonsillitis, which the attending physician in this case diagnosed at first and which results in a malignant form of diphtheria. In none of these cases was antitoxin used, and had the cases been properly diagnosed in the first place, and proper treatment administered, it is possible that the result might have been more satisfactory.

REPORT OF SECOND INVESTIGATION OF OUTBREAK OF DIPH-  
THERIA AT WAUPACA.

On April 26, 1899, I received a telegram from Dr. L. H. Pelton, health officer of Waupaca, to come to Waupaca on the earliest possible train. I arrived late that night, and the next morning met the health officer who informed me that a case of diphtheria occurring in the person of the wife of a physician of that city had broken out in one of the hotels. The patient had been removed to a vacant tenement in a double house, one tenement of which was occupied by a man and his wife and two or three children. The tenements were entirely separate, and the one in which the patient was cared for was up stairs and so arranged that no communication could come between the two families. The man living in the house, however, being a laboring man, had made considerable trouble and threatened the city with a suit, and the board of health desired the State Board to investigate the matter, and to sustain their action or not as was thought advisable.

After investigating the matter, the local board of health was

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*Secretary's Report.*

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called together and it was decided that under the circumstances no danger would occur to the family as they were so completely separated that it was practically as safe as though the patient had been removed to another house. Moreover, the lady who was ill was apparently recovering and it appeared to be a light case. Antitoxin had been used in the first stages of the disease. My visit, it is hoped, will quell the disturbance which was exciting the people very much. Various other matters pertaining to the care of contagious diseases, and also the drainage of the city of Waupaca, were discussed, and such advice given as seemed advisable under the circumstances.

The outbreak of diphtheria in Waupaca in both instances, the one which was investigated a month prior to this, and this one, seemed to have been contracted outside the city. There does not seem to be any unsanitary conditions in Waupaca that would be productive of diphtheria, and in both instances, as far as could be learned, the disease was contracted elsewhere and brought into the city. In the former outbreak there were 4 cases with 2 deaths.

## REPORT OF OUTBREAK OF DIPHTHERIA AT TOMAH.

On September 3, 1900, the following telegram was received from La Crosse:

“Quarantine at Tomah perfect.”

(Signed.) F. C. SUITER, *Member of the Board.*

On September 4, 1900, the following letter was received:

“My telegram of recent date explained the situation at Tomah. The Indian school is situated just outside of the city of Tomah, in the town of La Grange, and is in charge of one of the physicians of Tomah; another physician is health officer of Tomah, and between these two gentlemen there was some misunderstanding. During the week previous to August 25th, a

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*Secretary's Report.*

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helper at the school was attacked with quinsy, a clear case, and after partial recovery was removed to her brother's house in Tomah. Two days after the brother was attacked with what the doctors in attendance called quinsy. His throat was lanced, and two days later he died of diphtheria, pronounced so by the health officer of Tomah. In the meantime two cases of diphtheria presented themselves at the Indian school, and immediately the health officer of Tomah declared that the first case was not quinsy but diphtheria, and that the physician who pronounced it so was at fault for not reporting the cases at the school.

A meeting of the Board was called, and the school quarantined. The physician at the school on the other hand suggested that the health officer of Tomah might be wrong in his diagnosis of diphtheria in the case of the man, and that if his throat had been lanced for quinsy it probably was the correct diagnosis; that if the health officer of Tomah would attend to health affairs in the city as well as he did at the school no trouble would arise, etc., etc.

I found that sanitary measures had been adopted by both physicians in their respective places that probably could not be improved upon, and suggested to them to settle their personal difficulties in some way agreeable to themselves. I find, however, that at the Indian school the basement extends under the whole of the main building, which is at least four feet beneath the level of the ground, and is at any time of the year very damp. No heat has been introduced here during the past summer, and its condition is certainly unsanitary. I advised the purchase of a formaldehyde gas generator, and it was ordered. The reports circulated in regard to the prevalence of diphtheria at the school were very much exaggerated and will, unless corrected, particularly among the Indians, work to the detriment of the attendance this fall.

No action by the Board being required, or other advice to be given, I considered my telegraphic report sufficient."

(Signed.) F. C. SUITER, M. D.

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*Secretary's Report.*

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In addition to this the following communication was received:

September 3d, 1900.

To the Secretary of the State Board of Health, Milwaukee,  
Wis.:

DEAR SIR: I hereby report to you that the city of Tomah did on the 30th day of August, 1900, quarantine the U. S. Govt. Indian school situated about one-half mile north of said city in the town of La Grange, for the following reasons: That on the 27th day of August, 1900, one child died at said school and was buried on the same day in the cemetery of the city of Tomah, the burial permit was issued by the clerk of the city of Tomah and the cause of death given therein by the attending physician was diphtheria. On the 30th day of August there was one death of diphtheria in the city of Tomah, the patient was a man twenty-seven years old. Prior to the development of the latter case a lady, the sister-in-law of the man who died, was employed as a cook at the said Indian school, and visited the family of the deceased, having at that time a very sore throat, and it seems to this Board that the disease was brought by this girl from the said school into this family in the city. Up to this time (Aug. 30th, 6 P. M.,) people from the city went in and out of the Indian school and no card of quarantine was, up to that time, displayed anywhere on the school building or the premises. The board of health of the city of Tomah, hearing by rumor of the condition of things at the Indian school, sent the health commissioner of the city of Tomah and the city marshal to the health officer of the town of La Grange to ascertain if any contagious disease at said school had been reported to him, his answer was that no report had been made to him and that nothing had been heard about it. For the above reasons the board of health of the city of Tomah, consisting of the mayor, six aldermen and the health commissioner, voted to quarantine the Indian school against the city of Tomah. Late in the afternoon of the 30th inst. the health officer of the town of La Grange came to Tomah and produced a notice dated Aug. 27th, 1900, and the envelope of this letter was stamped Aug. 29th, 2 P. M., by the postal authorities, which was two days after the death from diphtheria at the Indian school. On the 31st day of August the attending physician at the Indian school, in conversation with the mayor of the city of Tomah, stated

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*Secretary's Report.*

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that the death at said school was not diphtheria and at the same time tried to recover the burial permit already referred to from the city clerk. On the 1st inst. another patient died of diphtheria at the Indian school.

The undersigned consider the above facts worthy of the consideration of the State Board of Health.

Respectfully submitted,

W. H. SCHULTZ,

*Mayor, and President Board of Health.*

DR JACQUES SIMONSON,

*Health Officer.*

Attest:

H. B. VANDELL,

*City Clerk and Clerk of Board of Health.*

In connection with the above the following letter was received, dated September 1, 1900:

“Enclosed please find a report of two deaths at the Indian school, located in La Grange, Monroe county. On the 30th of August the health officer and the marshal of Tomah came to my house and notified me that a death had occurred from diphtheria at the Indian school, and another boy was sick with it. This was the first notice I received. I immediately went to the home of the chairman of the board of health, and found that he had received a notice by mail, dated August 27th, from the physician in attendance at the school, who stated in his notice that strict quarantine regulations had been adopted. The clerk put the notice in the wrong mail box. I then went to Tomah to see the physician in attendance upon the Indian school, but found that he was out of town and would not return until midnight. I found Tomah full of excitement as a death had just occurred in that city. They were so afraid of the Indian school that they held a special meeting of aldermen, and hired a special policeman to stop anyone from entering Tomah from the school. Their health officer, attorney and marshal told me they thought I ought to go to the school and quarantine the entire premises. This to me seemed to be a very serious thing. I went up to the school, and after a thorough inspection I found that they had one patient, sick with diphtheria, and were as anxious for the suppression of the disease as the city of Tomah; they had



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*Secretary's Report.*

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placed the patient in a building, 100 feet from any other building, under the strictest quarantine. Nobody allowed near the building except the attendants who were in charge of the sick boy (they were not allowed to leave it), and the steward who carried their food to them left it on the stoop. They were so particular that they would not even allow the linen and bedding used around the sick to be washed, but had them put in the furnace. After a careful investigation I came to the conclusion that the doctor and superintendent were doing everything in their power to control the disease, and I left on a card a warning to visitors and others to keep away from the infected building, fully believing that the gentleman in charge would do better without being hampered in any way by me. The superintendent had forbidden any of the inmates from leaving the premises, and strangers were not allowed to enter without permission. I saw the attending physician that night, and he explained freely what had been done. He said he had been the physician for the school for seven years, and the girl who died on the 28th was the first patient he had lost. He had the best record of any physician for the Indian school in the country, but now his record had been broken, and he would rather have forfeited his year's salary than have had it happen. The superintendent explained to me that they were getting their scholars together for the next year's schooling, and if the Indians thought there was any danger at the school it would be next to impossible to get them. It seems to me that everything is being done that can be done, and I hope I shall be able to report to you before long that all is well at the Indian school. I met Dr. Suiter of the State Board today. He had been at the school and thinks that everything is being done for the best.

(Signed)

JOSEPH NEWSOME,  
*Health Officer, La Grange.*

This was the last that we heard from the outbreak. The disease soon disappeared from the school.

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*Secretary's Report.*

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## REPORT OF OUTBREAK OF DIPHThERIA AT SURINGS.

The following telegram was received:

“SURING, September 18, 1899.  
“Diphtheria spreading. Six new cases since yesterday morn-  
ing. Please investigate.  
(Signed.) J. SERIER.”

Not being able to respond to this I wired Dr. J. H. McNeel of Fond du Lac, Wis., and received the following:

“Cannot well leave tomorrow; have engagements.  
(Signed.) J. H. McNEEL, M. D.”

On the 19th inst. the following was received:

“Health officer's family has diphtheria. Physician attend-  
ing, R. J. Goggins of Suring. Send us aid at once. Still  
spreading.  
(Signed.) J. SERIER.”

Still being unable to respond to this case I wired Dr. W. H. Cantwell of Shawano, Wis., to investigate the case, and the following is his report:

“September 20, 1899.  
“I left here upon receipt of your telegram last evening and arrived in Suring early this morning and found diphtheria at four different houses, three or four miles from Suring at a place called Hayes P. O., town of How. Also found the body of a child, about 12 years old, that had died of the disease yesterday afternoon still unburied. The father last night refused to allow the child to be buried without a public funeral, but after talking with him a short time and explaining to him the law, and reasons for the same, he readily consented to have the body buried at once. The other cases are all quarantined, and every precaution taken by a member of the town board who is acting in the place of the chairman (whose house is quarantined, his wife and one child being sick with diphtheria), together with Dr. Goggins they have the people well under control, and do not anticipate any further trouble. There will,

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*Secretary's Report.*

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without any doubt, be more cases, due to the farmers visiting back and forth before quarantine was established. I do not think they will need further assistance, and trust that no more cases will develop as they are all afraid of the disease now since the death of the child yesterday.

(Signed) W. H. CANTWELL, M. D."

REPORT OF INVESTIGATION OF DISPUTED SCARLET FEVER AT  
VERONA, WIS.

On March 7, 1900, I received a telegram from a physician at Verona, requesting me to visit that place and investigate a disputed case of scarlet fever.

I visited Verona on March 8, and attempted to find the health officer, but was unable to do so as he was absent from his office. I then visited a female patient, ten years of age. Found that sixteen days from the date of my visit she came home from school on a Wednesday night, a cold, stormy day, complaining of sore throat and had some fever. A physician did not see her until the Saturday following when he found inflamed tonsils; a dry, short, hacking cough; severe pain in the lower left side; pain very severe on coughing and respiration; there was marked bronchial breathing, and signs of consolidation; rapid respiration; slight expectoration, and later some blood was expectorated; temperature remained up for forty-eight hours but finally subsided. There was no eruption at any time according to the statement of the physician and the family; there was no scarlet fever in the place, nor had there been any except one case which had been reported three days after the beginning sickness of this patient, a child that did not attend school, so there was no evidence of any exposure to the disease on the part of this patient. On examination on the sixteenth day, at the time of my visit I found a perfectly smooth skin with no evidence of desquamation anywhere. The urine was tested and found to be free from albumen. The child had conjunctivitis following the

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*Secretary's Report.*

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illness, from which she had nearly recovered. She had enlarged tonsils which was a chronic condition with her, and also adenoids. The house was placarded for scarlet fever, and there was a difference of opinion between the health officer and the attending physician. I also learned that a physician from Madison had been called three days prior to my visit and had agreed with the physician that it was not scarlet fever. I saw no evidence of scarlet fever in this case, nor any evidence that the patient had suffered from it.

I then visited another house which was placarded for scarlet fever, and found a young man, twenty-two years of age, who had been having a chronic skin trouble for about a month; the eruption was still present, the character of which I was unable to decide, but it had none of the appearances of scarlet fever. The patient had had no fever at any time and was up and about the house. The health officer also declared this case scarlet fever and had quarantined the house. I pronounced both of these cases as not scarlet fever, and recommended quarantine to be removed, and made a full statement of the facts in writing as I found them to the health officer, and also sent a copy of my letter to the attending physician.

The following letter was sent to the health officer:

March 8, 1900.

Dear Doctor:—I beg leave to state as follows: Yesterday afternoon I received a telegram from a physician at Verona, asking me to officially investigate a disputed case of scarlet fever at that place. I went to Verona this morning, and at once attempted to find you, but was unable to do so as you were out of your office at the time we called. I regret this exceedingly, as it is not the custom of this Board to investigate cases of this kind without co-operating, and having a clear understanding, with the local health officer, but under the circumstances I could do no better as I was obliged to return on this noon train.

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*Secretary's Report.*

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I, therefore, take this first opportunity to herewith make a full statement of my investigations. I visited, and very carefully examined, a girl of ten years of age and also a young man, the houses in which said patients were found being placarded for scarlet fever. I have to state that from the evidence that I could obtain, and from my examination I could not find that scarlet fever existed or had existed, and would most respectfully recommend that the quarantine be removed. The history of the case of the young girl seemed to me to be very plain, and I learned that there had been no eruption whatever at any time; neither has there been any desquamation of the skin. The unnatural condition found on the chest of the patient is undoubtedly due to counter-irritation applied by the physician. I can hardly believe that a person can have scarlet fever without eruption even, as I know some cases do occur, without showing some evidence on the fifteenth or sixteenth day of desquamation. The young man has a skin disease which has lasted some four weeks, and is far from being well at the present time, but I could learn nothing that would lead me to believe that he has, or had, scarlet fever. I regret very much that I am obliged to make this statement, but I can only do so and perform my official duties; but I regret still more that I was unable to see you before visiting these cases. We are all liable to err at times, and while I am one of those who believe that if there is doubt in regard to contagious diseases the public should be given the benefit of the doubt, and that we should quarantine in doubtful cases, in these cases I cannot entertain any doubt.

I trust this matter may be satisfactorily settled, and that you will accept my apology for visiting the cases without seeing you under the circumstances.

## REPORT OF OUTBREAK OF SCARLET FEVER AT EVANSVILLE.

Janesville, June 12, 1900.

This morning I was called to Evansville to determine whether several cases there were scarlet fever or not. There had been a dispute among the physicians, some quarantining them, others not. I saw two cases that were undoubtedly scarlet fever; the others I was not able to determine, but as all the cases have been similar I ordered them quarantined until recovery and disinfection.

(Signed) Q. O. SUTHERLAND, M. D.

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*Secretary's Report.*

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REPORT OF INSPECTION OF OUTBREAK OF TYPHOID FEVER AT  
MARINETTE.

During the month of June, 1899, your Secretary was requested by Dr. T. J. Redelings, Commissioner of Health of Marinette, to visit that city and meet with the Mayor and Common Council and the health officer and consider the situation relative to the outbreak of typhoid fever which has existed in that city during the past few months.

It appears that the water supply of Marinette is taken from the bay, an intake pipe extending out into the bay 200 feet from the shore. The drainage of Marinette goes into the river which empties into the bay about three-quarters of a mile from the intake pipe. The amount of sewage of Marinette is large, as they have a very complete system of sewers, nearly all of the streets in the city being supplied. Many of the inhabitants use for drinking purposes water from artesian wells which exist in several places, the artesian wells being 700 to 800 feet deep, but the water is so hard that it cannot be used with advantage for culinary purposes. In the city of Marinette since the first of March (prior to that time, under the management of a former health officer, no records were kept) to the date of my visit there have been 150 cases of typhoid fever with 14 deaths. In the city of Menominee, just over the river in Michigan, where very similar conditions exist as to sewage disposal and water supply, during the same period, they have had 300 cases with some 40 deaths. At the time of my visit there seemed to be a lull in the activity of the disease. Marinette has a population of about 16,000 inhabitants, and Menominee about 15,000, and both cities are growing. Prior to my visit I had analyzed the water on two occasions, one sample taken from the mouth of the intake pipe, one from the tap in the city, one from mouth of river half way from sewer

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*Secretary's Report.*

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to intake, and one from the outfall of the sewer. We found the colon bacillus in all of the samples, hence we believe there is no question but what the disease was produced by the public drinking water. The health officer also informs me that he has not been able to trace a single case to any family that did not use the public water supply. The health officer of Menominee, Michigan, and several physicians from that city, were also present at the meeting with the Mayor and Common Council of Marinette, and we devoted an evening to addressing the Mayor and Common Council relative to the importance of taking some steps to correct the evil and producing a wholesome water supply for the city. Under the circumstances we urged the sand filtration system, similar to that existing in Lawrence, Massachusetts, and in Ashland, this state, as I believe this is the best system at the present time that is in operation. The Mayor and Council were very much impressed with the arguments produced and I believe that they will very soon adopt some measures to provide a wholesome supply of water for the citizens. Already the authorities at Menominee, Michigan, have sent a committee to Ashland to investigate the plan there, and as the two cities are so closely connected in all probability if one adopts a system the other will do the same.

REPORT OF INSPECTION OF OUTBREAK OF TYPHOID FEVER AT  
NEW LISBON, WISCONSIN.

On September 21, 1899, I received a request from Dr. E. H. Townsend, health officer of New Lisbon, to come to that place and investigate an outbreak of typhoid fever which was prevailing there. On September the 24th, Sunday night, I left Milwaukee, arriving at New Lisbon at 1:20 Monday morning, and together with the health officer visited several families which were affected with typhoid fever. I learned that in the month of June a man, living in a house near the head

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*Secretary's Report.*

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of an open drain which runs through the city of New Lisbon, was taken with typhoid fever and died from perforation of the bowels. It was reported to me that no precautions were taken as to disinfection of stools, etc., but that they were thrown out onto the ground and a heavy rain following soon after washed them into this open drain which passed down through the city. Soon after this typhoid fever appeared in one of the houses near by, the occupants taking their water from a well which was probably contaminated by the open drain. The disease broke out in nine houses located along the course of this drain through the entire city. The wells are shallow and easily infected by surface drainage. In these nine houses there were at the time of my visit sixteen cases of fever; many of them were complicated with malarial symptoms, but all were decided cases of typhoid. The cause of this outbreak was very plain. There were but few cases in the city, located in other parts, which had recently occurred, and might have been infected from water taken from some of these wells, so far as known. Advice was given to condemn these wells and provide the houses with new wells. Also to disinfect all discharges from the patients and make as thorough work of disinfection as possible. Advice was also given for all citizens to boil their water, taken from wells, during the present season. Typhoid fever pamphlets were circulated freely, and the board of health urged to take active measures in seeing that private vaults were cleaned and disinfected, as there were many in the city that were in a very unsanitary condition. Complaint had been made by the health officer that another physician in the city was not inclined to report his cases of typhoid. I visited this physician and urged him to make reports, and he promised me that he would, and do everything he could to aid the board of health in the performance of their duties.



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*Secretary's Report.*

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## REPORT ON ANTHRAX AT THE CITY OF MEDFORD.

Early in the year 1900, the question arose whether it would be advisable to issue circulars, either through the Agricultural Experiment Station or the State Board of Health, giving information as to the prevention and control of this disease. The Attorney General was appealed to for an opinion, and rendered the following:

"I am in receipt of your favor of yesterday, inclosing a circular which it is proposed that the Agricultural Experiment Station shall issue in reference to the prevention of the spread of anthrax in cattle, and asking for an opinion as to whether the Agricultural Experiment Station would be liable in damages for issuing circulars containing the statement that the source of the disease is a certain tannery in the city of Medford. You ask whether it would be better for the State Board of Health to issue the circulars and if they would be liable to respond in damages if they should do so.

In reply I would say that I have given the matter careful attention, and I think that either the Agricultural Experiment Station or your Board might issue these circulars, provided that you can establish the fact that the disease originated and has spread from this tannery. In a suit for libel or slander, the truth of the alleged libelous matter can always be pleaded in justification.

I think the State Board of Health would also be protected upon another ground, provided the circulars were restricted to giving the information to the parties along the bank of the river, whose cattle would be liable to become infected by this disease. As this disease is one which is liable to affect human beings as well as cattle, it is made your duty to give information in reference to the means of stamping out the disease. This would come under the head of a privileged communication and, if sued, the State Board could allege, not only the truth of the statement, but also that the Board was privileged to make the statement. There might be some doubt, however, as to whether you could plead your privilege, if the circular were distributed broadcast throughout the state.

I also think that your Board might, even though it were

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*Secretary's Report.*

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not able to prove that the disease originated from this tannery, show in mitigation of damages, that the circular was sent out in good faith, and that you had reason to believe and did believe that the facts stated in the circular were true.

(Signed) E. R. HICKS,  
*Attorney General.*

The following communications were received relative to anthrax at this place:

Medford, April 5, 1900.

Two horses died here today on the same farm, where last year three horses died from anthrax. I have sent some pathological specimens to Prof. H. L. Russell for a bacteriological examination. Will you please be so kind as to authorize Prof. Russell to make such examination? By so doing you will greatly oblige,

(Signed) EUGENE LESAGE,  
*Health Officer.*

The report on these samples is as follows:

Samples of tissue from two horses supposed to have died from anthrax were received from Dr. Eugene LeSage of Medford, Wis. They have been examined and the following report is herewith submitted:

*Horse No. 1.*—Blood and cellular tissue cover glass preparations made direct from blood stained with methylene blue show numerous large square-ended bacilli that appear like anthrax. These organisms retain Gram's stain. Isolation experiments were made and from the blood numerous colonies were separated, which upon further cultivation proved to be *Bacillus anthracis*.

*Horse No. 2.*—Spleen and blood sent. This tissue and blood were examined in a similar way, and from the same the anthrax organism isolated in considerable numbers.

I have no doubt but that both of the animals died of anthrax, as this pathogenic organism would not be found in any tissue from any other disease.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Secretary's Report.*

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REPORT OF INSPECTION AND OPINION GIVEN RELATIVE TO  
DRAINAGE AT NORTH MILWAUKEE.

In compliance with your request that I visit North Milwaukee to make an investigation and advise with you as to the best system of drainage for that locality, I have the honor to submit the following:

After due consideration and careful study, I find that there are several methods which can be adopted. The question of which one is the most practicable will have to be settled very largely by yourself and the authorities of North Milwaukee. If North Milwaukee proposes to put in a public water supply it should by all means have a public drainage system, and the drainage outlet could perhaps be carried to the city limits and connected with the city sewerage system on Western Avenue, but I am not sure that this could be legally done or that it would be practicable from an engineering standpoint. It may be possible some time in the future to have an intercepting system of sewers running along the banks of the Milwaukee river and find an outlet in that way.

Another way of disposing of the sewage, and probably the best method for this locality, if the house sewage and storm water are to be united in the same sewer, would be by the broad irrigation system, or the intermittent filtration system.

This would require a survey and work of an engineer to lay out the beds for irrigation or filtration, and disposition of the sewage by such a system.

Taking under consideration the condition of scattered houses in North Milwaukee, I am of the opinion that the most practicable method at the present time to adopt would be to put in a system of pipe sewers for the purpose of surface drainage and for relieving the cellars of water. The outlet of this system of sewers could be in a low marshy locality where the contents could soak into the ground, or into the Milwaukee river. The construction of this system of sewers should be regulated by an ordinance adopted by the authorities, and its provisions must be strictly enforced, and nothing but the water which accumulates in the cellars and the surface or storm water shall be allowed to flow into these sewers.

For those who desire to put in water closets and bath-room

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*Secretary's Report.*

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conveniences in their houses I would recommend the building of cess-pools for each house, and these cess-pools should be constructed and managed under the provisions of an ordinance which should also be strictly enforced; they should be built water tight and should be made double, the contents of the first being precipitated, and the fluid running into the second, and they should be cleaned by a scavenger system as often as necessary. They should also be properly trapped and ventilated.

If these cess-pools are properly constructed and properly managed under police regulations, they will prove to be very satisfactory and very much less expensive than a general public sewerage system in this locality.

A system of sewers for surface or storm water disposal is absolutely demanded from a sanitary standpoint, and should be put in as early as possible. I would, however, suggest that in constructing such a system of sewers it be kept in mind that they may possibly be used in the future as a general sewerage system, conveying the house sewage as well as the surface or storm water, when the outlet can be changed and the sewage disposed of in some satisfactory and sanitary manner, as by the irrigation, intermittent filtration, or some other method, should the growth of the village be such as to warrant the adoption of such a system.

I shall be pleased to advise you further at any time relating to this matter, and as to details, etc., should you require further counsel.

**REPORT ON SEWAGE DISPOSAL IN WAUWATOSA, MILWAUKEE CO.**

On the 20th of September, 1899, the undersigned received a communication from the County Clerk of Milwaukee County, enclosing the following resolution:

“Resolved, that the county clerk be and he is hereby instructed to invite the members of the State Board of Health to visit and inspect the present sewerage plant, located on the grounds of the county farm in the town of Wauwatosa, at their earliest convenience. Said board when they have inspected the plant shall notify this county board if in their opinion the same complies with the requirements of the laws of Wisconsin.”

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*Secretary's Report.*

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In compliance with the said resolution the undersigned have the honor to submit the following report:

In the first place, chapter 371, laws of 1897, having expired by limitation, we are unable to find any special law which applies to the question at issue. The only provision of law that may apply is section 3180, Wisconsin Statutes for 1898, a portion of which provides that "The circuit court shall have jurisdiction of actions to recover damages for, and to abate private nuisances, or a public nuisance from which any person suffers a private or special injury peculiar to himself, so far as necessary to protect the rights of such person, and to grant injunctions to prevent the same." It will appear by this section of law that the question of nuisance is the province of the circuit courts and not of the State Board of Health.

The undersigned, however, visited Wauwatosa on the 23rd inst., and inspected the plant and a portion of the river, and we beg leave to submit that there has been so much sewage drained into the Menominee river for a great many years that the river bed consists of a mass of debris which when the warm weather comes on creates a decidedly unsanitary condition. The material undergoes fermentation, foul gases are generated, and a stench arises which is exceedingly offensive and dangerous to the public health. In the judgment of the undersigned this unsanitary condition in the bed of the river will continue for many years, should all drainage into the same be prevented, and that the proper remedy to apply would be to thoroughly clean out the bottom of the river and remove all of this filth which has accumulated in the years past during which the sewage of the county institutions, and of other institutions along the course of the river, has been deposited.

We found the sewage plant at the county institution in operation and about 200,000 gallons of sewage passing through it every twenty-four hours, and while the larger portion of the solid constituents is precipitated, the effluent which passes into the river is, in our judgment, unsatisfactory from a sanitary standpoint.

We are, therefore, of the opinion that there are two causes at work creating the unsanitary condition in which the Menominee river is in at the present time:

First, the accumulation of sewage and debris which has been

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*Secretary's Report.*

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drained into the river for a period of years, and is still being continued by some institutions along the course of the river.

Second, that the sewage plant at the county institutions is not producing an effluent which is strictly sanitary and satisfactory.

Respectfully submitted.

(Signed) SOLON MARKS, M. D.,

*President.*

U. O. B. WINGATE, M. D.,

*Secretary.*

*State Board of Health Executive Committee.*

REPORT OF INSPECTION OF NUISANCE AT THIENSVILLE.

On June 27th, 1900, I received a letter from Dr. H. A. Albers, health officer of Thiensville, stating that there was a bad nuisance at that place in the the nature of decomposing and rotten grain, that had been shipped there, and he wished me to visit the place in an official capacity, and advise with the local authorities relative to what could be done to abate the same.

On arriving at Thiensville I found that certain parties were shipping brewers' grain, which was in a rotten and decomposed condition, from Chicago and Milwaukee, in quantities of from five to six carloads at a time. A portion of the worst of this material was spread upon land and used as a fertilizer; the rest was fed to milch cows and used for this purpose by some 30 or 40 milk dealers who were furnishing milk to the city of Milwaukee. The stench of this grain was such as to be smelt all over the village and produced a most nauseous and sickening effect. I learned the names of the milkmen who were thus feeding this material and reported the whole situation to the Commissioner of Health of Milwaukee, urging him to take steps to prevent the use of milk coming from such a source.

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*Secretary's Report.*

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REPORT ON NUISANCE CREATED BY THE STOCK YARDS OF THE  
C., M. & ST. P. R. R. CO., AT BANGOR, WIS.

The following communications relative to this nuisance were received:

"Bangor, July 25, 1900.

"Enclosed please find petition of residents of this village in regard to stock yards of C., M. & St. P. Ry. Co. at this place. The local board of health has repeatedly requested the Company to clean and keep in a sanitary condition these yards but to no avail, and their orders have been unnoticed."

"To the State Board of Health of the State of Wisconsin:

"The undersigned officers and members of the Calvinistic Methodist Church of Bangor, Wisconsin, and residents and tax payers of said village of Bangor, in La Crosse County, Wisconsin, hereby respectfully call your attention to a matter that has been in years past and still continues to be a nuisance and a menace to the physical comfort and health of the said church society and the residents of said village. The live-stock shipping yards of the Chicago, Milwaukee and St. Paul Railway Company in said village are situated in almost the center of the village, and in close proximity to the house of worship of said church society and also to numerous private residences, and the continual unclean condition of said stock yards and the nauseating odors have for many years made it unbearable at times for the said church society to hold services and for residents to inhabit their dwellings. The yards are used not only for shipping purposes, but also dealers are in the habit of keeping live-stock in said yards for long periods of time in order to fatten them for market. The said yards are not kept in sanitary condition and the request of residents and the village authorities for better and more sanitary regulations of the yards on the part of the railroad company has met with no response. We respectfully request the action of your body for the abatement of the nuisance and the removal of the yards to another location."

This petition was signed by twenty-six citizens.

On receipt of this communication the matter was referred to Dr. Solon Marks, of this Board, and chief surgeon of the C., M. & St. P. Ry. Co., and on August 7th the following communication was received:

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*Secretary's Report.*

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"Referring to the attached, I am advised that the yards have been placed in a satisfactory condition and that Mr. Davis says a change in the location is not now necessary.

(Signed) H. R. WILLIAMS,  
*General Manager.*

REPORT OF INVESTIGATION OF A DRAINAGE NUISANCE AT  
NEENAH.

On August 5th, 1900, I was telephoned by Dr. C. O. Hansen, the health officer of Neenah, requesting me to come there and consult with the local authorities relative to a drainage nuisance. I went to Neenah on the evening of the 6th, and the next morning met the local board of health together with the city attorney, mayor, and aldermen, and inspected the alleged nuisance. It consisted of a ditch which had been used as an open sewer prior to putting in the sewerage system of the city. The ditch was some over one-half mile long, running under the sidewalks, and through and over personal property, in one instance running directly under a house which was occupied. The ditch was constructed of stone, about three feet deep and three feet wide, and contained all of the drainage including water closets and sinks of the house. It was covered with loose planks, and these in many places were open, and it could be seen that in places there were from three to six inches of liquid sewage which in places was stagnant and could not run through, as one of the parties who drained into it had filled up the ditch on his ground. The ditch emptied into the lake. The contents of the ditch were exceedingly offensive, and it constituted a most dangerous nuisance. Much difficulty had existed for a number of years relative to what to do with this ditch. The city attorney had advised not to close it up for fear that the city would want it for sewage purposes, but on inspecting the sewerage system I decided that



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*Secretary's Report.*

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his argument was entirely without foundation, as the sewerage system was wholly sufficient to drain that part of the city properly. Moreover, a part of the ditch was now closed up, and could not be used for ditch purposes; there were but two houses along the course of this ditch that were not provided with sewer connection, and a sewer was soon to be put in the street where these houses existed so that there was no actual need of the ditch.

I advised that an order be issued upon all of the owners of the property along the course of the ditch to cease draining into it or throwing into it any material, and to fill it up with clean dry earth. This the city attorney agreed to, and drafted papers, in my presence, for this purpose, and I have no doubt the nuisance will be thus abated.

REPORT AND OPINION GIVEN CONCERNING DRAINAGE AT  
PLYMOUTH, WIS.

August 16, 1900.

In compliance with your request, and as a result of my visit and inspection, I hereby submit for your consideration my findings concerning the sanitary condition of the city of Plymouth.

First, I pronounce the mill pond and stream, existing between the two mills in the city of Plymouth, and also that portion of the drain that is uncovered and drains into said stream or pond, dangerous nuisances which should be condemned, and abated as soon as possible. As I understand it, the nuisance created by the pond or stream is on private property, owned by one citizen or citizens of Plymouth. Section 1414, Wisconsin statutes for 1898, provides as follows:

“Whenever any nuisance, source of filth, or cause of sickness shall be found on private property, the board of health shall order the owner or occupant thereof to remove the same, at his own expense, within twenty-four hours, and if he shall

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*Secretary's Report.*

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refuse or neglect to comply, he shall forfeit not less than five nor more than fifty dollars; and said board may cause the same to be removed, and may recover all expenses incurred thereby from the said owner or occupant, or from such other person as shall have caused or permitted the same."

Of course it is not expected that the abatement of a nuisance of this kind can be completed in twenty-four hours, but if the owner commences operations to that end, with good intentions, within the aforesaid twenty-four hours, and continues the same, he is complying with the requirements of law. The most practical way to abate the nuisance in the stream or pond is to raise the dams at the mills and allow a free flow of water through the entire water-way. The amount of debris that has been deposited in the bed of the stream for a number of years will undoubtedly be largely removed by flushing, and after a season or two it will probably be in a very satisfactory condition. Moreover, the channel will be narrowed and the banks of the stream can be filled in with dry, clean earth if it becomes necessary. In regard to the drain that empties into the pond or stream, that portion of it which is uncovered, should be covered at once, but in doing this I would recommend that this entire drain be converted into a sewer, as its location is admirable for a main sewer of your city. This could empty into the pond or stream where it now does, or its course could be changed on any street it might seem desirable. As this water-way empties into the Sheboygan river, and the Sheboygan river into the lake, it is believed that if all the dams can be removed the flow of water will be sufficient to drain the city of Plymouth. Undoubtedly this is true with the present size of the city.

Second, should it be decided to put in a public water supply, a system of sewers by all means should follow, as it will be impossible to avoid nuisances and dangers to the public health if a public water supply is not followed by a system of sewerage.

Third, if at any time the city should become so large that this system of sewerage will be insufficient for carrying away the sewage it would be a comparatively easy matter to lay a sewer at the bottom of the river, and conduct the sewage outside of the city limits onto a sewage farm or sewage plant, constructed according to modern systems, either by the irrigation or by some other modern system.

Fourth, if the city decides to put in a public water supply,

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*Secretary's Report.*

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and does not provide sewers, an ordinance should be passed and rigidly enforced, requiring all householders who have water closets and sinks in their houses to provide their premises with a cess-pool, and these cess-pools should be properly located, and made absolutely water tight, properly trapped and ventilated, and cleaned out as often as necessary.

Fifth, if the city continues using wells, as it is now doing, an ordinance should be passed requiring all privy vaults to be constructed water tight and for them to be cleaned as often as is necessary. The continuance of privy vaults, constructed without being water tight, is a dangerous menace to the public health, or will be soon in your city, if you use your wells for a water supply as now obtains. Sooner or later the wells will become contaminated and sickness will be the result.

Finally, there are a number of cities in the country, not any larger than Plymouth, that are provided with public water supply and sewerage system. One which I recall, and by its location it may be of advantage to refer to it in this connection, namely, Santa Rosa, Cal. In 1880 it had a population of 3,016, in 1890, 5,220. In 1873 it built its public water works, and a few streets were sewerred and drained into the Santa Rosa creek near the city limits. Complaints very soon arose of the pollution of the creek, followed by a law suit, and this led the city to purchase 18 or 19 acres of land about two miles from the city to which an outlet sewer was built. The farm is leased to parties who take care of the sewage for rental, using it for gardening purposes. Some such plan as this may be advisable for your city if it were found impossible to use the river for draining the city.

The importance of taking these steps to place your city in a proper sanitary condition need not be dwelt upon by me. No city can afford not to have good sanitary arrangements. Desirable people will not locate in a young, growing city without modern sanitary conveniences, and among the first of these are a pure water supply and system of drainage. So from an economical standpoint, as well as for the public health, it becomes highly important that these sanitary conditions be provided, otherwise persons seeking homes will pass on to those places where they can have these conveniences and where the health of their families can be protected and preserved.

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*Secretary's Report.*

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## REPORT OF INSPECTION OF DRAINAGE NUISANCE AT WAUKESHA.

Two days prior to August 28th, 1900, your Secretary was telephoned to come to the Industrial School at Waukesha as soon as convenient, and make an inspection of the drainage of that institution. I visited the school on August 28th, and found that a city sewer ran under the corner of the school building of the institution, or rather the school building was built over the sewer; that the sewer had become broken, and the sewage was leaching into the soil under the school building, causing a very offensive stench in the basement and in the school room directly above, constituting what I believed to be a very dangerous nuisance. The health officer of the city of Waukesha had inspected the same and condemned it, and reported it to the city council, but thus far no action has been taken.

The accompanying letter was written and forwarded to the mayor and common council of the city of Waukesha; also a copy was sent to the superintendent of the school.

I have the honor to submit the following communication for your consideration. In compliance with a request of the Superintendent of the State Industrial School for Boys, an institution located in the city of Waukesha, I have, on the 28th inst., inspected the sanitary condition of the school building, located on the grounds of said institution, and the city sewer which is laid under the N. W. corner of said school building, and find the said sewer in a defective condition; that the sewage leaches into the ground under the basement, polluting the soil, and creating a bad stench in the basement and school room directly above, constituting an offensive and dangerous nuisance which should be abated at the earliest possible moment.

It becomes my duty, therefore, to, and I hereby do, declare the said sewer in its present condition, a dangerous nuisance, and condemn the same, and I recommend that your honorable body take such measures forthwith as may be necessary to abate the said nuisance. In performing the work necessary to abate the said nuisance, I recommend that the course of said sewer

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*Secretary's Report.*

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be changed and that it be laid outside of said school building, and not under the same, for the practice of laying a sewer under a building should not be advocated when possible to prevent the same.

I have the honor to suggest that the city sewer which runs through the grounds of said Industrial School, from time to time, emits offensive and deleterious air and gases from the man-holes located on the said grounds, and thereby creates a bad nuisance, and I recommend that the course of this sewer be changed, and removed from said grounds. If the removal of the sewer is not practicable at the present time, I strongly recommend that a larger quantity of water be supplied to the end that this sewer can be thoroughly and frequently flushed thereby abating the nuisance as much as possible by such means.

From inspections of this sewer in the past, and from what I can learn from my recent inspection, I am of the opinion that the entire removal of the sewer from the grounds of the institution will be the most satisfactory and truly sanitary solution of the problem.

REPORT OF INSPECTION AND WORK DONE AT NEW RICHMOND,  
RESULTING FROM THE CYCLONE OF JUNE 12, 1899.

The following telegram was received June 28, 1899:

“DR. U. O. B. WINGATE: The situation here is complicated very seriously for want of funds. Be sure to get the whole State Board of Health to come.”

(Signed.) F. W. EPLEY.

The following reply was made:

MILWAUKEE, June 29, 1899.

DR. F. W. EPLEY,  
New Richmond, Wis.

DEAR DOCTOR: YOUR telegram received. The Board has adjourned but it will be impossible to reach New Richmond before Monday next. Our intention now is to leave here Sunday night. I have urged all members of the Board to come and some of them have promised to do so if possible. Dr. Marks

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*Secretary's Report.*


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will undoubtedly accompany me. We will, therefore, be there Monday morning. I am in communication with the Attorney General relative to the fund and I think without much doubt we shall be able to use a portion of it.

(Signed.) U. O. B. WINGATE, M. D.,  
*Secretary.*

MILWAUKEE, June 27, 1899.

HON. E. R. HICKS,  
*Attorney General,*  
 Madison, Wis.

DEAR SIR: I am requested by the Governor and also by the State Board of Health, which is in session today, to ask your opinion concerning chapter 24, laws of 1899.

It appears that the recent sad calamity at New Richmond has created a condition that is liable to be a menace to the public health in that city, and the citizens are in danger of an epidemic of fever, etc., unless some steps are taken at once to clean up the place. The State Board of Health has been called upon to look after the matter, and it is very necessary that we use a portion of the Contingent Fund set aside by chapter 24, above referred to. Now the Board and the Governor are both anxious to use some of this fund if possible, and hence I am requested to ask your opinion as to whether we can make use of this fund for the purpose named; if possible I trust you may render a favorable reply. Hoping for an early reply, as we are to take such action as we can at once, I am,

Very truly yours,  
 (Signed.) U. O. B. WINGATE, M. D.

June 28, 1899.

U. O. B. WINGATE, Esq.,  
*Secy. State Board of Health,*  
 Milwaukee, Wis.

DEAR SIR: I have yours of the 27th inst., requesting my opinion concerning chapter 24, laws of 1899. You state that the recent calamity at New Richmond has created a condition there that is liable to be a menace to the public health in that city, and the citizens are in danger of an epidemic of fevers, etc., and that the State Board of Health has been called upon to remedy the difficulty, and asking if you for that purpose can

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*Secretary's Report.*

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use any portion of the contingent fund set aside by chapter 24 of the laws of 1899.

In reply I beg to say in my opinion the chapter referred to created the fund to be used for just such a contingency as this. The title of the act particularly declares that the contingent fund is to be used for the prevention of Asiatic cholera and *other dangerous and contagious diseases.*

Section 1 of the act provides that this fund, by and with the advice and consent of the Governor, may be drawn upon by the Board and used by it in such a manner as may seem necessary (to the Board) to prevent the introduction or spread of Asiatic cholera or *other contagious diseases in the state.*

Section 2, however, in declaring when the members of the Board may receive compensation, specifies only one instance, namely, when engaged in work for the prevention or control of Asiatic cholera. But this failure to enumerate, in this section only, all the instances contemplated by this statute must not be taken as an indication of the legislative intent. In other words, the intention of the legislature is plainly expressed in other places in the act, and must not be narrowed down by construction simply because the act fails to re-enumerate all the instances every time they are referred to.

In the construction of statutes of this character, the intention of the legislature should prevail, if that can be ascertained, and all parts of the statute should be considered in arriving at this intention. The context must be consulted where there is any doubt as to the meaning of any particular portion, and the construction placed upon the statute should be such as to give force and effect to all of its provisions. Furthermore, this is a statute which is entitled to the most liberal construction possible that is consistent with the language used. It is a contingent fund intended to apply in cases of exigency. Clearly the present case is such an one, and I have no doubt that the intention of the legislature and the language used in the act both render the statute applicable to this case.

I therefore advise you that with the advice and consent of the Governor, you are not only at liberty, but it is your duty to use so much of the appropriation as is provided for in that act as is necessary in your judgment to prevent the introduction or spread of any dangerous or contagious disease, resulting from the calamity that has befallen New Richmond. In such use of that appropriation I further advise you that under sec-

*Secretary's Report.*

tion 2 of that act any member of the State Board of Health, except the Secretary, may be compensated for his services in such action, as provided in the statute.

Yours very truly,

E. R. HICKS,  
*Attorney General.*

MILWAUKEE, Wis., June 29, 1899.

HON. E. R. HICKS,  
*Attorney General,*  
Madison, Wis.

DEAR SIR: Please accept my thanks for your very kind opinion relative to the Contingent Fund. It is a source of great satisfaction to the Board that it will be able to use a portion of it for the suffering people at New Richmond. It certainly would seem that if ever a contingent fund is to be used it should be employed at such a time.

I will now have to ask you just how I shall proceed to draw that money. The way we now draw our fund is by bills endorsed by the President and Secretary and presented to the Secretary of State, filing a duplicate copy of all bills with him, and he gives us an order on the State Treasury. Shall we present our bills for this service in the same way only having them countersigned by the Governor? Advice in regard to this matter will greatly oblige.

(Signed.) U. O. B. WINGATE, M. D.,  
*Secretary.*

July 1, 1899.

DR. U. O. B. WINGATE,  
Milwaukee, Wis.

DEAR SIR: Replying to yours of recent date in which you ask how members of the State Board of Health shall proceed to draw money from the state treasury for services rendered pursuant to chapter 24 of the laws of 1899 in endeavoring to check the spread of contagious diseases at New Richmond, Wis., resulting from the unsanitary condition brought about by the recent disaster there, I beg to reply: All bills incurred for such services and expenditures should be, as is the custom with your Board, endorsed by your President and Secretary and presented to the Secretary of State, filing duplicate copies.



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*Secretary's Report.*

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You should also state in such bills so rendered that they are pursuant to chapter 24 of the laws of 1899 so that the Secretary of State may audit them to charge them to the particular appropriation provided for in that bill. When so audited by him his warrant will issue as in all ordinary cases. You will see from this that the procedure is no different from the balance of the work except that your bill should contain the statement that it is incurred under that particular statute.

Yours truly,

E. R. HICKS,  
*Attorney General.*

On Sunday, July 2, 1899, your Secretary, together with Dr. Marks, the President, and Dr. Wm. F. Whyte, left for New Richmond, arriving there Monday morning, Dr. J. H. McNeel joining us on the way. Soon after our arrival Dr. Q. O. Sutherland arrived and together we made an inspection of the devastation caused by the tornado at this place. Dr. G. W. Harrison had previously visited the place a day or two before our visit.

The sanitary conditions are such as to require, in our judgment, active efforts in order to prevent the prevalence of epidemic fevers and dysentery. Two cases of dysentery were reported to us as existing at the time of our visit. There were many small dead animals lying around under the debris which required to be removed, also the privy vaults with their covers torn away were left in a deplorable condition and needed early attention. In the afternoon a meeting was held with the Commissioner of Health and Common Council of the city and it was decided to provide means from the Contingent Fund, under chapter 24, laws of 1899, to relieve the present existing unsanitary conditions. It was advised that the contents of the vaults be treated with lime, then covered with earth, and the vaults abolished entirely, and the dry earth closet system be adopted for the entire city where the tornado had prevailed.

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*Secretary's Report.*

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Such material as could be burned on the ground was advised to be burned and that which could not was to be removed and disinfectants used as might be deemed necessary. The whole work was left in charge of the Commissioner of Health and he was advised to have appointed several sanitary police to patrol the city and see that the sanitary regulations were rigidly carried out. It is believed that a little money spent in this way may save the citizens of this unfortunate locality from a serious outbreak of disease. The majority of the buildings of the entire city being destroyed, except a few located on the outskirts, left an unsanitary condition which required early and active attention.

During the time that this service was being performed in removing the debris and rendering the location in as sanitary a condition as possible, the Secretary and President of the Board visited New Richmond and inspected the work that was being done. It was found that dead animal material was mixed in the debris to a very large extent, and that much of this material had to be removed which required extensive labor, but finally the work was completed and an outbreak of disease prevented, the sanitary condition remaining very good, with the exception of a few cases of dysentery which occurred during the season. The expenses incurred will be found in connection with the expense account of the Board.

REPORT OF DELEGATE TO CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA, MAY 23-24, 1899.

Your delegate desires to respectfully submit the following report of his attendance upon the Annual Conference of State and Provincial Boards of Health of North America, held at Richmond, Virginia, May 23-24, 1899:

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*Secretary's Report.*

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The Board was represented by your delegate and Dr. G. W. Harrison of Ashland. The Conference was called to order by the President, Dr. Felix Formento of the Louisiana Board of Health, New Orleans, Tuesday morning, May 23d, at the Jefferson Hotel, with representatives from twenty-one states, and the Province of Quebec. There were about thirty members present. The papers were of much interest and were thoroughly discussed. Sessions were held Tuesday forenoon, afternoon, and evening, and also Wednesday forenoon and afternoon.

Among the more important subjects discussed was that of diphtheria and its management. Also smallpox and vaccination were considered from many points of view. It would seem unnecessary to go into a detailed account of the discussions of this meeting as the proceedings will be printed in due time and a copy will be furnished each member of the Board.

The state of Wisconsin was honored by having your delegate elected President for the ensuing year. The place and time of next meeting has not yet been decided upon. At the close of the meeting on Wednesday the State Board of Health of Virginia very hospitably gave the members of the Conference a carriage drive around the city of Richmond, and on Thursday gave the Conference an excursion to Newport News, where they visited the navy yard and witnessed the building of several war vessels, and from there to Old Point Comfort, where a lunch was given, the party returning to Richmond Thursday evening.

On the whole the meeting was a most interesting and profitable one, and everything passed off very satisfactorily to the benefit of all present.

REPORT OF DELEGATE TO THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA, 1900.

Your delegate attended the Conference of State and Provincial Boards of Health of North America held at Atlantic City on June 1-2, 1900, and he had the honor of presiding as President during the session. Dr. J. H. McNeel, also of this Board, attended the Conference with me. There was a good attendance, and representatives from as far as California were present.

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*Secretary's Report.*

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The Conference was called together by your delegate, the President, at ten o'clock, Friday, June 1, and the welcoming address was given by his Honor, Mayor F. P. Story of Atlantic City. It was responded to by Dr. Charles O. Probst of Ohio, Vice President. The Secretary then made his report, which was followed by the report of the Treasurer which showed the Conference to be in good financial standing. A very unfortunate circumstance was contained in the Secretary's report in regard to the proceedings of the former meeting. It appears that the stenographer of that meeting, soon after arriving home, was attacked with general paresis, and his notes were in such shape that he could neither read them himself nor could any other stenographer, and he has gradually failed until he is a helpless invalid, and as a result of this the entire proceedings of the previous meeting were lost, and that accounts for their not being published and sent to the different Boards of Health.

The work of the present Conference consisted principally in a symposium on School Hygiene. Very valuable papers were read and discussed concerning all phases of school hygiene, which were not only interesting but practical, and it is believed that the published report of this meeting, which will be circulated, as soon as it can be published, to all Boards of Health, will be one of great interest and value for reference.

Among other subjects considered was the advisability of the state to provide vaccine virus, by Dr. Swarts of Rhode Island, and also relative to giving a controlling voice to Boards of Health as regards plans for Public Water Supplies and Sewerage Systems, by Dr. C. O. Probst of Ohio, also a very able discussion on the subject "If the Plague Should Pass the Quarantine and Enter Your State," by Dr. Fulton of Maryland and Dr. McCutchen of New Orleans, and also a very valuable and practical paper entitled, "What Are the Most Practical and

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*Secretary's Report.*

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Successful Ways of Educating the Public in the Principles and Practice of Sanitary Science?" by Prof. Lindsley, Secretary of the State Board of Health of Connecticut. This was discussed very freely by Dr. Cooper of Delaware, Dr. Swarts of Rhode Island, Dr. Mitchell of New Jersey, and Dr. Holton of Vermont. The President's address was delivered on the evening of the first day to a large, and apparently interested, audience. Following that was an illustrated lecture, illustrated by stereopticon views, on the production of vaccine virus, by a representative of the T. K. Mulford Company of Philadelphia.

At the close of the afternoon session, on Saturday, June 2, the following list of officers were elected for the ensuing year: Dr. C. O. Probst of Ohio, President; Dr. Henry Mitchell of New Jersey, Vice President; Dr. G. T. Swarts of Rhode Island, Secretary; Dr. J. A. Egan of Illinois, Treasurer.

The next place of meeting will be where the American Public Health Association meets in 1901. Probably the Conference will meet two days prior to the meeting of that Association.

#### CAR SANITATION.

The committee appointed by the Board during the past two years have carefully considered the matter of car sanitation, and after various correspondence and consideration it was decided to send the following suggestions to the three principal railroads operating in the state, namely, the C., M. & St. P. Ry., the C. & N. W. Ry., and the Wisconsin Central Ry., the same to be sent to the Chief Surgeons of the various roads;

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*Secretary's Report.*

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*Suggestions by the Wisconsin State Board of Health to the Railroad Companies Operating in the State.*

Car Construction: The interior should meet the following requirements:

(a) Easily cleaned and kept clean.

(b) Equable warming, perfect ventilation, with exclusion of smoke and dust.

NOTE: It is impossible to perfectly attain these conditions but they should be approached as near as possible.

To secure (a): Material composing interior should be hard, susceptible of polish, and unabsorbent; no channeled or bead-work or carving below the windows; window ledges rounded; windows to have curtains of smooth, unabsorbent, flexible material; inside slided blinds not allowed as they have so many corners and cracks where dirt may accumulate and cannot be properly cleaned. Seats to be supported on the aisle by a plain round iron post, painted with enamel paint; arm rests to be round or oval, without upholstering; plush not to be used for upholstering if any other more generally suitable material can be had, which is doubtful; bottoms and backs removable, and the backs upholstered only in the center, the edges being hard varnished wood, or if completely upholstered, to be supplied with clean linen covers.

Closets to be floored with metallicized or filled wood, wainscoting the same, the latter being perfectly plain and smooth; hopper should be of plain porcelain cone delivering all dejecta into a drawer containing dry absorbent earth and supplied with a mechanical device which would by pulling a chain sprinkle dry absorbent earth upon discharges; the drawers being emptied at terminals, cleaned, and two inches of absorbent earth placed in the same before restoring to its place in the car.

The heating pipes should be covered with an enameled metal shield to prevent expectoration and dirt from falling upon them. No carpets or matting should be permitted in the aisle but a strip of plain rubber floor covering is allowable.

Smoking cars and sleeping coaches should contain cuspidors which are constantly partially filled with moist sawdust, or some material similar to sawdust which will contain moisture for some length of time. This material should be moistened with a two per cent. solution of carbolic acid or a 1-1000 of bi-

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*Secretary's Report.*

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chloride of mercury. The cuspidors should be emptied and cleaned at the end of each run.

To secure (b): To properly heat and ventilate a car is understood to be a difficult problem, but efforts should be made to improve upon the present condition as much as possible. First as to the principles of heating and ventilating: Heated air rises, and not until the upper air of an apartment is warm is it possible to warm the lower part. Vitiating air accumulates mostly below the breathing line. By the present method of warming and ventilating the warm air rises and is largely drawn out through the ventilators in the deck, thus wasting heat, and leaving the lower vitiating air in the car to be swept out by drafts from the open door, or by reversal currents (drafts) through the deck ventilators.

Drinking Water: The drinking water should either be distilled or sterilized or taken from springs where frequent analyses have shown that the water is pure. Water tanks could be of metal and arranged as at present, but plain porcelain tanks in full view would be far better. The ice used in these tanks should be carefully inspected and only taken from a pure source, and employes who handle this ice should be made to wash it thoroughly in sterilized water before being placed into the tanks, and the employes themselves should be cleanly and be kept under careful supervision. The drinking glass should be smooth and round-bottomed. Small paper cups might be furnished by the newsboy at a very small expense and destroyed after being used.

Dining Cars: The principles (a) and (b) should be strictly followed in dining car construction, and in addition the kitchen interior, the dish lockers and food boxes should be constructed with special effort to avoid cracks and corners. Refrigerators and food boxes should be lined with enamel, all wooden racks being carefully avoided.

Cleaning and Disinfection: Coaches should have a porter constantly cleaning and wiping en route. Upon arrival at terminals, seats and back of seats should be removed and dusted by the air blast; floor should be scrubbed, and all wood below the top of the windows washed and wiped. Seats and seat backs then replaced, and the whole interior sprayed with a five per cent. solution of formaldehyde by means of a spraying apparatus carried on the back like a fire extinguisher. The cars should then be closed and allowed to remain so for at least three hours and then re-wiped with clean sterile cloths. \*

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*Secretary's Report.*

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## TEXT BOOKS ON PHYSIOLOGY AND HYGIENE FOR THE PUBLIC SCHOOLS.

According to the records of the State Board of Health the following works have been approved by the Board for use in the public schools:

In June, 1885, "Primer of Physiology and Hygiene," by W. T. Smith; "The Human Body and Its Health," by W. T. Smith; "How We Live," by Jas. Johannot and Eugene Barton; "The Human Body Elementary Course," by H. Newell Martin and Hetty C. Martin; "Anatomy, Physiology and Hygiene," by Jerome Walker.

In November, 1895, "Our Bodies and How We Live," by A. F. Blaisdall; "The Eclectic Physiology," by Eli F. Brown.

In December, 1890, the three numbers of "Physiology and Hygiene," by John C. Hutchinson.

The following letter was addressed to the Werner School Book Company at Chicago in February, 1900, by your Secretary:

"Replying to your esteemed favor of the 12th inst., I have the honor to state that we have examined a large number of text books treating of the subject of physiology and hygiene, and to be used in our public schools, and thus far we have found none that are so complete in our judgment, and so scientific and correct, as those of Dr. Richard J. Dungliſon. The law of this state provides:

"The text books used in giving instruction in physiology and hygiene, with special reference to the effects of stimulants and narcotics upon the human system, shall have the general approval of the State Superintendent and the State Board of Health."

"We feel that the subject is one of very great importance and that the scientific truth regarding this subject should be taught. Unfortunately overzealous persons have apparently influenced some writers of text books to that extent that they are entirely misleading to the pupil, but the works of Prof. Dungliſon are free from all prejudice and present scientific facts as they are recognized by the great majority of the medical pro-



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*Secretary's Report.*

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fession at the present day. The great danger of alcoholic stimulants and narcotics cannot be overestimated if the truth is told, nevertheless they are agents which are of great value as medicine and in the sciences, and these facts should be taught as well as their dangers, if we are going to say anything about the subject at all in these works. Prof. Dunglison places these agents among the dangerous class, which should be only used as medicines, where they can be carefully observed by skilful physicians. We most heartily approve of these works, and believe that they present the subject in a clear, intelligent, scientific, and truthful manner."

In March, 1900, the following letter was addressed to The American Book Company of Chicago by your Secretary:

"At a meeting of this Board held in June, 1898, the 'Applied Physiology Advanced,' by Frank Overton, M. D., was examined, and at that time the book failed to receive the approval of the Board in accordance with the provisions of the Wisconsin statutes.

"Since that time the entire set of Dr. Overton's works, namely, his 'Advanced,' 'Intermediate,' and 'Primary' Physiologies has been more carefully examined by the Board, and while we cannot fully agree with a few of the conclusions of the author regarding alcohol and other narcotics, we consider such differences of opinion as we entertain of minor importance when considered together with many of the other admirable features of the books, and we, therefore, hereby approve this set of works for use in the public schools of the state of Wisconsin."

The Board has had under review several other works which have been forwarded to them for consideration, but thus far the aforesaid works are the only text books that have been approved by the Board up to the present date.

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*Secretary's Report.*

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## BACTERIOLOGICAL EXAMINATIONS, ETC.

The following examinations were made during the past two years for the different places named, arranged alphabetically according to counties:

## BARRON COUNTY.

*Cumberland:* In October, 1899, a mounted slide was sent from Cumberland, supposed to contain the diphtheria bacilli, and was submitted to us for an opinion. It was reported to have been taken from a child in a family where a case of diphtheria had been about a week previous. It was grown on the Loeffler Blood Serum and the culture tube obtained from Messrs. Parke, Davis & Co.

We found the Klebs-Loeffler bacilli present.

*Rice Lake:* In May, 1900, three specimens were received from Rice Lake, concerning which there was a difference of opinion, some claiming it to be diphtheria, others not.

These specimens were referred to Dr. Bennett of the City Health Department, who reported no Klebs-Loeffler bacilli present.

## CLARK COUNTY.

*Greenwood:* In March, 1900, a specimen was sent, taken from the throat of a suspected case of diphtheria, and a culture tube was inoculated and placed in the incubator for 24 hours.

No Klebs-Loeffler bacilli were found.

## GREEN LAKE COUNTY.

*Berlin:* A specimen of pork was received from Berlin. It was reported that two persons eating of the same were made very ill with vomiting and purging. Later the father and mother of the same parties partook of portions of the same meat after being cooked and were both taken ill the same way. This meat was reported to have been cooked before eating.

The sample was examined by Mr. A. S. Mitchell, State Chemist, who reports: "I have examined the specimen mi-

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*Secretary's Report.*

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microscopically but find no trichina present. I am unable to undertake toxicological work, as it is not within the line of the work of this department."

## KEWAUNEE COUNTY.

*Kewaunee:* In November, 1898, a sample of blood was sent from Kewaunee, taken from a suspected case of typhoid fever. The specimen was referred to Prof. Russell of Madison, the consulting bacteriologist, and the following report was received:

"I have to report that the result of the Widal test in sample of blood sent from Kewaunee was negative."

## LAFAYETTE COUNTY.

*Darlington:* In April, 1900, a specimen from a suspected case of diphtheria was received from Darlington, Wis. Blood serum culture tubes were inoculated and placed in an incubator for 24 hours and examined.

No Klebs-Loeffler bacilli were found.

## MONROE COUNTY.

*Warrens:* In March, 1900, specimen from suspected case of diphtheria was received from Warrens. It was reported that the specimen was taken from a throat which was free from exudation, and that the case was very light. A blood serum culture tube was inoculated and placed in the incubator for 24 hours and examined.

No Klebs-Loeffler bacilli were found.

## OUTAGAMIE COUNTY.

*Kaukauna:* In February, 1899, a specimen of pork was received from Kaukauna, supposed to be diseased. This was referred to the State Chemist who reports as follows:

"I regret to say there is no bacteriologist connected with this department. I have examined the meat microscopically and find it to be abnormal and diseased. It does not seem to contain any of the parasites but I am unable to tell whether or not it is tuberculous."

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*Secretary's Report.*

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The same was referred to Prof. Russell, consulting bacteriologist, who reports as follows:

"The sample of suspected pork from Kaukauna, Wis., has been received and examined. The information concerning the same was so meager that I wrote to the Board for fuller instructions. Examination of tissues was made for specific disease bacteria, such as tuberculosis, but with negative results. The tissue seemed to be in a state of decomposition, and a microscopic examination showed innumerable putrefying bacteria. Since this examination further information has been received which leads me to think that the meat was simply spoiled prematurely through the manner in which it was handled. The tearing of the flesh due to the biting of other animals would permit infection below the surface and thus hasten premature decomposition. Such meat should not be used for human food except under the control of the health officer. The unaffected parts may possibly be all right but the sample submitted was unwholesome."

*South Kaukauna:* In October, 1899, two samples of milk were received from South Kaukauna, from which typhoid fever was suspected to have been contracted. These samples were referred to Prof. Russell, consulting bacteriologist, who reports as follows:

"It is practically impossible to isolate the typhoid organism from milk owing to the fact that the lactic acid bacteria that are so abundant in milk are able to grow in many of the media that are peculiarly fitted for development of typhoid. It is therefore necessary to test same in an indirect manner.

"Cultures were made in fermentation tubes in glucose bouillon, in Parietti's culture medium, in lactose agar and gelatin and a number of organisms separated from these sources inoculated into other media. In general the milk appears to be good. It contained about 29,100 bacteria per cc, a much lower number than is generally found in milk. None of the organisms isolated gave any suspicious typhoid reactions; in fact even the colon bacillus was not found in same.

"I am unable to find anything in the milk that would confirm the suspicions of the health officer that it was the cause of typhoid fever."

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*Secretary's Report.*

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## PRICE COUNTY.

*Prentice:* In October, 1899, a specimen of pork was received from the lumber camp near Prentice which was suspected as being unfit for food. Examination failed to find anything deleterious in the specimen.

## RACINE COUNTY.

*Raymond:* In April, 1900, two specimens taken from suspected cases of diphtheria were received from Raymond, Wis. Number 1 was from the throat of a patient sick five days in which antitoxin had been used. Number 2 was taken four days after the first. Antitoxin used three days before. Blood serum culture tubes were inoculated and placed in the incubator for 24 hours.

No Klebs-Loeffler bacilli were found.

## ST. CROIX COUNTY.

*Hudson:* In April, 1899, sample of mutton, taken from the market at Hudson, supposed to be unfit for food, was received. This was referred to the State Chemist who reports as follows:

"The meat is certainly diseased. It contained many little cysts, the size of a small pea, containing yellow and purulent matter. I was unable to discover the cause of these cysts."

## TAYLOR COUNTY.

*Medford:* In November, 1899, samples of tissues from two horses, supposed to have died from anthrax, were received from Medford, and were submitted to Prof. Russell, consulting bacteriologist, who reported the presence of the bacilli anthracis in both cases.

## TREMPEALEAU COUNTY.

*Whitehall:* In November, 1898, the following letter was received from a physician at Whitehall, Wis.:

"A patient of mine died this week, I think of tuberculosis or carcinoma of the intestines. It was a strange case to the doctors around here, and I would like to know more of it if

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*Secretary's Report.*

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there is any way to do so. I saved some of the diseased parts, and if there is a way to tell, or a place where I can send it I will do it. What I saved I put into 20 per cent. alcohol."

These specimens were submitted to Prof. W. S. Miller, consulting pathologist, at the State University, who reports as follows:

"Shortly after receiving your letter from a physician at Whitehall, Wis., a bottle was sent me said to contain portions of the growth which he wished examined. It had been, as you know, preserved in 20 per cent. alcohol, and it has taken a long time to get the material in shape to section, and then it took a still longer time to find a part where the tissue was sufficiently well preserved to show the histological structure. The specimen sent is one of adenoma, and I should judge had its origin in the intestines, or at least in the alimentary tract. I could find no part where the cells were sufficiently well preserved to pass positive judgment. I should judge the case had been somewhat of a puzzle to the physician, but the sections show clearly the nature of the growth and remove all mystery."

## WAUKESHA COUNTY.

*Hartland:* In January, 1900, a specimen was received from Hartland, Wis., taken from a suspected case of diphtheria, but no Klebs-Loeffler bacilli were found.

In March, 1900, another specimen was received from Hartland, Wis., taken from a suspected case of diphtheria. A careful examination failed to show the presence of the Klebs-Loeffler bacilli.

In April, 1900, another specimen was received from Hartland, Wis., taken from the case of suspected diphtheria, but no Klebs-Loeffler bacilli were found.

## WASHBURN COUNTY.

*Shell Lake:* In November, 1899, a specimen was received from Shell Lake, taken from a suspected case of diphtheria. Culture tube was inoculated and placed in the incubator for 24 hours, but no Klebs-Loeffler bacilli were found. Another sample was received from Shell Lake in February, 1900; blood serum culture tubes were inoculated and placed in the incubator for 24 hours, and the Klebs-Loeffler bacilli were found.

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*Secretary's Report.*

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## WAUSHARA COUNTY.

*Wild Rose:* In March, 1900, specimen from suspected case of diphtheria was received from Wild Rose, Wis. Blood serum culture tube was inoculated with specimen and placed in the incubator for 24 hours, but no Klebs-Loeffler bacilli were found.

## WASHINGTON COUNTY.

*Richfield:* In October, 1899, a slide mounted with supposed diphtheria bacilli was sent from Richfield, Wis., for verification. The Klebs-Loeffler bacilli were present.

## WOOD COUNTY.

*Milladore:* In February, 1900, a specimen of suspected diphtheria was received from Milladore, Wis. Culture tubes were inoculated and placed in the incubator for 24 hours, and the Klebs-Loeffler bacilli were found.

## LIBRARY.

The following list includes the accessions since acknowledgments made in the Seventeenth Report:

*Australia:* Report of the Board of Public Health for the years 1896 and 1897 to the Minister of Health of Victoria, Australia. (Pamphlet.)

*American Public Health Association:* Public Health Reports and Papers, Vol. XXIV, 1898.

*Canada:* Report of Director-General of Public Health, Canada, 1900. Department of Agriculture. (Pamphlet.) F. Montizambert, M. D., Director-General.

*Connecticut:* Report of the State Board of Health of Connecticut for 1898 (7 copies). C. A. Lindsley, M. D., Secretary.

The Twenty-Second Annual Report of the State Board of Health for the State of Connecticut with the Registration Report for 1898 relating to Births, Marriages, Deaths, and Divorces, 1899. C. A. Lindsley, M. D., Secretary.

*District of Columbia:* Report of the Commissioners of the

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*Secretary's Report.*

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District of Columbia for the year ending June 30, 1898. Vol. III. Health Department. Wm. C. Woodward, M. D., H. O.

*England:* Twenty-Seventh Annual Report of the Local Government Board, with Supplement containing Report of Medical Officer of Health, London, England.

Twenty-Eighth Annual Report of the Local Government Board. 1898-99. Supplement containing the Report of the Medical Officer, for 1898-99. London, England.

*Florida:* Tenth Annual Report of the State Board of Health of Florida, February, 1899. Jos. Y. Porter, M. D., State Health Officer.

The Eleventh Annual Report of the State Board of Health of Florida, March 15, 1900. Jos. Y. Porter, M. D., Secretary.

*Funeral Directors' Association:* Report of the Eighteenth Annual Convention of the National Funeral Directors' Association, 1899.

*Illinois:* Appendix to the Twentieth Annual Report of the Illinois State Board of Health, 1897. J. A. Egan, M. D., Secretary.

Principal Poisonous Plants in the United States. Compliments of the Illinois State Board of Health.

The Illinois State Board of Health. Advance Notes of the Sanitary Investigations of the Illinois River and its Tributaries. J. A. Egan, M. D., Secretary.

*Ireland:* The Thirty-Sixth Detailed Annual Report of the Registrar-General (Ireland), Containing a general abstract of the number of Marriages, Births, and Deaths registered in Ireland during the year 1899.

*Kansas:* Biennial Report of the Kansas Live Stock Sanitary Commission, 1897-1898. Taylor Riddle, Secretary.

Fourteenth Annual Report of the State Board of Health of Kansas, 1898. H. Z. Gill, M. D., Secretary.

Fifteenth Annual Report of the State Board of Health of Kansas, from January 1 to December 31, 1899. (Two copies.) W. B. Swan, M. D., Secretary.

*Louisiana:* The Sanitary Code of the Louisiana State Board of Health for 1899. Edmund Souchon, President.

The Biennial Report of the Louisiana State Board of Health, 1898-1899. Dr. G. Farrar Patton, Secretary.

*Maryland:* Annual Report of the State Board of Health of Maryland for the year ending December 31, 1898.



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*Secretary's Report.*

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Annual Report of the State Board of Health of Maryland for the year ending December 31, 1899.

The Laws of Maryland relating to Public Health in force June 1, 1899, with some decisions of the Court of Appeals of Maryland. John S. Fulton, M. D., Secretary.

*Maine:* Tenth Report of the State Board of Health of Maine for the two years ending December 31, 1897. A. G. Young, M. D., Secretary.

Fifth Annual Report on Births, Marriages, and Divorces and Deaths, in the State of Maine, 1896. A. G. Young, M. D., Registrar.

*Massachusetts:* Twenty-Ninth Annual Report of the State Board of Health of Massachusetts, 1897. S. W. Abbott, M. D., Secretary.

Monograph on the Past and Present Condition of Public Hygiene and State Medicine in the United States. S. W. Abbott, M. D., Secretary.

*Michigan:* Thirteenth Annual Report relating to the Registry and Return of Births, Marriages, and Deaths in Michigan for the year 1896. Hon. Washington Gardner, Secretary of State.

Twenty-Fifth Annual Report of the State Board of Health of the State of Michigan, for the fiscal year ending June 30, 1897. H. B. Baker, M. D., Secretary.

Also, Proceedings and Addresses at a Sanitary Convention held at Traverse City, Michigan, August 22-23, 1899.

Twenty-Sixth Annual Report of the Secretary of the State Board of Health of the State of Michigan for the fiscal year ending June 30, 1898. Also, Leaflet on the Advice for the Restriction and Prevention of Meningitis. H. B. Baker, M. D., Secretary.

*Minnesota:* Sixteenth Report (8th biennial) of the State Board of Health and Vital Statistics of Minnesota, 1895-1896.

*Mexico:* Casa de Orates Division de Mejeses.

Memoria de la Casa de Orates Seccion de Hombres.

Morimiento de la Casa de Orates de Santiago en el Segundo Semestre de 1898.

Morimiento de la Casa de Orates de Santiago en el Primer Semestre de 1898.

*Nova Scotia:* The Seventh Annual Report of the Provincial Board of Health of Nova Scotia for the year 1899. A. P. Reid, M. D., Secretary.

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*Secretary's Report.*

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*New Hampshire:* Fifteenth Report (first biennial) relating to the Registration and Return of Births, Marriages, Divorces, and Deaths in New Hampshire for the years 1894 and 1895. I. A. Watson, M. D., Secretary.

Sixteenth Report (second biennial) relating to the Registration and Return of Births, Marriages, Divorces, and Deaths in New Hampshire for the years 1896 and 1897. I. A. Watson, M. D., Secretary.

Fifteenth Report (second biennial) of the State Board of Health of the state of New Hampshire for the two years ending November 1, 1898. (Seven copies.)

Seventh Report (second biennial) of the Board of Commissioners of Lunacy for the State of New Hampshire for the two fiscal years ending September 30, 1898. I. A. Watson, M. D., Secretary.

*New Jersey:* Twenty-Second Annual Report of the Board of Health of the State of New Jersey, and Report of the Bureau of Vital Statistics, 1898. Henry Mitchell, M. D., Secretary.

Circular 94. June, 1899. Board of Health of the State of New Jersey. Communicable Diseases of Animals.

Twenty-Third Annual Report of the State Board of Health of the State of New Jersey, and Report of the Bureau of Vital Statistics, for 1899. Henry Mitchell, M. D., Secretary.

*New York:* Eighteenth Annual Report of the State Board of Health of New York for 1898, with Maps. Baxter T. Smelzer, Secretary.

Nineteenth Annual Report of the State Board of Health of the State of New York, 1898, with Appendices. Baxter T. Smelzer, M. D., Secretary.

*North Carolina:* Seventh Biennial Report of the North Carolina Board of Health, 1897-1898. Richard H. Lewis, M. D., Secretary.

*New Brunswick:* Twelfth Annual Report of the Provincial Board of Health of New Brunswick, for the year ending October 31, 1898. Geo. E. Coulthard, M. D., Secretary.

Thirteenth Annual Report of the Provincial Board of Health of New Brunswick, for the year ending October 31, 1899. Geo. E. Coulthard, M. D., Secretary.

*Oklahoma:* Fourth Biennial Report of the Territorial Superintendent of Public Health to the Governor and Fifth Legislative Assembly of the Territory of Oklahoma for the years

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*Secretary's Report.*

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1897-1898. L. Haynes Buxton, Superintendent of Public Health.

*Ontario:* The Seventeenth Annual Report of the Provincial Board of Health of Ontario, 1898. P. H. Bryce, M. D., Secretary.

The Thirteenth Annual Meeting of the Association of Executive Health Officers of Ontario held at the City of Ottawa on the 26th of September, 1898. P. H. Bryce, M. D., Secretary.

The Fourteenth Annual Meeting of the Association of Executive Health Officers of Ontario held at the City of London, 13th and 14th of September, 1899. P. H. Bryce, M. D., Secretary.

Report relating to the Registration of Births, Marriages and Deaths in the Province of Ontario for the year ending December 31, 1898. J. R. Stratton, Registrar-General.

The Eighteenth Annual Report of the Provincial Board of Health of Ontario for the year 1899. P. H. Bryce, M. D., Secretary.

Report relating to the Registration of Births, Marriages, and Deaths in the Province of Ontario for the year ending December 31, 1897.

*Ohio:* The Thirteenth Annual Report of the State Board of Health of the State of Ohio, for the year ending October 31, 1898. (Seven copies.) C. O. Probst, M. D., Secretary.

*Pennsylvania:* Report of the Pennsylvania State Board of Health, Vol. I, 1897. (Seven copies.) Benj. Lee, M. D., Secretary.

Report of the Pennsylvania State Board of Health, Vol. II, 1897. (Seven copies.) Benj. Lee, M. D., Secretary.

Fifteenth Annual Report of the Secretary of the State Board of Health of Pennsylvania, with the minutes of the Board, 1898. Benj. Lee, M. D., Secretary.

State Board of Health. Fifth Annual Meeting of the Associated Health Authorities of Pennsylvania. Extracted from the Fourteenth Annual Report, 1898.

The Fifteenth Annual Report of the Secretary of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania and Minutes of the Board, 1899, and List of Local Boards and Bureaus of Health of Pennsylvania for 1900. Benj. Lee, M. D., Secretary.

Fifth Annual Report of the Pennsylvania Department of Agriculture, Part 1, 1899. John Hamilton, Secretary.

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*Secretary's Report.*


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*Quebec:* Fourth Annual Report of the Board of Health of the Province of Quebec for the year ending June 30, 1898. (Two copies.)

Fifth Annual Report of the Board of Health of the Province of Quebec, for the year ending June 30th, 1899. (Two copies.) Elzear Pellitier, M. D., Secretary.

*Rhode Island:* Nineteenth Annual Report of the State Board of Health of the State of Rhode Island, for the year ending December 31, 1896, and including the report upon the Registration of Births, Marriages, and Deaths in 1895. Gardner T. Swarts, M. D., Secretary.

Forty-Fifth Report relating to the Registry and Return of Births, Marriages and Deaths, and of Divorce in the State of Rhode Island, for the year ending December 31, 1897. Gardner T. Swarts, M. D., Secretary.

Twentieth Annual Report of the State Board of Health of Rhode Island for the year ending December 31, 1897, and including the report upon the registration of Births, Marriages, and Deaths in 1896.

*United States:* Index Catalogue of the Library of the Surgeon General's Office, U. S. Army, Authors and Subjects. Second Series, Vol. III.

Report of the Surgeon General of the Army to the Secretary of War for the fiscal year ended June 30, 1898. Gen. Geo. M. Sternberg.

Water Supply and Irrigation Papers on the United States Geological Survey, Number 22. (Pamphlet.)

Weekly Public Health Reports, Vol. 13, Surgeon General United States Marine Hospital Service.

Index Catalogue of the Library of the Surgeon General of the United States Army, Second Series, Vol. IV., 1899.

Report of the Surgeon General of the Army to the Secretary of War for the fiscal year ending June 30, 1899.

Annual Report of the Supervising Surgeon General of the Marine Hospital Service of the United States for the fiscal year 1898. Walter Wyman, M. D., Supervising Surgeon General.

Train Inspection in Yellow Fever Epidemics. Surgeon H. R. Carter, Treasury Department, M. H. S.

Shipment of Merchandise from a Town Infected with Yellow Fever, by Surgeon H. R. Carter, U. S. M. H. S.

Mortality Statistics in the United States for the year end-

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*Secretary's Report.*

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ing December 31, 1897, from the Annual Report of the Marine Hospital Service, 1898.

Report of Commission of Medical Officers, detailed by authority of the President to investigate the cause of Yellow Fever, 1899.

Yellow Fever: Its Nature, Diagnosis, Treatment, Prophylaxis, and Quarantine Regulations relating thereto, by Officers of the United States Marine Hospital Service, from the Annual Report of the Marine Hospital Service, 1898, together with an Abstract of the Report of the Medical Officers, detached as a Commission to investigate the cause of Yellow Fever, 1899. By the Supervising Surgeon General.

Twenty copies of the Pamphlet on "Bubonic Plague." Walter Wyman, M. D.

Index Catalogue of the Library of the Surgeon General of the U. S. Army. Second Series, Vol. 5.

Fourteenth Annual Report of the Bureau of Animal Industry, 1897, Department of Agriculture. D. E. Salmon, Chief of Bureau.

Year Book of the U. S. Department of Agriculture, 1898. James Wilson, Secretary.

U. S. Department of Agriculture, Fifteenth Annual Report of the Bureau of Animal Industry for the 1898. D. E. Salmon, Chief.

Year Book of the Department of Agriculture, 1899.

U. S. Department of Agriculture, Bulletin No. 25, Rabies.

College Department including Universities, Professional and Technical Schools, Bulletin 8, January, 1900. Professional Education in the United States. Prepared by H. L. Taylor, Ph. D., under direction of James Russell Parsons, Jr., M. A.

College Department including Universities, Professional and Technical Schools, Bulletin 5, October, 1899. Professional Education in the United States.

*Wisconsin:* Annual Report of the State Horticultural Society for the year 1898. A. J. Phillips, Secretary.

Twenty-Sixth Annual Report of the Wisconsin Dairymen's Association, 1898. G. M. Burchard, Secretary.

Fifteenth Annual Report of the Agricultural Experiment Station of the University of Wisconsin for the year ending June 30, 1898. John Johnston, President Board of Regents.

Transactions of the Wisconsin State Horticultural Society, 1899. A. J. Phillips, Secretary. (Ten copies.)

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*Secretary's Report.*

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The Sixteenth Annual Report of the Agricultural Experiment Station of the University of Wisconsin, for the year ending June 30, 1897. (Ten copies.)

Bulletin Wisconsin Survey, No. IV. Building and Ornamental Stones of Wisconsin. Also Pamphlets on the Geography of the Region about Devil's Lake and the Dalles of the Wisconsin, A Contribution to the Geology of the Pre-Cambrian Igneous Rocks of the Fox River Valley, Wisconsin, and the Preliminary Report of the Copper-Bearing rocks of Douglas County, Wis. Compliments of E. A. Birge.

Twenty-Eighth Annual Report of the Wisconsin Dairymen's Association, held at Watertown, Wis., Feb. 13-16, 1900.

*Cities:* Annual Report of the Board of Health of the City and County of San Francisco, for the fiscal year ending June 30, 1898. A. P. O'Brien, M. D., H. O.

Forty-Seventh Annual Report of the Trustees of the Public Library of the City of Boston, Mass., 1898.

Sixteenth Annual Report of the Superintendent of Health, of the city of Providence, for the year ending December 31, 1898.

Forty-Fourth Annual Report upon the Births, Marriages, and Deaths in the City of Providence, R. I., for the year 1898. By Charles V. Chapin, M. D.

Report on the Investigations into the Purification of the Ohio River Water for the Improved Water Supply of the City of Cincinnati, Ohio, 1899. By Mr. Aug. Herrmann, et. al.

Report of the Commissioner of Health of Milwaukee (twenty-third annual report of the department). April, 1900.

*Secretary's Report.*

EXPENSES.

The Expenses incurred by the Board for the past two years are as follows:

For the year ending September 30, 1899, as shown by vouchers numbered from 2,334 to 2,478 inclusive, which have been audited, approved, and paid, amount to a total of \$5,136.06 and are classified as follows:

Official Expenses of Members .....	\$553 12
Postage and Telegraphy .....	458 27
Paper and Stationery .....	120 38
Printing and Binding .....	201 25
Books and Instruments .....	165 07
Telephone .....	56 75
Water Analysis .....	178 00
Salaries—Secretary .....	2,499 96
Salaries—Clerical .....	720 00
Miscellaneous, including express and various inspections .....	183 26
<b>Total .....</b>	<b>\$5,136 06.</b>

For the year ending September 30, 1900, as shown by vouchers numbered from 2,479 to 2,633 inclusive, which have been audited, approved, and paid, amount to a total of \$5,376.42, and are classified as follows:

Official Expenses of Members .....	\$758 23
Postage and Telegraphy .....	456 16
Paper and Stationery .....	111 77
Printing and Binding .....	221 30
Books and Instruments .....	145 95
Telephone .....	72 15
Water Analysis .....	223 58
Salaries—Secretary .....	2,499 96
Salaries—Clerical .....	720 00
Miscellaneous, including express and various inspections .....	167 32
<b>Total .....</b>	<b>\$5,376 42</b>

**Total expenses for the biennial period are \$10,512.48.**

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*Secretary's Report.*


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The expenses for work done at New Richmond, Wis., paid out of the Contingent Fund, are as follows:

Paid to New Richmond authorities . . . . .	\$3,862 27
Expenses of the board for inspections, etc. . . . .	220 01

Total . . . . .	\$4,082 28
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POISONING BY A HEMLOCK SPECIES.

On May 21, 1900, your Secretary received a letter from Dr. M. R. Wilkinson of Oconomowoc, in which he reported a fatal case of poisoning occurring in the town of Summit, about four miles south of the city of Oconomowoc, on May 19th, from eating a tuber found growing wild in a marshy or low piece of land lying about a pond.

Much pains have been taken to collect samples of this plant, and a very careful examination has been made of them, which is submitted herewith. This plant is described in the Medical Jurisprudence of Witthaus & Becker, Vol. IV, as follows:

“The Water Hemlock, or Cowbane, which grows abundantly in the north of Continental Europe, and less commonly in the south of England, has been frequently confounded with Conium, which it resembles in appearance, but from which it differs markedly in its physiological action. Early medical writers refer frequently to poisoning caused by the root having been eaten in mistake for parsnip, or celery root, or by the herb having been used in the kitchen in mistake for parsley, and one of the earliest toxicological monographs is that of Wepfer relating to the poisoning of eight children by the root. Similar accidents are of occasional occurrence at the present time, although they are rarely reported in medical literature. In the United States similar accidental poisoning by the closely related *Cicuta Maculatta* is not of unusual occurrence.”

In a book published by the Illinois State Board of Health, entitled “Principal Poisonous Plants in the United States,” published in 1899, we find the following:



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*Secretary's Report.*

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"American water hemlock, wild hemlock, spotted hemlock, spotted parsley, snakeweed, beaver poison, muskrat weed, cowbane, spotted cowbane, children's bane, death of man.

"Description and Habitat: A smooth, erect perennial, three to eight feet high, with a rigid hollow stem, numerous branches, finely dissected leaves, white flowers, and a cluster of spindle-shaped roots, which vary in length from one and a half to three inches, and are very characteristic of the plant. It grows commonly in swamps and damp soil throughout the Atlantic States westward to Louisiana, Iowa, and Minnesota; much less commonly northwestward through Nebraska to the Rocky Mountains and to New Mexico.

"Poisonous Property: Its poisonous property resides in an aromatic, oily fluid, which is found chiefly in the root but also in the stem, seeds and leaves. Its true chemical nature is not exactly known but it is highly probable that it contains the alkaloid conine and the bitter principle cicutoxin, the latter of which is characteristic of the European water hemlock (*Cicuta virosa*). Both are powerful poisons, but the latter is more violent and produces most of the symptoms characteristic of the plant. The American water hemlock is one of the most poisonous plants native to the United States. Its victims include both man and animals. The underground parts are the most poisonous, and are especially dangerous because they are often washed and frozen out of the soil and thus exposed to view. Children mistake them for horse radish, parsnips, artichokes, sweet cicely, and other edible roots. Cattle sometimes eat the tubers, and in marshes they are poisoned by drinking water contaminated by the juice of the roots which have been crushed by being trampled upon. No estimate can be made of the amount of damage done to live stock, but it is very considerable. The human victims average a considerable number per annum. In the state of New Jersey alone, as earlier mentioned, two quadruple cases were reported during the spring of 1896, which resulted in the death of two individuals.

"Symptoms and Antidote: The prominent symptoms are vomiting, colicky pains, staggering, unconsciousness, and frightful convulsions ending in death. As no chemical antidote is known, the treatment must consist in the thorough cleansing of the digestive tract, and in combating the symptoms as they arise by the use of chloroform, chloral, and such medicines as

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*Secretary's Report.*

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are indicated during the progress of the malady. Herbiferous animals generally die from the effects of a sufficient dose but they are sometimes saved by the administration of two or three daily doses of melted lard."

It will be observed that this is a very poisonous plant, and the report on the examination which follows will be of considerable interest and value, it is trusted, to the people of Wisconsin. There is no doubt but what this plant exists in many places in the state, and it should be carefully looked after and destroyed, as far as possible, as it is exceedingly dangerous to both the human family and animals that may possibly obtain it and make use of it for food. The cuts representing the plant, given herewith, are very exact and reliable, and it is believed that the results of the chemical examination will give some information not hitherto known concerning the nature of this plant.

Respectfully submitted,

U. O. B. WINGATE, M. D.,

Secretary.

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*Poisoning by a Hemlock Species.*

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## CONTRIBUTION TO A NEARER KNOWLEDGE OF A HEMLOCK SPECIES.

BY FR. AND L. F. RUSCHHAUPT, OF MILWAUKEE.

A fatal case of poisoning that occurred in the town of Summit, near Oconomowoc, in the latter part of May this year, reported by Dr. M. R. Wilkinson of that city to Dr. U. O. B. Wingate of Milwaukee, the secretary of the Wisconsin State Board of Health, gave the writers of this occasion to investigate botanically and chemically the fatal weed with which the accident had occurred.

The case history of the poisoning, as reported by Dr. Wilkinson, was the following: Two children found the plant, growing in a marshy or low piece of land lying about a pond. They pulled up some and, finding that the taste of its tubers was agreeable, ate them. On the way home with their father and brother, who passed by in a boat, one of the children, a boy, aged six years and eight months, instead of standing up as usual, squatted down, as his father expressed it. Home at dinner he was very talkative and ate heartily. Immediately after the meal he complained of feeling very ill and began to vomit and walk as though intoxicated. Dr. Wilkinson was hastily called for, but upon his arrival soon afterwards the boy had already died with convulsive seizures. It was found that the flexor muscles were most affected, the pupils dilated and lips cyanotic.

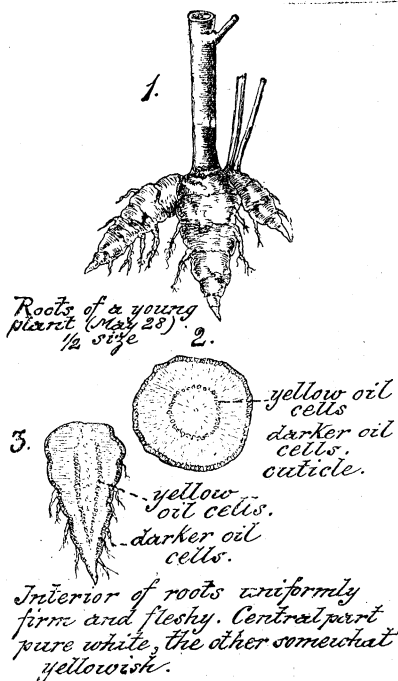
Specimens of the tubers with their stems, the latter about one foot in length, were handed us the end of May, carefully packed to prevent drying. In this fresh condition they were

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*Poisoning by a Hemlock Species.*


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first examined to determine their botanical nature, which for the sake of facilitating the investigation has to precede the purely chemical examination of suspected poisonous plants. We found the plant to belong to the "Hemlocks" and to be a Cicuta variety of them.



The individual tubers were conical in shape,  $1\frac{1}{2}$  to 3 inches in length (No. 1 of the annexed drawings),  $\frac{1}{4}$  to  $1\frac{1}{8}$  inches in diameter in the upper portion and bearing numerous small rootlets. Cross section (2) showed a firm texture of the interior, of which the part near the center was soft and fine white, surrounded by a ring of cells which were strongly filled with a yellow oil, while the outer part was of a somewhat yellowish white and firmer, ending near the exterior or cuticle into a

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*Poisoning by a Hemlock Species.*

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group or ring of cells which were impregnated with an oil that had considerably darkened into a brownish yellow. The oil in both groups of cells darkened soon by an exposure to light and air. Longitudinal section (3) showed the same uniformly firm and fleshy consistency. The stems were hollow, the leaves ovate, somewhat lanceolate, finely notched and of a bright green color.

In general the plant resembled the *Cicuta* variety of hemlocks, while in special it differed from the same by the lack of hollow compartments of the main tuber or rootstock, so peculiar to the European *Cicuta virosa* as well as to the American "water hemlocks," *Cicuta maculata*, *Cicuta vago* (Oregon variety).\* It also lacked entirely all kinds of spots, as well as the light stripes on the surface of the stems, by which the *Cicuta* or water hemlocks are partly characterized. Late in summer, at which time the plant has matured, we found the same to present but very small roots and then also superimposed divisions at the base of the stem for about  $\frac{3}{4}$  of an inch below ground (See No. 4 of the annexed drawings), somewhat similar to those of *Cicuta maculata*,—which are not at all present in spring. At this time the full grown plant had reached a height of about four feet.

Although writers seem to agree that the European *Cicuta virosa* does not contain coneine, there is much-difference as to the statements about its presence in the American varieties of the same. So in the publication of the Illinois State Board of Health, quoted in the foot note below, in which we found under the heading, "*Cicuta maculata*," the expression: "It is highly probable that it contains the alkaloid coneine and the bitter principle, cicutoxin, the latter of which is characteristic of the European water hemlock (*Cicuta virosa*)."<sup>\*</sup> It therefore

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\*See the booklet published by the Illinois State Board of Health, "On the Principal Poisonous Plants of the United States," 1899, pages 40-42.

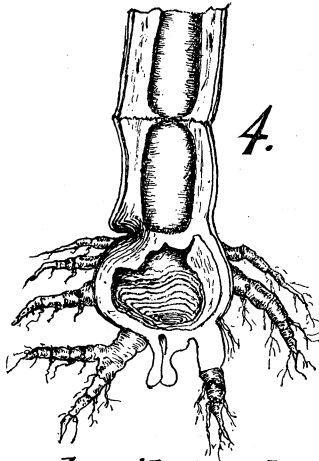
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*Poisoning by a Hemlock Species.*

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was our purpose to examine carefully the specimens handed us in order to arrive also in that respect to the required certainty.

Accordingly distillates and extractions were made of both tubers and seeds, and thereafter also of the stem and leaves. It is noteworthy at first that the seeds after extraction had very noticeably the odor of cymene (cymol), which is stated to be present in *Cicuta virosa* (Strecker, Organic Chemistry, p. 924).



*Longitudinal section  
through base of stem  
and root stock of a full  
grown plant 3/4 size.*

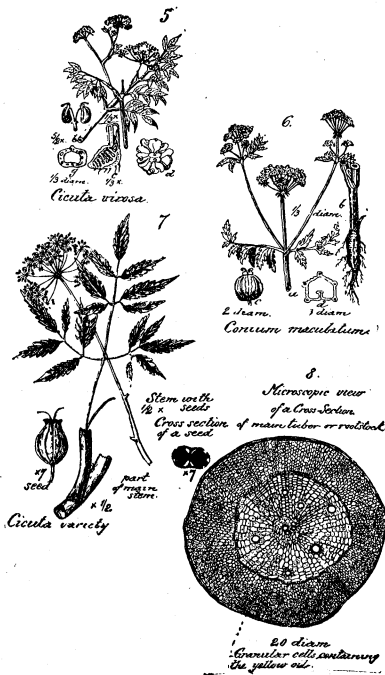
The yellow oily product finally obtained was found to be most soluble in water, less in alcohol and slightly in ether. But as to chemical reactions it not only failed to give the characteristic tests for conicine, but even showed upon analysis to lack utterly any trace of nitrogen. This decidedly shows that no alkaloid whatever existed in either seeds or roots, stem or leaves.

The nitrogen test was in short as follows: First, by heating

*Poisoning by a Hemlock Species.*

the substance with solid caustic potassa, to determine any nitrogen as ammonia; second, by igniting with metallic potassium, to obtain the nitrogen, if present, as potassium cyanide, and ultimately as potassium ferric, ferro cyanide, etc.

Moreover, of the usual precipitants for alkaloids, phosphomolybdic acid was the only one to give a precipitate at all.



A constituent found in the oily substance in considerable amount was glucose or grape sugar, which justifies the belief that the poisonous principle of the plant is a glucoside. This surmise is quite legitimate since the acid which was employed in extracting might have split a glucoside, if present, setting free glucose or grape sugar. This is a point which deserves attention, and an attempt shall be made by us to work it out in greater detail as soon as more material is gathered next

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*Poisoning by a Hemlock Species.*

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spring, when it is hoped that the poisonous principle is present in greater quantity. The fact that phosphomolybdic acid gave a precipitate is only another instance where non-alkaloidal substances are thrown down by it. Well known among these are helleborin, enonymin, and quite a number of others.

The results obtained show that there is anything but an alkaloid which gives this hemlock resp. *Cicuta* variety its toxicity.

In the annexed drawings we offer comparative views of: (5) European *Cicuta virosa*, (6) *Conium maculatum* (the hemlock containing the alkaloid conein), and (7-8) the *Cicuta* species we worked with. That the latter contained a deadly poison was confirmed by repeated animal experiments. A rabbit which was fed with scarcely one-half ounce of the tubers died within less than an hour. Here also weakness of the extremities was soon noticed, the animal lying on its side; later convulsions, with involuntary passage of urine and faeces. The pupils were dilated towards the end.

Our botanical and chemical studies relating to this dangerous weed shall be continued and we shall not fail to report about the results by next opportunity.



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*Anthrax Fever.*

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## OUTBREAK OF ANTHRAX FEVER AT MEDFORD WISCONSIN.

H. L. RUSSELL,

Professor of Bacteriology, University of Wisconsin, and Consulting Bacteriologist to the Wisconsin Board of Health.

Anthrax or splenic fever is a disease which is very common among a number of varieties of domesticated animals; man is likewise susceptible to this disease, although the mortality in the human being is not nearly as great. This disease is endemic in many portions of the world and has become especially so in such portions of Europe as France, Austria and South Germany. The disease has made its appearance in various portions of the United States, but in the main has been sporadic in its occurrence, although in certain regions, as in portions of Mississippi and Delaware, the continued recurrence of the disease practically shows that it has become more or less endemic.

During the past season there has occurred an extensive outbreak of this disease in this state, and inasmuch as it is very seldom met with in this commonwealth, it has been deemed advisable to record the conditions surrounding this instance.

During July and August, 1899, an outbreak occurred among the stock on several farms on the Black River, below Medford, Taylor county, Wis. The matter was not investigated at the time and it was not until November of the same year that the Health Officer of the town, Dr. Eugene Le Sage, sent samples of tissue from a horse that had just died on the farm of a man who had previously lost some stock.

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*Anthrax Fever.*

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From the samples (stomach, liver and spleen) a bacteriological examination was made with the following results:

Cover glass preparations prepared directly from the blood showed numerous chains of large bacilli that were apparently bacilli of anthrax fever. Cultures were made from the blood and from these the characteristic organism of anthrax was separated. The virulence of the disease germ was tested by subcutaneous inoculations of broth cultures into guinea pigs. In 28 hours death ensued and a post mortem examination showed the characteristic enlargement of the spleen, the blood appearing very dark and not coagulating. Microscopic examination of blood and cultures from the inoculated pigs left no room for doubt but that the disease from which the horse died was that of anthrax.

#### HISTORY OF OUTBREAK.

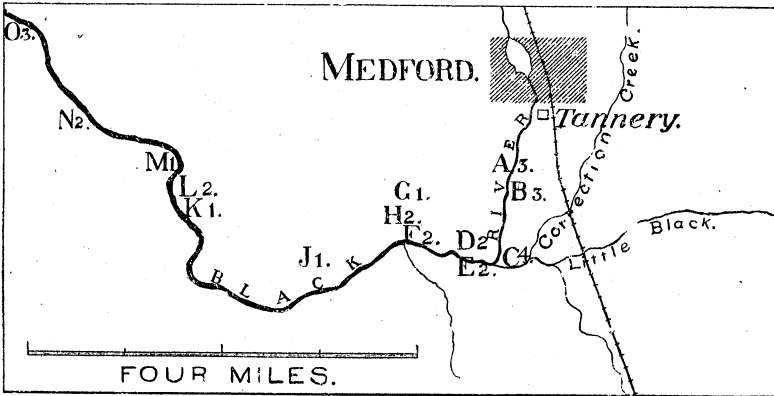
Through the kindness of Dr. Eugene Le Sage of Medford, a partial history of the outbreak of the preceding summer has been secured. This, with the further data collected by the writer on several visits to the region, is herewith presented to show the extent and distribution of the disease.

The disease is confined to the banks of the Black River below the city of Medford. Although several small tributaries join this stream (see map) the trouble has not appeared as yet on any of the same.

For the distance of about 10 miles down stream, farmers whose lands were contiguous to the river have lost in all this last year about 30 head of stock (horses and cattle). The losses have been widely distributed, occurring on at least fourteen farms, the individual loss ranging from one to four animals. The actual losses for the past season are indicated on the respective farms on the map. When one considers in addition to the widespread occurrence of the disease that the outbreak

*Anthrax Fever.*

extended nearly to the limits of the present settled region, and that the losses were sometimes all or nearly all of the stock owned by the farmers, the severity of the same is apparent. It was impossible to get any very satisfactory data as to the symptoms of the disease. Most of the animals were reported as sick but 24 to 36 hours. Generally a high fever was noted, and sometimes blood was observed issuing from the natural openings (mouth and rectum). In some instances the farmers opened the carcasses, and the enlarged spleen characteristic of anthrax was the most conspicuous condition. While the symptoms and post mortem data are too unsatisfactory on which



to place much reliance, one other factor practically settles the case, and that is the artificial inoculation of no less than five persons. These infections were caused by persons skinning animals to save the hides, and in all cases, carbuncles were produced on exposed parts of the body (hands, arms, etc.). In some cases where treatment was delayed, general infection (blood poisoning) followed, nearly resulting in death in some instances. The diagnosis of physicians having charge of these cases was anthrax.

Inquiry among stock owners showed undoubtedly that the

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*Anthrax Fever.*

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disease was produced either by drinking river water or grazing on lowland meadows. In several instances animals kept from the river or meadow lands but fed on hay taken from such meadows acquired the disease, showing that the grass was contaminated with the spores of the disease germ.

## ORIGIN OF THE DISEASE ORGANISM.

The distribution of the disease along the river bottom lands leaves no doubt as to the fact that the river has been the means of spreading the same. But how did the disease germ originally find its way into the river? Just below the city of Medford there is located a tannery and the waste waters from this are discharged into a canal that empties into the Black River. The refuse water from the tannery contains in addition to the wash water, water from the soak vats, more or less solid material as hair, particles of flesh, hide, etc. These are discharged with liquid wastes, and although provision is made by screening to remove the coarser particles, some of this coarse refuse and all of the liquid waste finds its way down stream. In the spring of the year when the river is high and the low meadow lands are inundated, more or less of this material is floated back from the main current, there to remain as the stream subsides. Particles of hair and flesh are reported as having been frequently found in the meadow grass.

## RELATION OF DISEASE GERM TO HIDES, ETC.

The disease of anthrax occurs most commonly in cattle and sheep, although other domesticated animals are by no means exempt from it. It is a blood affection and every drop of blood from the animal contains the living organisms that are capable of propagating themselves if placed under favorable conditions. While the germ in the living animal is in the vegetating condition and is incapable of long retaining its vital-

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*Anthrax Fever.*

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ity in competition with putrefactive bacteria, it forms spores very readily when exposed to the air, and when these are once produced, the resistance of the disease germ is enormously increased as anthrax spores in a dried condition can retain their vitality for years. It therefore follows that hides from infected animals always contain these spores as the skins are inevitably covered with some blood. If, therefore, the tanneries should use infected hides, all of the rest of the conditions necessary for the transference of the disease germs from originally infected animals to healthy stock are present.

## DISEASE PROBABLY INTRODUCED FROM INFECTED ASIATIC HIDES.

As the disease cannot originate in and of itself, but must come from some pre-existing cause, and as it is not naturally established in any contiguous portion of the country, it is practically certain, in view of all the circumstances surrounding the case, that the infection was spread by the use of diseased hides. But from whence came these hides? An inquiry made of the tannery manager elicited the fact that the bulk of the hides treated came from China. It has long been known that the disease is thoroughly established in many regions of Asia, Europe, and to a lesser extent in Africa and portions of South America, and that under commercial conditions hides of Asiatic origin frequently cause outbreaks of anthrax in the vicinity of tanneries.

During the same summer anthrax also broke out among the tannery operatives in a tannery owned by the same company and operated at Mellen, Ashland Co. This region is comparatively unsettled and hence there were but very few cases where stock became infected, but a number of tannery operatives acquired the disease, and in some cases death resulted. It was found subsequently that in this tannery also hides of Asiatic origin were used, and that some of the same carload

*Anthrax Fever.*

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which was used at the Medford tannery were also shipped to the Mellen tannery to be handled. From this circumstance it seems beyond question that the infection of human beings and cattle arose from the introduction of these hides of Asiatic origin.

## REPORTS OF ANTHRAX OUTBREAKS OCCURRING IN CLOSE RELATION WITH TANNERIES.

That the causal relation between this disease and the tannery above referred to is by no means uncommon is evident from the reported outbreaks of anthrax that have been noted from time to time in other portions of the United States.

For the past eight years anthrax has broken out at various places in Delaware<sup>1</sup> along the banks of the Delaware river and its tributaries. These outbreaks have had at least five foci from which the infection primarily originated. In one case it was traced to the sewage of one of the morocco shops in Wilmington where South American goat skins were being handled. In the remaining four outbreaks the cause has been due to the floating ashore of disease material. Presumably this has come from carcasses of animals that have been thrown into the river, as such have been observed from time to time, and as it is known that the disease prevailed on the New Jersey shore farther up stream. According to Professor Neale of the Delaware Experiment Station there were in 1896 twenty-five morocco shops in Philadelphia that worked up 100,000 goat skins daily, and fourteen such shops in Wilmington where 25,000 skins a day were handled. Anthrax has quite frequently developed among the workmen in these shops, showing that the hides are at times infected, and it is more than probable that the contamination of the Delaware river is attributable to this source.

Ravenel<sup>2</sup> has reported outbreaks in three different localities

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<sup>1</sup>Delaware Expt. Station 7th, 8th and 9th Annual Reports, 1895-97.

<sup>2</sup>Philadelphia Medical Journal, April 22, 1899.

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*Anthrax Fever.*

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in Pennsylvania where the disease occurred among workmen in tanneries or cattle pastured on meadows watered by streams carrying tannery refuse. These tanneries were all under the control of a single company and at each place hides had been received from China.

Localized outbreaks have also occurred in at least ten or twelve other states. In a number of cases the inception of the disease has been associated with tanneries. Rembold<sup>1</sup> cites nine cases of human infection in a small town in Germany in four years. All but one were operatives in tanneries. In the same district in twelve years, anthrax occurred on twenty-three different farms, in all but six of which pollution with tannery refuse was directly or indirectly possible. On "wild hides" imported from China he was able to find *Bacillus anthracis*. Confirmatory cases of the relation of tanneries to the spread of the disease might be increased almost indefinitely, if such were necessary.

It would seem that the tanning of hides from infected regions is a menace not only to animal industry but to public health as well, for in the aggregate, the number of persons, principally tannery operatives, who contract anthrax (malignant pustule or carbuncle) is by no means inconsiderable. This question is one of considerable importance in this state as in other states containing forests from which tan bark is to be had in merchantable quantities. Fortunately the tanneries of Wisconsin, of which there are a goodly number, are situated in lake shore towns where the refuse is emptied almost directly into the lake, or are located in the north central and northern part of the state where the country has not yet been settled to any great extent. The danger at present then to the agricultural interests of the state is much reduced on account of this condition. As the northern regions become settled and stock is introduced more

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<sup>1</sup>Zeit. f. Hygiene, 1888, 4:498.

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*Anthrax Fever.*

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and more, the danger from streams receiving tannery refuse will undoubtedly be increased. As already noted, in the present outbreak the disease was traced down the Black river, practically to the border of the already settled regions.

DANGER TO HUMAN BEINGS AND STOCK.

There are two important phases of the question that are to be raised in this connection. First and foremost, the danger to human beings from infection from these sources, and secondly, to the agricultural interests that are exposed to infection.

The second phase of the question is one which pertains more to the farming interests, and consequently, it is not necessary to consider it here in this connection any more than in so far that a control of the disease in animals will be helpful to the restriction of the malady among human beings.

Anthrax is not indigenous to this country; consequently, the use of American hides for tanning purposes is not a source of danger. Neither is it likely that hides from all foreign countries are liable to be diseased. So far where epizootics have occurred, they have generally been traced to Chinese hides, although the disease in England has also been connected with the use of South American skins. At the present time there are United States regulations that permit the President to place an embargo on the importation of hides from neat cattle coming from known infected districts, but it has been considered impossible on the part of the Government authorities to enforce this law, as there exists at present no practicable means whereby it is possible to determine whether any consignment of hides intended for shipment is infected or not. And also because the prohibitory law is at present only applied to neat cattle. Inasmuch as this disease can be easily introduced on hides of other kinds it necessarily follows that an embargo upon one



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*Anthrax Fever.*

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kind of skins which might carry the contagion would be no efficient guarantee that the disease could be kept out by such a measure.

## CAN HIDES BE EFFICIENTLY DISINFECTED?

Barring the absolute exclusion of all suspected hides, another course to pursue would be the disinfection of the same by some process that would destroy the spores of this organism without altering the character of the hides for tanning. The germ of this disease can be readily killed by the use of steam, and a large number of strong disinfectants, as mercury, carbolic acid, etc., but these practically destroy the value of the hide, and are therefore useless for the desired purpose.

Experiments have been made with various substances as sulphur and hydrofluoric acid<sup>1</sup>, but with poor success. Formalin has been recommended as a suitable agent by Eitner, but from the marked action of formaldehyde on albuminoid matter, it seemed probable that the hides would be injured if any considerable quantities of this disinfectant were used. In order, however, to test this matter a series of experiments were made.

## DISINFECTION EXPERIMENTS WITH FORMALDEHYDE.

Preliminary to the tanning process the hides as received are allowed to macerate for several days in "soak vats" filled with water. This softens the hide and loosens the hair so that when subjected to the fermentative "sweating" process, the hair and adherent flesh readily slough off. As the hides are allowed to remain in these soak vats from four to ten days, depending upon the temperature, it was thought that this stage would offer the best opportunity for the application of the disinfectant. In disinfecting at this stage, the tannery operatives would also

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<sup>1</sup>Leather Trades Review, Aug. 8, 1899.

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*Anthrax Fever.*

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be protected, for in the great majority of cases, "hide poisoning" or anthrax infection in human beings occurs among the operatives who clean off the remnants of flesh and hair after the hide has passed through the sweating process.

As formaldehyde renders albuminous bodies insoluble, it would be necessary in any event to use the most dilute solution possible. Under such circumstances the time of exposure must be considerably increased in order that the disinfection be efficient.

The results of these experiments with formaldehyde where the hides were infected with anthrax spores showed that where the solution contained 1:2500, 1:5000 and 1:10000 parts of formaldehyde, considerable disinfecting action had occurred, as was shown by the decrease in the number of colonies found on the culture plates; but it was noted that under such conditions that the hides were toughened and apparently made somewhat insoluble. Further, where the exposure was continued for some days, the disinfectant gradually diminished in strength, owing to the fact that the formaldehyde united with the albuminoids of the hide producing an insoluble compound. Tests of the formaldehyde made at different intervals according to Deniges' method (Analyst, 1896, Vol. 21, page 285) showed that formaldehyde in the proportions of 1:2500 disappeared entirely in the course of twelve days; 1:5000 in the course of ten days; and 1:10000 in the course of eight days. It was evident from these experiments that formaldehyde could be used as an agent in the destruction of the anthrax spores on the hide; but it seems more than probable that the chemical action upon the skins would be such as to seriously interfere with the successful tanning of the same. Pieces of hide subjected to the influence of formaldehyde solutions of varying strength were therefore sent to the tannery to be subjected to the sweating process. The results of these tests were as follows:

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*Anthrax Fever.*

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Samples immersed in solutions containing 1:5000 and 1:1000 remained firm, and the hair did not "sweat off." Pieces exposed to solutions containing 1:2000, 1:5000 and 1:10000 parts of formaldehyde were fairly well softened and sweat off to some extent, but not as thoroughly as they should. It is evident from the above that formaldehyde injures the tanning of the hide, as it coagulates the albuminoids in the skin and so prevents the ready removal of adherent flesh and hair. Its chemical union with these substances also lessens materially its disinfecting power and thereby renders it of little worth as an agent in destroying the disease germs adherent to hides.

The foregoing results indicate that formaldehyde does not offer much help to the tanner in the treatment of hides infected with anthrax. At the present time there appears to be no method of efficient disinfection that can be applied previous to the tanning process without injury to the hides.

The only recourse, then, so far as the introduction of diseased hides is concerned, is to use all possible care with material imported from regions known to be infected with this disease. In this respect China hides have the worst reputation, as a very considerable number of outbreaks have occurred where skins from this region have been used.

So far as danger to operatives is concerned it seems, then, that no treatment can be given that will eliminate the possibility of infection of human beings. As infection in these cases is generally acquired through cuts or wounds on the hands and other exposed portions of the body, it is necessary to guard against this danger as much as possible by antiseptic treatment. Managers of tanneries should see that workmen do not neglect any slight cuts or abrasions of the skin, but the same should be thoroughly disinfected by mercuric bichloride, carbolic acid, or some other well known disinfectant. Under ordinary conditions man is not as susceptible to anthrax as the lower animals, and

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*Anthrax Fever.*

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generally infection remains localized at point of introduction, producing the so-called malignant pustule or carbuncle. If the initial infection is neglected, a more general septicaemia (blood poisoning) may occur, which not infrequently terminates fatally. It is said by tanners that old operatives often become resistant to infection. This is undoubtedly due to a state of artificial immunity conferred by previous inoculations through invasion of the skin.

## NECESSITY OF DISINFECTION OF TANNERY WASTES.

Although at the present time there is no recognized method of treating the hides before they are tanned so as to destroy the organisms of this disease, yet this does not preclude the treatment of the tannery refuse after the waste material has been removed from the hide. Particles of hide, hair, and flesh, together with a considerable volume of wash water make up this refuse and naturally the spores of the disease germ are to be found on the solid material as well as in the water. From the distribution of the disease it seems probable that the solid refuse is more often concerned with the spread of the disease than the wash water; for the disease has been more frequently traced to inundated lands where the accumulation of such refuse on the soil would give exceptional facilities for the retention of these organisms. According to the experience of some of the farmers affected last season, it seems that animals were not affected at first when turned into lowland meadows. As the season advanced, and the herbage consequently became shorter, forcing the stock to graze closer to the soil and to seek the lower portions of the pastures where the grass was more luxuriant, horses and cattle began to acquire the infection. In some cases this happened on meadows subject to inundation but not contiguous to the river, indicating very conclusively that the diseased material was deposited during high water. Again in

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*Anthrax Fever.*

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some cases the disease was produced by feeding stock on hay gathered from these low meadows. The quantity of refuse, liquid as well as solid, is not so large but that it might be treated in a way so as to destroy its infectious properties, by cremation of the solid matter and chemical disinfection of liquids.

WHAT CAN THE FARMER DO TO AVOID CONTAGION?

The stock owner is not entirely without means at his disposal to prevent his domesticated animals from acquiring the disease. There are two courses open to him: one which enables him to prevent his animals from acquiring the disease by rendering them insusceptible or immune, by virtue of preventive vaccination; the other to prevent the disease by quarantining affected areas.

When it becomes apparent that any piece of ground is infected, no domesticated animals should be allowed to graze on the same unless they have been previously vaccinated by means of the method mentioned below. Under no circumstances should the animal be skinned where the cause of death is anthrax, as in this disease the blood, containing as it does millions of organisms, cannot be prevented from staining the soil. When these organisms come in contact with the air, they form the resistant spores which enables the germ to withstand drying almost indefinitely, and consequently, if the soil is once polluted, contagion may arise from this place.

In disposing of anthrax carcasses, they should never be thrown into the river, as has been done by some farmers in this outbreak. The only safe way is to bury them deeply or burn them unopened so as to destroy all contagious matter.

In some cases part of the pastures may be utilized by fencing off those areas that are most readily overflowed. Burning such marshes in the spring will also be helpful in destroying any

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*Anthrax Fever.*

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possible disease germs. Hay should not be utilized from known infected localities, for the disease organism retains its vitality on such fodder, and is liable to infect animals which afterwards consume such, a condition that occurred on at least one farm in this outbreak. Much can be done to prevent the spread of the disease by careful treatment of affected lands.

## VACCINATION AGAINST ANTHRAX.

Relative to the use of protective measures, it may be said that the Pasteur method of vaccination is an efficient treatment in the case of this disease. This method of vaccinating animals exposed to the contagion has been very successfully used in France and Austria, where the disease is widely spread and thoroughly established.

It consists of the inoculation of stock with a vaccine virus prepared from cultures of the anthrax bacillus. This virus is artificially weakened to such an extent that it produces a very mild fever in the animal, which protects the same should infection with the more virulent organism occur later.

Animals protected in this way may be allowed to graze upon affected meadows with comparative safety. This method has been used successfully by the Delaware Experiment Station. Prof. F. D. Chester writes me: "We have vaccinated about 1,500 cattle and have only had four deaths among these animals, while in the same infected territory there have been in the same period about 150 deaths among unvaccinated cattle."

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*Sanitary Analyses of Water.*

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## SANITARY ANALYSIS OF WATER.

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During the past two years the Board has furnished sanitary analyses of water, used for drinking purposes, from the following places, arranged alphabetically according to counties, with the following results:

### BARRON COUNTY.

Barron City—Biological analysis, February 1, 1900.

The following report is herewith submitted on a sample of spring water received from Dr. H. E. Hedback of Barron, Wis., labeled spring supplying the city. Date of shipment, 1/23/0; date of arrival 1/25/4 P. M. Condition on arrival, no ice in box. Temperature of water 48° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 455; number of species present, 3. Number of bacteria per cc able to liquefy gelatin, 18; number of bacteria per cc when incubated at 100° F., 6, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, no gas; glucose bouillon, no gas produced. Results of special physiological tests: Indol tests negative; carbolic acid bouillon, faint growth where .0015% was added; none with .05% acid.

General Remarks: Water shows no trace of undesirable bacteria. Would regard it as perfectly safe for potable purposes.

H. L. RUSSELL,

*Consulting Bacteriologist.*

Barron City—Chemical analysis, January 31, 1900.

The sample of water from Barron, Wis., marked "City Water," bearing no name of sender, has been analyzed, with results as follows:

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*Sanitary Analyses of Water.*


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	Parts per 100,000.
Total residue .....	11.70
Mineral residue .....	7.80
Volatile residue .....	.175
Ammonia, saline .....	.006
Ammonia, albuminoid .....	.005
Nitrates, less than .....	.040
Nitrites .....	none

Darkened slightly upon ignition. This is a soft water and apparently not a deep ground water. It contains some vegetable organic matter and seems to be entirely free from sewage pollution and perfectly wholesome.

A. S. MITCHELL,  
*State Chemist.*

BROWN COUNTY.

Green Bay City—Biological analysis, August 7, 1899.

The following report is herewith submitted on a sample of city water received from Dr. F. H. Thibodo of Green Bay, Wis., labeled "No. 1 Fire Hydrant." Date of shipment, 7/30/4 A. M.; date of arrival, 8/1/3 P. M. Condition on arrival, fair. Temperature of water, 62° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1,905; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 60; number of bacteria per cc when incubated at 100° F., 3-4, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, growth, but gas formed in only one culture.

Relation of gases. H : CO<sub>2</sub> :: — : —

Relation of gases. H : CO<sub>2</sub> :: 1 : 1½

Results of special physiological tests: Indol test positive.

General Remarks: This water is of average quality. A decision as to its condition will depend upon its origin. For a well water, it would be regarded as possibly suspicious; for an open surface water the presence of the organisms therein would not have much sanitary significance. I have no data as to



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*Sanitary Analyses of Water.*


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source of supply, but I should say in general that the sample contains some evidence of organic decomposition.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Green Bay City—Biological analysis, August 7, 1899.

The following report is herewith submitted on a sample of city water received from Dr. F. H. Thibodo of Green Bay, Wis., labeled "No. 2 City Reservoir." Date of shipment, 7/30/4 P. M.; date of arrival, 8/1/3 P. M. Condition on arrival, fair; temperature of water 62° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 2,800; number of species present, 5. Number of bacteria per cc able to liquefy gelatin, 200–225 liquefiers. Number of bacteria per cc when incubated at 100° F., 50, of which 13 were acid-producing germs. Results of fermentation tests—lactose bouillon positive; glucose bouillon positive in three tests.

Relation of gases.  $H : CO_2 :: 1 : 1\frac{1}{2}$ .

Relation of gases.  $H : CO_2 :: 1 : 2$ .

Results of special physiological tests: Indol tests positive with 1 cc of water. Isolation of gas-producing species shows same to belong to the proteous type of water bacteria.

General Remarks—This water shows a larger number of liquefying bacteria and gas-producing bacteria are abundant, but I am of the opinion that they are forms associated with the changes that take place in vegetable matter.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Green Bay City—Chemical analysis, August 4, 1899.

Two samples of water from Green Bay have been analyzed with results as follows:

*Sanitary Analyses of Water.*

	Parts per 100,000.	
	No. 1.	No. 2.
Total residue .....	32.70	30.00
Mineral residue .....	24.00	21.00
Volatile residue .....	8.70	9.00
Chlorine ..	1.600	1.600
Ammonia, saline .....	.006	.004
Ammonia, albuminoid .....	.003	.003
Nitrates ..	.020	.020
Nitrites .....	none	none

The chlorine is quite high showing the land water origin, but otherwise the waters are quite pure from a chemical standpoint.

A. S. MITCHELL,  
*State Chemist.*

Green Bay City—Biological analysis, July 30, 1900.

The following report is herewith submitted on a sample of spring water received from Dr. F. H. Thibodo of Green Bay, Wis., labeled No. 1 (Allouez spring). Date of shipment, 7/24/0; date of arrival, 7/25/0, 3 P. M. Condition on arrival, ice melted. Temperature of water, 66° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 5,400; number of species present, 6-7; number of bacteria per cc able to liquefy gelatin, 275; number of bacteria per cc when incubated at 100° F., 600, of which 18 were acid-producing germs. Results of fermentation tests: Glucose bouillon, gas produced where 1, 2 and 25 cc of water were added to fermentation tube.

Relation of gases. H : CO<sub>2</sub> :: 1½ : 1.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1.

Results of special physiological tests: Indol tests, positive, fecal odor. Carbollic gelatin, 2,300 bacteria per cc. Characteristics of pure cultures of two of the gas-producing bacteria separated from the water show that they belong to the colon or fecal type of organisms.

General Remarks—This water shows pollution with organic matter and the character of the bacteria in the same indicates close relationships with the fecal or colon organism. A more exhaustive study of the pure cultures isolated would be necessary

*Sanitary Analyses of Water.*

to determine definitely, but the bacteriological examination shows evident pollution, although the exact character of same cannot be determined.

(Signed.) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Green Bay City—Biological analysis, July 30, 1900.

The following report is herewith submitted on a sample of tap water received from Dr. F. H. Thibodo of Green Bay, Wis., labeled No. 2 (city supply). Date of shipment, 7/24/0; date of arrival, 7/25/0, 3 P. M.; condition on arrival, no ice in box; temperature of water, 66° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 287; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 20; number of bacteria per cc when incubated at 100° F., 51, of which none were acid-producing germs.

Results of fermentation tests: Glucose bouillon, no gas produced even where 25 cc of water were used.

Results of special physiological tests: Indol tests, negative.

General Remarks: This water is perfectly satisfactory from a biological point of view.

(Signed.) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Green Bay City: Biological analysis, July 30, 1900.

The following report is herewith submitted on a sample of well water received from Dr. F. H. Thibodo, Green Bay, Wis., labeled No. 3. Date of shipment, 7/24/0; date of arrival, 7/25/0, 3 P. M.; condition on arrival, ice melted; temperature of water, 66° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 4,160; number of species present, 4; number of bacteria per cc able to liquefy gelatin, large number; number of bacteria per cc when incubated at 100° F., 1,200, of which none were acid-producing germs.

Results of fermentation tests: Glucose bouillon, gas produced in all cases.

Relation of gases. H : CO<sub>2</sub> :: 1 : 2

Relation of gases. H. : CO<sub>2</sub> :: — : —

Results of special physiological tests: Indol tests, negative.

*Sanitary Analyses of Water.*

General Remarks: Water densely turbid with iron rust. contains considerable bacterial growth but no evidence of fecal pollution. Should not regard water as satisfactory until well pipe was thoroughly cleaned out.

(Signed.) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Green Bay City: Chemical analysis, August 10, 1900.

Three samples of water from Dr. F. H. Thibodo, Health Officer, Green Bay, Wis., received July 28th, date of sending not stated, have been examined with the following results:

From water tap:	No. 1.	No. 2.	No. 3.
Total residue .....	127.50	31.30	49.00
Mineral residue .....	92.06	23.80	41.00
Volatile residue .....	35.50	8.00	8.00
Chlorine ..	30.70	1.600	.550
Ammonia, saline .....	trace	.0015	.034
Ammonia, album. ....	.008	.005	.028
N as Nitrites .....	trace	none	none
N as Nitrates...very large amount		.040	small amount

I can hardly believe that 1 and 2 are from the same system at one time. No. 2 seems to be fairly pure in spite of the rather high chlorine. No. 1 does not seem to be fit for use. No. 3 seems to be free from sewage but to be derived from soil containing peat and ochre. It is probably not injurious but may give off a very disagreeable odor.

(Signed.) A. S. MITCHELL, *Chemist.*

Green Bay.—Biological analysis, September 11, 1900.

The following report is herewith submitted on a sample of spring water received from Dr. F. H. Thibodo of Green Bay, Wis., labeled (Allouez spring). Date of shipment, 9/4; date of arrival 9/6, 11 A. M.; condition on arrival, no ice in package; temperature of water, 70° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 5,700; number of bacteria per cc when to liquefy gelatin, about 100; number of bacteria per cc when incubated at 100° F., 900, of which very few were acid-producing germs.

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*Sanitary Analyses of Water.*

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Results of fermentation tests: Glucose bouillon—No gas produced except where large quantities of water were used (25 cc).

Relation of gases:  $H : CO_2 :: - : -$ .

Relation of gases:  $H : CO_2 :: 1 : 1\frac{1}{2}$ .

Results of special physiological tests: Indol tests, negative.

General Remarks: This water contains a large number of bacteria, but it shows no evidence of pollution whatever. Am inclined to consider the high germ content as attributable to rise in temperature during period between collection and making cultures.

(Signed.) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Green Bay—Biological analysis, September 11, 1900.

The following report is herewith submitted on a sample of spring water received from Dr. F. H. Thibodo of Green Bay, Wis., labeled Salvator spring. Date of shipment, 9/4/0; date of arrival, 9/6, 11 A. M.; condition on arrival, no ice in package; temperature of water, 70° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 3,700; number of species present, 3; number of bacteria per cc able to liquefy gelatin, practically none; number of bacteria per cc when incubated at 100° F., 8, of which none were acid-producing germs.

Results of fermentation tests: Glucose bouillon, slight evidence of gas in some tests.

Relation of gases:  $H : CO_2 :: - : -$ .

Relation of gases:  $H : CO_2 :: 1 : 1$ .

Results of special physiological tests: Indol test, positive.

General Remarks: There is no evidence of organic pollution, either vegetable or animal, in this sample. High germ content undoubtedly attributable to rise in temperature of sample during transportation.

(Signed.) H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*


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Green Bay—Chemical analysis, September 8, 1900.

The samples of mineral spring water sent for sanitary analysis by Dr. F. H. Thibodo, Green Bay, taken September 4th, have been examined with results as follows:

No. 1. Allouez Mineral Spring, sent in original bottle.

	Parts per 100,000.
Total residue .....	110.40
Mineral residue .....	71.50
Volatile residue .....	38.90
Chlorine .. . . . . .	22.300
Saline, ammonia .. . . . . .	.000
Albuminoid, ammonia .. . . . . .	.0045
Nitrates .. . . . . .	.0001
Nitrites .....	large amount

The presence of the albuminoid ammonia and nitrites, together with the very high chlorine and nitrates indicate some contamination. The water should at least be considered suspicious.

No. 2. Salvator Spring.

	Parts per 100,000.
Total residue .....	40.30
Mineral residue .....	29.20
Volatile residue .....	11.10
Chlorine .. . . . . .	1.000
Saline ammonia .. . . . . .	.000
Albuminoid ammonia .. . . . . .	.0005
Nitrites .. . . . . .	.0000
Nitrates .. . . . . .	.040

This water is extremely pure.

(Signed.)

A. S. MITCHELL,  
State Chemist.

BUFFALO COUNTY.

Mondovi—Biological analysis, August 20, 1900.

The following report is herewith submitted on a sample of well water received from Dr. S. Miller of Mondovi, Wis., labeled Meyer's flowing well. Date of shipment, 8/15/0, 8 A.

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*Sanitary Analyses of Water.*

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M.; date of arrival, 8/15, 8 P. M.; condition on arrival, no ice; temperature of water, 63° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 27; number of species present, 3; number of bacteria per cc able to liquefy gelatin, very few; number of bacteria per cc when incubated at 100° F., 3, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon, no growth; glucose bouillon, no growth except where 25 cc water were used.

Results of special physiological tests: Indol tests, negative.

General Remarks: A first class water bacteriologically.

(Signed.) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Mondovi—Biological analysis, August 20, 1900.

The following report is herewith submitted on a sample of well water received from Dr. S. Miller of Mondovi, Wis., labeled Gilman's well. Date of shipment, 8/15, 8 A. M.; date of arrival, 8/15, 8 P. M.; condition on arrival, no ice; temperature of water, 63° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 213; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 5; number of bacteria per cc when incubated at 100° F., none. Results of fermentation tests: Lactose bouillon, no growth; glucose bouillon, no growth except where 25 cc of water were used. No gas produced.

Results of special physiological tests: Indol tests negative.

General Remarks: A good water. No evidence of any foreign organic matter.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Mondovi—Chemical analysis, August 21, 1900.

The samples of water have been received from Mondovi, taken August 15th by S. G. Gilman. They have been examined, with results as follows:

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*Sanitary Analyses of Water.*


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	No. 1, Gilman's well, taken from pump.	No. 2 from Meyer's flowing well.
		Parts per 100,000.
Total residue . . . . .	23.70	12.00
Mineral residue . . . . .	18.50	8.30
Volatile residue . . . . .	5.20	3.70
Chlorine . . . . .	.175	.125
Ammonia, saline . . . . .	.001	.0005
Ammonia, albuminoid . . . . .	.002	.005
Nitrites . . . . .	faint trace	none
Nitrates . . . . .	.110	.015

The Meyer's water is exceedingly pure. The water from the Gilman well is comparatively pure, but shows some pollution by the increase in nitrates and the trace of nitrites present. I should judge it to be comparatively safe, however.

(Signed) A. S. MITCHELL,  
*Chemist.*

## CLARK COUNTY.

Humbird—Biological analysis, September 20, 1899.

The following report is herewith submitted on a sample of well water received from Dr. B. Alderman of Humbird, Wis., labeled ——. Date of shipment, 9/14; date of arrival, 9/15. Condition on arrival, fair. Temperature of water, 62° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 175; number of species present, 2; number of bacteria per cc able to liquefy gelatin, very few; number of bacteria per cc when incubated at 100° F., 6, of which none were acid-producing germs.

Results of fermentation tests: lactose bouillon, —; glucose bouillon, small amount of gas.

Results of special physiological tests: Indol tests, negative.

General Remarks: It was reported that this water had a bad taste, but from a bacteriological point of view, the water appears to be perfectly wholesome.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*



*Sanitary Analyses of Water.*

## COLUMBIA COUNTY.

Kilbourn.—Biological analysis, September 20, 1899.

The following report is herewith submitted on a sample of well water received from Dr. C. H. Phillips of Kilbourn, Wis., labeled —. Date of shipment, 9/22/9; date of arrival, 9/23/10 A. M. Condition on arrival, good. Temperature of water, 43° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 203; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 30; number of bacteria per cc when incubated at 100° F., 33, of which 14 were acid-producing germs.

Results of fermentation tests: Lactose bouillon, —; glucose bouillon, copious fermentation.

Relation of gases. H : CO<sub>2</sub> :: — : —

Relation of gases. H : CO<sub>2</sub> :: 1 : 2.

Results of special physiological tests: Indol test, very slight in one culture; none in second culture.

General Remarks: This water contains a large amount of rusty red precipitate that has no special sanitary significance. The bacteriological examination shows a fairly good water, the germ content is low. The only marked characteristic to be noted is the presence of considerable number of acid colonies that are able to ferment glucose. But these organisms belong to the type of bacteria associated with the breaking down of organic matter and are not fecal in character.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Kilbourn.—Chemical analysis, September 29, 1899.

The sample of well water of Kilbourn City, sent by Dr. C. H. Phillips, has been analyzed with results as follows:

	Parts per 100,000.
Total residue .....	8.00
Mineral residue .....	5.40
Volatile residue .....	2.60
Chlorine .....	.150
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.003
Nitrates .....	.100
Nitrites .....	.0001

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*Sanitary Analyses of Water.*


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I believe this water to be fairly safe.

A. S. MITCHELL,  
*State Chemist.*

Portage—Biological analysis, November 9, 1898.

The following report is submitted on sample of water received November 4, from Dr. F. D. Bentley, Portage, Wis. Temperature 63° F.; no ice upon arrival. Gelatin cultures showed 460 bacteria per cc, composed of 4-5 different species among which no liquefying bacteria were present. On litmus agar incubated at body temperature only one colony per cc was found and this failed to produce acid. In fermentation tests, a very small amount of gas was produced in glucose bouillon, but none in lactose bouillon. No indöl formed in peptone solutions.

From the above data, there are no indications that the water is polluted with surface material or contaminated with sewage.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Portage—Chemical analysis, November 18, 1898.

The sample of water sent by Dr. F. D. Bentley, Portage, Wis., November 4, was sent to me from the Agricultural School November 14. An insufficient amount was sent for complete analysis, but by using smaller amounts, the results were estimated as follows:

	Parts per 100,000.
Total residue . . . . .	31.80
Mineral residue . . . . .	21.0
Volatile residue . . . . .	1.650
Saline ammonia . . . . .	.006
Albuminoid ammonia . . . . .	.020
Nitrates . . . . .	.070
Nitrites . . . . .	.0005

My opinion is that this water is unfit for use.

A. S. MITCHELL,  
*State Chemist.*

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*Sanitary Analyses of Water.*

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## DODGE COUNTY.

Horicon.—Biological analysis, December 2, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. P. Klahr of Horicon, Wis., labeled, "drilled well." Date of shipment, 11/25; date of arrival, 11/27. Condition on arrival, fair; no ice. Temperature of water, 50° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 50; number of species present, 2; number of bacteria per cc able to liquefy gelatin, 10; number of bacteria per cc when incubated at 100° F., 3, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, growth but no gas.

Results of special physiological tests: Indol tests in glucose—free broth, growth but no indol. Cultures in Parietti's medium (carbolic acid broth), no growth.

General Remarks: From a biological point of view, this water appears to be entirely satisfactory.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Horicon—Biological analysis, December 2, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. P. Klahr of Horicon, Wis., labeled, "Well at foot of hill, 100 ft. from Rock River." (No adequate reason could be given by Express Company for the long delay in transporting samples.) Date of shipment, 11/25/8:30 A. M.; date of arrival, 11/27/4 P. M. Condition on arrival, fair; no ice. Temperature of water, 50° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at —° F., undetermined; number of bacteria per cc able to liquefy gelatin, great majority; number of bacteria per cc when incubated at 100° F., 5, of which none were acid producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, gas produced in small quantities.

Results of special physiological tests: Indol test, positive but not pronounced; growth in carbolic acid broth, negative.

General Remarks: On account of this sample being sent without ice, contrary to express directions as to shipment, I did

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*Sanitary Analyses of Water.*

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not make a quantitative determination of bacteria as it would have no significance. The physiological tests, however, show the water to be fair quality as indicated by slight development at blood heat and failure to form acid in litmus lactose agar.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Horicon—Chemical analysis, December 14, 1899.

Some time ago two samples of water were sent me from Horicon which were not labeled, and the third bottle did not reach me. From the note upon the blanks, I infer that Dr. Russell thought the green bottle was lost. This, however, was not the case. The sample in the green glass bottle which is said to be from the well at the schoolhouse,—open well 39 feet deep, 60 feet from outhouse,—collected by F. P. Klahr, tested as follows:

	Parts per 100,000.
Total residue . . . . .	54.50
Mineral residue . . . . .	34.30
Volatile residue . . . . .	20.20
Chlorine . . . . .	2.150
Ammonia, saline . . . . .	.000
Ammonia, albuminoid . . . . .	.006
Nitrates, large amount.	
Nitrites, trace.	

The sample in the dark glass bottle, said to be from drilled well, outhouse 40 feet distant, tested as follows:

	Parts per 100,000.
Total residue . . . . .	56.00
Mineral residue . . . . .	38.80
Volatile residue . . . . .	17.20
Chlorine . . . . .	3.450
Ammonia, saline . . . . .	.001
Ammonia, albuminoid . . . . .	.007
Nitrates, less than . . . . .	.050
Nitrites . . . . .	none

None of these waters seem to be seriously polluted. The one from schoolhouse shows considerable soil leaching (past pollution).

A. S. MITCHELL,  
*State Chemist.*

*Sanitary Analyses of Water.*

Neosho—Biological analysis, June 21, 1899.

The following report is herewith submitted on a sample of well water received from Dr. Jesse A. Clason of Neosho, Wis., labeled well from Ashippen. Date of shipment, 6/16/99; date of arrival, 6/17/11 A. M. Condition on arrival, good. Temperature of water, 52° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 640; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 65; number of bacteria per cc when incubated at 100° F., 19, of which 3 were acid-producing germs.

Results of fermentation tests: Lactose bouillon, 90 per cent. gas; glucose bouillon, 50 per cent. gas; 60 per cent. gas.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1.

Results of special physiological tests: Growth occurred in Parietti's acid bouillon where two and four drops of acid were added. Indol was produced in abundance in glucose-free broth. Mass cultures showed copious gas evolution.

General Remarks: This water shows indol-forming, gas-producing, acid-forming bacteria to be present in considerable numbers. The character of some of the forms isolated show strong fecal characteristics. The mere fact of sudden rise and fall in level of water in wells in itself indicates that seepage from surrounding soil is taking place. Such a condition may become an element of danger at almost any time.

H. L. RUSSELL,

*Consulting Bacteriologist.*

Neosho—Chemical analysis, June 24, 1899.

The sample of water sent by Jesse A. Clason, M. D., from well at Neosho, has been examined with results as follows:

Parts per 100,000.

Total residue .....	30.50
Mineral residue .....	21.20
Volatile residue .....	9.40
Chlorine ..	.450
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.006
Nitrites .....	none
Nitrates ..	moderate amount

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*Sanitary Analyses of Water.*

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This water shows considerable soil leaching, but does not show sufficient pollution from a chemical standpoint to warrant condemnation.

A. S. MITCHELL,  
*State Chemist.*

## DOOR COUNTY.

Sturgeon Bay—Biological analysis, April 4, 1899.

The following report is herewith submitted on a sample of well water received from Dr. A. J. Kreitzer of Sturgeon Bay, Wis., labeled No. 1, 120 ft. deep. Date of shipment, 3/28/2:30 P. M.; date of arrival, 3/31. Condition on arrival, cold, but no ice in box. Temperature of water 65° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nutrient gelatin grown at 60° F., 4,410; number of species present, 2-3; number of bacteria per cc able to liquefy gelatin, few; number of bacteria per cc when incubated at 100° F., 112, of which 3 were acid-producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, no gas, but some growth. Results of special physiological tests: no indol produced in Dunham's solution.

General Remarks: The germ content of this well is somewhat high if it represents the true condition, but under the circumstances, where no ice was present in box, it is impossible to tell whether temperature has been maintained at proper point. No other suspicious symptoms are apparent.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Sturgeon Bay—Biological analysis, April 4, 1899.

The following report is herewith submitted on sample of well (125 feet deep) water received from Dr. A. J. Kreitzer of Sturgeon Bay, Wis., labeled No. 2. Date of shipment, 3/28/2:35 P. M.; date of arrival, 3/31 (Express Company claimed it was shipped 3/30). Condition on arrival, cold, but no ice. Temperature of water 65° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nutrient gelatin grown at 60° F., 25,000; number of species present, 3-4; number of bacteria per cc able to liquefy gelatin,

*Sanitary Analyses of Water.*

numerous; number of bacteria per cc when incubated at 100° F., 112, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, gas (50%) formed in three days.

Relation of gases.  $H : CO_2 :: — : —$

Relation of gases.  $H : CO_2 :: 1 : 2.$

Results of special physiological tests: Cultures made in Dunham's solution showed growth but no formation of indol.

General Remarks: The high germ content in this sample was probably due to conditions of shipment. The presence of gas forming bacteria is to be regarded with suspicion, especially as the water comes from a well 125 feet deep. This is the only suspicious symptom aside from the high germ content. It is impossible to give accurate results in cases like this unless precautions are taken by the consignee to hold sample at low temperature.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Sturgeon Bay—Biological analysis, April 4, 1899.

The following report is herewith submitted on a sample of well water received from Dr. A. J. Kreitzer of Sturgeon Bay, Wis., labeled No. 3, 65 feet deep. Date of shipment, 3/28; date of arrival, 3/31. Condition on arrival, cold, but no ice. Temperature of water, 65° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nutrient gelatin grown at 60° F., 4,630; number of species present, 3-4; number of bacteria per cc able to liquefy gelatin, numerous; number of bacteria per cc when incubated at 100° F., 118, of which 5 were acid-producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, 90% gas formed in three days.

Relation of gases.  $H : CO_2 :: — : —.$

Relation of gases.  $H : CO_2 :: 1 : 2.$

Results of special physiological test: Indol formation in Dunham's solution did not occur.

General Remarks: If this water represents the real state of affairs and the well is a tight well, I should consider the con-

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*Sanitary Analyses of Water.*


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ditions somewhat suspicious. A deep well water (protected well) should not have these gas forming acid bacteria present. They are not fecal bacteria necessarily, but they are associated with decomposition of organic matter and their presence in a water supply should be satisfactorily explained. Not having the data at hand as to character of wells, etc., it is impossible to draw any definite conclusions.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Sturgeon Bay—Chemical analysis, April 10, 1899.

The three samples of water from A. J. Kreitzer, Sturgeon Bay, were analyzed with results as follows:

	No. 1 Well 120 ft. deep.	No. 2 Well 125 ft. deep.	No. 3 Well 65 ft. deep.
Total residue . . . . .	29.00	41.80	42.40
Mineral residue . . . . .	21.40	25.90	32.70
Volatile residue . . . . .	7.60	15.90	9.70
Chlorine . . . . .	.250	2.325	2.275
Ammonia, saline . . . . .	.002	.002	.004
Ammonia alb. . . . .	.005	.010	.009
Nitrates . . . . .	.025	.125	.150
Nitrites. . . . .	.0000	none	none

Water No. 1 seems to be quite pure. Numbers 2 and 3 seem to be slightly polluted with sewage, as shown by the increase in albuminoid ammonia and the large amount of resultant mineral matter, as chlorine and nitrates.

A. S. MITCHELL,  
*State Chemist.*

DOUGLAS COUNTY.

West Superior—Biological analysis, September 30, 1900.

The following report is herewith submitted on a sample of well water received from Dr. C. M. Gould of West Superior, Wis., labeled "No. 1713 Lackawanna Ave." Date of shipment, 9/20.; date of arrival 9/21. Condition on arrival, good. Temperature of water, 45.5° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nu-



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*Sanitary Analyses of Water.*


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trient gelatin grown at 65° F., 1,550; number of species present, 4; number of bacteria per cc able to liquefy gelatin, several hundred; number of bacteria per cc when incubated at 100° F., 150, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, gas produced in all cases.

Relation of gases.  $H : CO_2 :: - : -$ .

Relation of gases.  $H : CO_2 :: 2 : 1$ .

Results of special physiological tests: Indol tests positive.

General Remarks: I should not consider the results of this analysis as showing a first class well water, although there is no direct positive evidence of fecal drainage. If sample submitted represents fairly the condition of drilled or tight well, should regard it with suspicion. In open or dug well, conditions might be explained by entrance of organisms from surface. Must interpret in light of actual location of well.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

West Superior—Biological analysis, September 30, 1900.

The following report is herewith submitted on a sample of city water received from Dr. C. M. Gould of West Superior, Wis., labeled "No. 1620 58th St." Date of shipment, 9/20/0; date of arrival, 9/21. Condition on arrival, good. Temperature of water, 45.5° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nutrient gelatin grown at 65° F., 8,000; number of species present, 5; number of bacteria per cc when incubated at 100° F., 2,000, of which none were acid-producing germs; number of bacteria per cc able to liquefy gelatin, 100. Results of fermentation tests: Glucose bouillon, gas 50-60% where 1 and 2 cc of water were used.

Relation of gases.  $H : CO_2 :: - : -$ .

Relation of gases.  $H : CO_2 :: 1 : 1$ .

Results of special physiological tests: Indol tests, positive.

General remarks: The germ content of this water is high, but the character of species shows them to belong mainly to the normal water bacteria. This condition might be accounted

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*Sanitary Analyses of Water.*

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for if water was drawn from service pipes that were used but little. There appears to be no evidence of fecal type of bacteria.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

## FOND DU LAC COUNTY.

Brandon—Biological analysis, January 11, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. E. Shaykett of Brandon, Wis., labeled —. Date of shipment, Jan. 5, 1899; date of arrival, Jan. 6, 1899. Condition on arrival, good. Temperature of water, 60° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nutrient gelatin grown at 65° F., 17; number of species present, one or two; number of bacteria per cc able to liquefy gelatin, none; number of bacteria per cc when incubated at 100° F., 16, of which 8 were acid-producing germs.

Results of fermentation tests: Lactose bouillon, turbid; glucose bouillon, turbid.

Relation of gases. H : CO<sub>2</sub> : : no gas formed.

Relation of gases. H : CO<sub>2</sub> : : no gas formed.

Results of special physiological tests: Parietti's solution 1-10 cc inoculated with 2, 4, 6, and 8 drops of this solution gave no growth. When 25 cc of this water was added to 50 cc of glucose broth and incubated to isolate the colon organism, growth occurred but no gas was formed. Inoculation of acid-forming colonies on agar cultures into fermentation tubes gave no gas, showing that acid organism was not colon.

General Remarks: The above data show that the water appears to be without fecal pollution. Only one suspicious symptom developed, and that was the development of acid forming colonies on agar incubated at blood heat. These organisms were later shown not to be colon germs.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

*Sanitary Analyses of Water.*

Brandon—Chemical analysis, January 12, 1899.

The sample of water sent by F. E. Shaykett, Brandon, collected January 5, 1899, from well ten rods from barn yard, has been tested with results as follows:

	Parts per 100,000.
Total residue .....	38.10
Mineral residue .....	30.10
Volatile residue .....	8.00
Chlorine . . . . .	.500
Ammonia, saline . . . . .	.005
Ammonia, albuminoid . . . . .	.004
Nitrates . . . . .	.025
Nitrites . . . . .	.0000

While this water shows a small amount of seepage, I do not consider it dangerously polluted.

A. S. MITCHELL,  
*State Chemist.*

Waupun—Biological analysis, August 28, 1900.

The following report is herewith submitted on a sample of artesian well water received from Dr. G. B. Durand, of Waupun, Wis., labeled ——. Date of shipment, 8/23, 2 P. M.; date of arrival, 8/24, 10:30 A. M. Condition on arrival, no ice. Temperature of water, 69° F. Number of bacteria per cc (cubic centimeter, which is approximately twenty drops) on nutrient gelatin grown at 20° F., 76; number of species present, 3; number of bacteria per cc able to liquefy gelatin, 21; number of bacteria per cc when incubated at 100° F., 33, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, negative.

General Remarks: This water seems to be a most excellent one from a bacteriological standpoint.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Waupun—Chemical analysis, September 7, 1900.

The sample of water sent from Waupun, said to be from tank supplied from two artesian wells, has been examined with results as follows:

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*Sanitary Analyses of Water.*


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	Parts per 100,000.
Total residue .....	36.00
Mineral residue .....	24.50
Volatile residue .....	11.50
Chlorine .....	.600
Saline ammonia .....	.001
Albuminoid ammonia .....	.010
Nitrates .....	.050
Nitrites .....	.0015

The residue blackened somewhat on ignition. This water does not seem to be seriously polluted, but the albuminoid ammonia and nitrates are higher than is usual in artesian waters, and the presence of nitrites is certainly suspicious. The quantity of nitrites would probably have been much smaller if this water had been analyzed promptly upon its receipt. I have been exceedingly busy and away from this office a great portion of the time.

(Signed)      A. S. MITCHELL,  
*Chemist.*

GRANT COUNTY.

Platteville—Biological analysis, November 23, 1898.

The following report is herewith submitted on two samples of water received from Dr. J. V. Gardner, Platteville, Wis. Received in fair condition, no ice in box. Temperature 56° F. on arrival. No. 1 (city well) contained 1,300 bacteria per cc. No. 2 (Hayden's well) contained 350 bacteria per cc. When incubated at blood heat (98° F.) on litmus agar 50 colonies developed in No. 1, several of which were acid; in No. 2, 25, none of which were acid. In fermentation tests, gas was produced in No. 1 in both glucose and lactose bouillon; the same condition was observed in No. 2, although the quantities were not so great. Indol was formed in glucose-free broth in No. 1, a strong fecal odor being present; in No. 2 no indol was produced. Special methods, using large quantities, showed that No. 1 contained organisms of a fermenting and putrefactive character which had some qualities that allied it to the common colon organism, but which did not agree with the same in all particulars. Well No. 2 failed to show the suspicious symptoms that developed in No. 1.

*Sanitary Analyses of Water.*

In interpreting the above results, I would consider that No. 2 was considerably better than No. 1. Regarding No. 1, the biological results indicate the presence of bacteria that should not be present in a water supply that is free from external contamination. From this single analysis I am unable to conclude definitely as to the source of this contamination. The interpretation would depend upon the conditions that surround the well. Not knowing these it is impossible to specify more definitely. If the chemical examination showed evidence of pollution, I should suggest that the water be placed under suspicion until the presence of these fermenting and putrefactive organisms can be satisfactorily explained.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Platteville—Chemical analysis, November 23, 1898.

The sample of water sent me from Platteville, marked "City Supply Well No. 1," has been analyzed with results as follows:

	Parts per 100,000.
Total residue .....	74.30
Mineral residue .....	39.90
Volatile residue .....	34.40
Chlorine .....	5.70
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.006
N. as nitrites .....	.0000
N. as nitrates .....	1.050
Sample No. 2, Hayden's well:	
Total residue .....	86.00
Mineral residue .....	44.50
Volatile residue .....	41.50
Chlorine .....	5.50
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.005
Nitrites .....	faint trace
Nitrates ..	1.450

The nitrates and chlorine are unusually high in both of these waters. I do not consider that there is much difference in their

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*Sanitary Analyses of Water.*

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purity, both showing much "past pollution," but chemical analysis does not prove them dangerous.

A. S. MITCHELL,  
*State Chemist.*

Potosi.—Biological analysis, October 20, 1899. (No 42.)

The following report is herewith submitted on sample of well water received from Dr. T. B. Ennor of Potosi, Wis., labeled (a), well near saloon. Date of shipment, —; date of arrival, 10/16, 10 A. M.; condition on arrival, fair; temperature of water, 69° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., innumerable; number of species present, —; number of bacteria per cc able to liquefy gelatin, thousands; number of bacteria per cc when incubated at 100° F., 400, of which 100 were acid-producing germs.

Results of fermentation tests: Lactose bouillon, positive; glucose bouillon, positive, about 70 per cent. gas where 2 and 50 cc of water were used.

Relation of gases. H : CO<sub>2</sub> : : 2 : 1.

Relation of gases. H : CO<sub>2</sub> : : 1½ : 1.

Results of special physiological tests: Indol test showed abundant growth, fecal odor and positive for indol.

General Remarks: Character of germs isolated showed them to be putrefactive forms. Samples did not contain ice so can't say whether enormous quantitative amount of germ life is due to development since sample was taken or actually represents the conditions in the well. Under circumstances should consider water as suspicious until more was known about conditions.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Potosi.—Biological analysis, October 20, 1899.

The following report is herewith submitted on a sample of well water received from Dr. T. B. Ennor of Potosi, Wis., labeled (b), shallow well, 35½ from privy. Date of shipment, —; date of arrival, 10/16, 10 A. M.; condition on arrival, fair; temperature of water, 69° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutri-

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*Sanitary Analyses of Water.*

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ent gelatin grown at 65° F., hundreds of thousands; number of bacteria per cc able to liquefy gelatin, many; number of bacteria per cc when incubated at 100° F., 475, of which 25 were acid-producing germs.

Results of fermentation tests: Lactose bouillon—glucose bouillon, positive in 3 cc, also in 50 cc.

Relation of gases. H : CO<sub>2</sub> : : — : —.

Relation of gases. H : CO<sub>2</sub> : : 1½ : 1.

Results of special physiological tests: Indol tests—no fecal odor—slight positive test for indol.

General Remarks: Contains enormous number of germs, but positive diagnosis impossible as conditions were same as in No. 42. Positive gas fermentation shows poor conditions.

H. L. RUSSELL,

*Consulting Bacteriologist.*

Potosi—Biological analysis, October 20, 1899.

The following report is herewith submitted on a sample of well water received from Dr. T. B. Ennor of Potosi, Wis., labeled sample (c). Date of shipment, —; date of arrival, 10/16, 10 A. M.; condition on arrival, fair; temperature of water, 69° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., innumerable; number of bacteria per cc able to liquefy gelatin, liquefied all plates in 30 hours; number of bacteria per cc when incubated at 100° F., 1,020, of which 50 were acid-producing germs. Results of fermentation tests: Lactose bouillon—glucose bouillon, very slight where 50 cc was used.

Results of special physiological tests: No fecal odor in glucose—free broth but slight positive test for indol.

General Remarks: Biologically, this sample shows but a trace of fermentation although germ content is again very high.

H. L. RUSSELL,

*Consulting Bacteriologist.*

Potosi—Biological analysis, October 20, 1899.

The following report is herewith submitted on a sample of well water received from Dr. T. B. Ennor of Potosi, Wis., labeled sample (d), 25 feet deep. Date of shipment, —; date of arrival 10/16, 10 A. M.; condition on arrival, fair; temper-

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*Sanitary Analyses of Water.*


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ature of water, 69° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 275,000, estimate; number of bacteria per cc able to liquefy gelatin very many; number of bacteria per cc when incubated at 100° F., 1,200, of which a few were acid-producing germs.

Results of fermentation tests: Lactose bouillon—glucose bouillon, positive, about 40 per cent.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Relation of gases. H : CO<sub>2</sub> :: 1½ : 1.

Results of special physiological tests: Indol tests in glucose free broth gave strong fecal odor and positive test for indol.

General Remarks: Impossible to decide from biological analysis alone as to character of water, owing to possibility of germ growth because ice was not packed in box. Should consider it only a fair water at best.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

GREEN LAKE COUNTY.

Berlin—Biological analysis, February 27, 1899.

The following report is herewith submitted on a sample of well water received from Dr. B. F. Dodson of Berlin, Wis., labeled ——. Date of shipment, 2/22/9; date of arrival, 2/23, 11 A. M.; condition on arrival, fair; temperature of water, 55° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 10–15,000; number of species present, mostly one form; number of bacteria per cc able to liquefy gelatin, quite a large number—not accurately determined; number of bacteria per cc when incubated at 100° F., 25, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon, slight amount of gas; glucose bouillon, about 30 per cent. of gas.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1.

Results of special physiological tests: Mass cultures made with 100 cc water showed copious growth but no marked



*Sanitary Analyses of Water.*

amount of gas. In Peckham's alkali, peptone solution growth was abundant with very slight fecal odor but indol was only found in two cultures out of six.

General Remarks: The high bacterial content was due to relatively high temperature of sample on arrival, as is evident from the enormous growth of one species in cultures. The fermentation tests show presence of limited numbers of fermenting organisms but these are not of a character that are generally associated with decomposition of organic matter. The water shows nothing positively bad but on the other hand it is not perfectly free from foreign matter. I take it, it is an old well that has been used for a long time without being cleaned out. I do not think the same is the cause of the fever reported.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Berlin—Chemical analysis, March 1, 1899.

The sample of water from Dr. B. F. Dodson, Health Officer, Berlin, has been tested with results as follows:

	Parts per 100,000.
Total residue .....	116.8
Mineral residue .....	64.6
Volatile residue .....	52.2
Chlorine ..	18.00
Ammonia, saline .....	.005
Ammonia, albuminoid .....	.016
Nitrates .....	very large amount
Nitrites ..	traces

The amount of volatile matter was exceedingly high and much red oxide of nitrogen was evolved on heating. This water is very badly polluted, and should be condemned.

A. S. MITCHELL,  
*State Chemist.*

Berlin—Biological analysis, March 18, 1899.

The following report is herewith submitted on a sample of well water received from Dr. B. F. Dodson of Berlin, Wis., labeled —. Date of shipment, 3/13/9; date of arrival, 3/15/9; condition on arrival, good; temperature of water,

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*Sanitary Analyses of Water.*

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37° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 70° F., 30; number of species, 2-3; number of bacteria per cc able to liquefy gelatin, very few; number of bacteria per cc when incubated at 100° F., test failed.

Results of fermentation tests: Lactose bouillon growth; glucose bouillon growth.

Relation of gases. H : CO<sub>2</sub> :: no gas.

Relation of gases. H : CO<sub>2</sub> :: no gas.

Results of special physiological tests: No indol formed in Peckham's media.

General Remarks: The above water shows a low germ content. No fermenting organisms or germs capable of producing indol. From a biological point of view, I find no suspicious condition existing in the water.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Berlin—Biological analysis, April 19, 1899.

The following report is herewith submitted on a sample of well water received from Dr. B. F. Dodson of Berlin, Wis., labeled, well largely used by the public. Date of shipment, 4/14; date of arrival, 4/15; condition on arrival, good; temperature of water, 44° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 40; number of species present, 2; number of bacteria per cc able to liquefy gelatin, 6; number of bacteria per cc when incubated at 100° F., 10, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon growth; glucose bouillon growth.

Relation of gases. H : CO<sub>2</sub> :: no gas.

Relation of gases. H : CO<sub>2</sub> :: no gas.

Results of special physiological tests: In Dunham's solution, growth was observed but no indol was found.

General Remarks: Sample in good condition. A typical well water of a good type. Nothing from a biological point of view to indicate anything unfavorable.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*

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Berlin—Biological analysis, April 19, 1899.

The following report is herewith submitted on a sample of well water received from Dr. B. F. Dodson of Berlin, Wis., labeled West Polish Parochial School. Date of shipment, 4/14; date of arrival, 4/15; condition on arrival, good; temperature of water, 44° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1,128; number of species present, several; number of bacteria per cc able to liquefy gelatin 250; number of bacteria per cc when incubated at 100° F., 3-4, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon growth; glucose bouillon growth, 100 per cent. gas.

Relation of gases. H : CO<sub>2</sub> : : no gas.

Relation of gases. H : CO<sub>2</sub> : : 1 : 2.

Results of special physiological tests: On Dunham's solution, growth but no indol.

General Remarks: This water shows evidence of outside contamination. While this pollution cannot be said from the biological analysis to be due to sewage contamination, the well shows the presence of organic life in larger numbers than it ought. This is indicated by the high numerical content and also by the fact that gas-producing organisms of a fermentative character abound. The water should not be regarded as a thoroughly safe water in its present condition. In case of sickness in school, it might be the means of spreading trouble.

H. L. RUSSELL,

*Consulting Bacteriologist.*

Berlin—Chemical analysis, April 25, 1899.

The sample of water sent by Dr. B. F. Dodson, Berlin, has been examined with results as follows:

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*Sanitary Analyses of Water.*


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	Well Water in Pol. Par. School.	Dr. Dodson's Well.
	Parts per 100,000.	Parts per 100,00.
Total residue .....	62.70	43.70
Mineral residue .....	41.20	25.90
Volatile residue .....	21.50	17.80
Chlorine ..	1.450	3.550
Ammonia, saline .....	.004	.0025
Ammonia, albuminoid .....	.018	.007
Nitrites .....	.0002	.0001
Nitrates .....	large amt.	moderate amt.

The water from Dr. Dodson's well is undoubtedly contaminated and dangerous.

The parochial school well should evidently be condemned.

A. S. MITCHELL,  
*State Chemist.*

Berlin—Biological analysis, June 15, 1899.

The following report is herewith submitted on a sample of well water received from Dr. H. W. Morgenroth of Berlin, Wis., labeled, well. Date of shipment, 6/9/9; date of arrival, 6/10, 11:30 A. M.; condition on arrival, good, ice in box; temperature of water 53° F.; number of bacteria per cc (cube centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 650; number of species present, 6; number of bacteria per cc able to liquefy gelatin, very numerous; number of bacteria per cc when incubated at 100° F., 45, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon—glucose bouillon, gas formed in abundance where 3 and 5 cc were used for analysis; no gas where 1 cc was used.

Relation of gases. H : CO<sub>2</sub> : : 30 : 23.

Relation of gases. H : CO<sup>2</sup> : : 26 : 16.

Results of special physiological tests: Indol was obtained in one trial out of six. In Parietti's culture medium, growth occurred where 2, 4, 6 or 8 drops of acid were added, thus indicating putrefactive type of organisms. Where mass cultures were made (50 cc) gas was produced in abundance.

General Remarks: The above data indicate the presence of bacteria that are associated with decomposition of organic mat-

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*Sanitary Analyses of Water.*


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ter, but I do not think the same is necessarily fecal in character. In a surface water such a condition frequently prevails, but should not normally exist in a good ground water. If the well is an old one and has not been cleaned out, the above condition might be produced as a result of decomposition of organic matter arising from decaying timber, etc. Without knowing more fully the conditions surrounding this case I am unable to form more definite opinion from analysis.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Berlin—Chemical analysis, June 24, 1899.

The sample of water sent by Dr. H. M. Morgenroth of Berlin, taken from well 60 feet from outhouse, has been examined with results as follows:

	Parts per 100,000.
Total residue .....	152.10
Mineral residue .....	77.60
Volatile residue .....	74.50
Chlorine .....	16.300
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.016
Nitrites ..	.0002
Nitrates .....	very high

This is such water as might be drawn from a well near a slaughter house or packing house, or where the soil was saturated with salt, nitre and organic matter. The water is unusually impure from a chemical standpoint.

A. S. MITCHELL,  
*State Chemist.*

JEFFERSON COUNTY.

Ft. Atkinson—Biological analysis, October 24, 1898.

I have the following report to make on a sample of water received from Dr. U. P. Stair of Ft. Atkinson, Wis., on October 19th. Sample received in good condition. Temperature on arrival, 46° F.

A quantitative examination shows very few bacæria (5-10 per cc) in the sample. Fermentation tests failed to grow at all. On

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*Sanitary Analyses of Water.*


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lactose agar growth was quite abundant at body temperature but no acid-forming colonies were found. No indol was formed in cultures and other special differential culture media, the presence of fecal bacteria could not be demonstrated in any case.

From above data I find no suspicious condition to exist in the water and would therefore regard it as improbable that this well was the cause of the typhoid fever outbreak.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Ft. Atkinson—Chemical analysis, October 26, 1898.

The water sent me by Dr. Russell marked "Driven Well, 26 feet deep, Fort Atkinson," did not have the name of the sender plainly written but I presume you can locate the sample by the above.

Results of the analysis were as follows:

	Parts per 100,000.
Total residue .....	60.00
Mineral residue .....	35.90
Volatile residue .....	24.10
Chlorine .....	2,800*
Ammonia, saline .....	.003
Ammonia, albuminoid .....	.009
Nitrites .....	trace
Nitrates .....	.455

Water darkened slightly upon ignition.

While most of the impurity is in an oxidized condition, still I would consider this water dangerous.

A. S. MITCHELL,  
*State Chemist.*

JUNEAU COUNTY.

New Lisbon—Biological analysis, October 2, 1899.

The following report is herewith submitted on a sample of well water received from Dr. E. H. Townsend of New Lisbon, Wis., labeled, School House Well. Date of shipment, —; date of arrival, 9/28; condition on arrival, good; temperature of water, 59° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at

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*Sanitary Analyses of Water.*

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65° F., 530; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 250; number of bacteria per cc when incubated at 100° F., 5, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon, none; glucose bouillon, no fermentation, even where 3 cc of water were used.

Results of special physiological tests: Development in glucose—free bouillon, slight growth, no indol produced.

General Remarks: So far as the biological characteristics of this water is concerned, I find nothing of a suspicious nature. The water contains a rather large number of liquefiers than are usually present, but no other abnormal feature.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Lisbon—Biological analysis, October 2, 1899.

The following report is herewith submitted on a sample of well water received from Dr. E. H. Townsend of New Lisbon, Wis., labeled, Clark's Well. Date of shipment, —; date of arrival, 9/28/9; condition on arrival, good; temperature of water, 59° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 225; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 20; number of bacteria per cc when incubated at 100° F., 3, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon, no fermentation; glucose bouillon, no fermentation.

Results of special physiological tests: Indol tests—negative in one, faint positive in 2nd test.

General Remarks: This water shows no suspicious characteristics so far as its biological analysis is concerned.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Lisbon—Biological analysis, October 2, 1899.

The following report is herewith submitted on a sample of well water received from Dr. E. H. Townsend of New Lisbon, Wis., labeled, Town Well. Date of shipment, —; date of arrival, 9/28/9; condition on arrival, good; temperature of

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*Sanitary Analyses of Water.*

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water, 59° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 275; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 20; number of bacteria per cc when incubated at 100° F., 130, of which few were acid-producing germs.

Results of fermentation tests: Lactose bouillon—glucose bouillon, no fermentation in this medium.

Results of special physiological tests: Indol tests, positive and strong where 1 cc of water was used.

General Remarks: In general this water shows no marked indications of organic pollution. Positive indol test in absence of fermentation of glucose broth has but little sanitary significance. From a biological point of view, I would not consider the water as suspicious.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Lisbon—Biological analysis, October 2, 1899:

The following report is herewith submitted on a sample of well water received from Dr. E. H. Townsend of New Lisbon, Wis., labeled, Well of J. H. Marsh. Date of shipment, —; date of arrival, 9/28/9; condition on arrival, good; temperature of water, 59° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 4,050; number of species present, 56; number of bacteria per cc able to liquefy gelatin, very many; number of bacteria per cc when incubated at 100° F., 2,600, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon, growth but no gas; glucose bouillon, growth but no gas.

Results of special physiological tests: Indol tests in glucose free broth, positive and very pronounced.

General Remarks: The suspicious symptom in this water is its relatively high germ content, both in gelatin and agar. Either this is due to development of bacteria in water that is used but little, or to the more favorable conditions of growth due to the presence of organic matter. The character of the organisms present is that of forms normally found in water of a good quality, but some condition exists that permits of more luxuriant growth than generally occurs.

H. L. RUSSELL,  
*Consulting Bacteriologist.*



*Sanitary Analyses of Water.*

New Lisbon—Chemical analysis, September 29, 1899.

Samples of water have been sent by Dr. E. H. Townsend of New Lisbon, all of which were sent in pint, cork-stoppered bottles, leaving insufficient for chemical analysis after the removal of the bacteriological samples. Qualitative tests were made of these waters with the following results:

J. H. Marsh's well, New Lisbon:

	Parts per 100,000.
Nitrites .....	.0001
Nitrates .....	very heavy
Chlorine .....	large amount

Clark's well, New Lisbon: (Gave a precipitate of ferric oxide).

Nitrites .....	none
Nitrates .....	very low
Chlorine .....	lowest of samples sent

Town well, New Lisbon:

Nitrites .....	.0004
Nitrates .....	very large amount
Chlorine .....	very large amount

School well, New Lisbon:

Nitrites .....	none
Nitrates .....	very large amount
Chlorine .....	large amount

The town well is evidently polluted, and Marsh's well dangerous. I have sent for proper samples from the town well.

A. S. MITCHELL,  
*State Chemist.*

KENOSHA COUNTY.

Bristol—Biological analysis, November 4, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. E. Stevens of Bristol, Wis., labeled sample No. 1. Date of shipment, 10/30; date of arrival, 10/30, 4 P. M.; condition on arrival, good; temperature of water, 36° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin

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*Sanitary Analyses of Water.*


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grown at 65° F., 1,250; number of bacteria per cc able to liquefy gelatin, numerous, causing liquefaction of plates in 48 hours; number of bacteria per cc when incubated at 100° F., 525, of which 4 were acid-producing germs.

Results of fermentation tests: Lactose bouillon, positive; glucose bouillon, positive where even 1 cc of water was used.

Results of special physiological tests: Indol tests with 1 cc, positive; Parietti's carbolic-acid bouillon, growth where 9 drops were added to 10 cc culture fluid.

General Remarks: Water shows evidence of pollution with organic matter. Every physiological test confirms this view. Should regard it as unfit for potable use.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Bristol—Biological analysis, November 4, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. E. Stevens of Bristol, Wis., labeled "Sample No. 2." Date of shipment, 10/30; date of arrival, 10/30/4 P. M. Condition on arrival, good; temperature of water, 36° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 870 on second day; number of bacteria per cc able to liquefy gelatin, so predominant as to liquefy the plate in 48 hours; number of bacteria per cc when incubated at 100° F., 465, of which 13 were acid-producing germs. Results of fermentation tests: Lactose bouillon, positive; glucose bouillon, gas in all tests with 1, 2 and 50 cc of water.

Relation of gases. H : CO<sub>2</sub> : : 2 : 1.

Relation of gases. H : CO<sub>2</sub> : : 2 : 1.

Results of special physiological tests: Indol tests positive, even where 1 cc of water was used. Parietti's solution, abundant growth where 3, 6 and 9 drops were added to 10 cc of culture liquid.

General Remarks: Highly polluted; colon type of bacteria found in water.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

*Sanitary Analyses of Water.*

Bristol—Biological analysis, November 4, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. E. Stevens of Bristol, Wis., labeled No. 3. Date of shipment 10/30/99; date of arrival, 10/30/99 P. M.; condition on arrival, excellent; temperature of water, 36° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1950; number of species present, undetermined; number of bacteria per cc able to liquefy gelatin, so numerous as to liquefy cultures in two days; number of bacteria per cc when incubated at 100° F., 694, of which 2 were acid-producing germs.

Results of fermentation tests: Lactose bouillon—glucose bouillon positive where 1, 2 and 50 cc of water were used.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1.

Results of special physiological tests: Indol tests, with 1 cc positive Parietti's solution, 3 drops heavy growth; 6 drops marked growth; 9 drops growth.

General Remarks: Marked evidence of presence of organic pollution. Liable to cause trouble if disease germs as typhoid exist in neighborhood.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Bristol—Chemical analysis, November 10, 1899.

The following samples of water sent by Dr. F. E. Stevens, Bristol, Wis., October 30th, have been tested:

	Parts per 100,000.		
	No. 1	No. 2	No. 3
Total residue.....	62.40	89.40	90.80
Mineral residue .....	37.40	69.10	60.60
Volatile residue .....	25.00	20.30	30.20
Chlorine .....	5.500	3.675	8.275
Ammonia, saline .....	.0015	.0005	.0005
Ammonia, albuminoid .....	.008	.019	.007
Nitrates .....	large amt.	very large amt.	large amt.
Nitrites .....	.0002	.0007	.0001

All of these waters were badly polluted with sewage. No. 2 is much the worst.

A. S. MITCHELL,  
*State Chemist.*

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*Sanitary Analyses of Water.*


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## KEWAUNEE COUNTY.

Algoma—Biological analysis, February 24, 1900.

The following report is herewith submitted on a sample of well water received from M. W. Perry of Algoma, Wis., labeled factory well, condition on arrival, poor; temperature of water —° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 2000; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 25-30%; number of bacteria per cc when incubated at 100° F., 1500, of which majority were acid-producing germs.

Results of fermentation tests—lactose bouillon—glucose bouillon, gas produced in all cases, about 30% formed in each tube.

Relation of gases.  $H : CO_2 :: - : -$ .

Relation of gases.  $H : CO_2 :: 2 : 1$ .

Results of special physiological tests: Carbohic broth, copious growth.

Indol tests: Strong fecal odor in these cultures and positive test for indol.

General Remarks: Analysis vitiated by failure to send samples properly. Bacteria present belong to the putrefactive class, but organisms separated are not fecal in character. Impossible to judge more accurately of condition of water where samples are taken in this way.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Algoma—Biological analysis, February 24, 1900.

The following report is herewith submitted on a sample of well water received from M. W. Perry of Algoma, Wis., labeled Hanley's well; date of shipment (?); date of arrival 2/16/0; condition on arrival, poor; temperature of water —° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1800; number of species present, 5; number of bacteria per cc able to liquefy gelatin, very numerous; number of bacteria per cc when incubated at 100° F., 900, of which 175 were acid-producing germs.

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*Sanitary Analyses of Water.*


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Results of fermentation tests: Lactose bouillon—glucose bouillon, gas produced in all cases.

Relation of gases.  $H : CO_2 :: - : -$ .

Relation of gases.  $H : CO_2 :: 1 : 2$ .

Results of special physiological tests: Indol tests—strong fecal odor—positive test for indol—carbolic acid broth, strong growth.

General Remarks: These samples were addressed to Secretary State Board of Health and hence were not delivered for some time. In view of this delayed analysis, quantitative data have practically no value, but the physiological tests show that fermentative organisms are very numerous, although they do not seem to belong to fecal class.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Kewaunee—Biological analysis, January 29, 1900.

The following report is herewith submitted on a sample of well water received from Dr. F. J. Olle of Kewaunee, Wis., labeled, Bricked well; date of shipment, 1/22; date of arrival, 1/23/3 P. M.; condition on arrival, fair; temperature of water, 60° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 303; number of species present, 3; number of bacteria per cc able to liquefy gelatin 25; number of bacteria per cc when incubated at 100° F., 16, of which 2 were acid-producing germs.

Results of fermentation tests: Glucose bouillon, gas produced in some cultures but not uniformly, 45%.

Relation of gases.  $H : CO_2 :: - : -$ .

Relation of gases.  $H : CO_2 :: 26 : 99$ .

Results of special physiological tests: Indol test, negative. Parietti's solution, growth in .015 carbolic acid broth.

General Remarks: This water shows no marked peculiarities from bacteriological point of view. No evidence of sewage pollution from privy mentioned in letter of advice.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*


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Kewaunee—Chemical analysis, January 26, 1900.

The sample of water sent me by Frank J. Olle of Kewaunee, Wis., January 22nd, marked "well No. 1, brick well, 24 ft. deep, 6 ft. water, outhouse 50 ft. away, clay soil," has been examined with results as follows:

	Parts per 100,000.
Total residue .....	111.90
Mineral residue .....	67.50
Volatile residue .....	44.30
Chlorine .....	12.350
Saline ammonia .....	.003
Albuminoid ammonia .....	.015
Nitrites .....	.0025
Nitrates .....	very large amount.

Gave brown fumes of oxides of nitrogen upon ignition. This water is very badly polluted and should be condemned.

A. S. MITCHELL,

*State Chemist.*

Kewaunee—Biological analysis, February 15, 1900.

The following report is herewith submitted on a sample of well water received from Dr. F. J. Olle of Kewaunee, Wis., labeled No. 2; date of shipment 2/8/2 P. M.; date of arrival 2/10/8 A. M.; condition on arrival, good; temperature of water 43° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 200; number of species present, 4; number of bacteria, per cc able to liquefy gelatin, 15; number of bacteria per cc when incubated at 100° F., 5, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon growth; glucose bouillon gas formed sparingly.

Results of special physiological tests: Indol tests, negative. Carbohic broth (.09%) no growth.

General Remarks: Bacteriological analysis shows no present pollution; contains some bacteria associated with decomposition.

H. L. RUSSELL,

*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*

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Kewaunee—Biological analysis, February 15, 1900.

The following report is herewith submitted on a sample of well water received from Dr. F. J. Olle of Kewaunee, Wis., labeled No. 3; date of shipment, 2/8; date of arrival, 2/10/8 A. M. Condition on arrival, good. Temperature of water, 43° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 700; number of species present, 6; number of bacteria per cc able to liquefy gelatin, 80; number of bacteria per cc when incubated at 100° F., 62, of which 5 were acid-producing germs. Results of fermentation tests: Glucose bouillon, gas produced in some cases, others not.

Relation of gases. H : CO<sub>2</sub> : : — : —.

Relation of gases. H : CO<sub>2</sub> : : 1 : 1 $\frac{1}{4}$ .

Results of special physiological tests: Indol tests, positive; carbolic broth (.09%), positive growth.

General Remarks: Well contains organic matter undergoing change. Germ content somewhat high, but no evidence of sewage pollution occurring at present.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Kewaunee: Biological analysis, February 15th, 1900.

The following report is herewith submitted on a sample of well water received from Dr. F. J. Olle of Kewaunee Wis., labeled No. 4. Date of shipment, 2/8; date of arrival, 2/10/8 A. M. Condition on arrival, good. Temperature of water, 43° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1,250; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 114; number of bacteria per cc when incubated at 100° F., 24, of which one was acid-producing germ. Results of fermentation tests: Lactose bouillon, no gas; glucose bouillon, no gas.

Results of physiological tests: Indol tests, positive; carbolic acid broth (.09%), growth.

General Remarks: Evidently an old well containing organic matter that serves as food for luxuriant bacterial growth, but not related to sewage pollution.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*


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Kewaunee—Biological analysis, February 15, 1900.

The following report is herewith submitted on sample of well water received from Dr. F. J. Olle of Kewaunee, Wis., labeled No. 5. Date of shipment, 2/8; date of arrival, 2/10/8 A. M. Condition on arrival, good. Temperature of water, 43° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1,500; number of species present, 3; number of bacteria per cc able to liquefy gelatin, very few; number of bacteria per cc when incubated at 100° F., 30, of which 3 were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth and gas in some cases.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Relation of gases. H : CO<sub>2</sub> :: 1 : 2.

Results of special physiological tests: Indol tests, growth and positive test; carbolic acid broth (.09%), positive but slight.

General Remarks: Sewage organisms not evident but overgrown with forms common to wells containing organic matter.

H. L. RUSSELL,

*Consulting Bacteriologist.*

Kewaunee—Biological analysis, February 15, 1900.

The following report is herewith submitted on sample of well water received from Dr. F. J. Olle of Kewaunee, Wis., labeled No. 6. Date of shipment, 2/8; date of arrival, 2/10/8 A. M. Condition on arrival, good. Temperature of water, 43° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 290; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 21; number of bacteria per cc when incubated at 100° F., 205, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth, no gas.

Results of special physiological tests: Indol tests, negative; carbolic broth (.09%), growth.

General Remarks: Bacteria associated with organic decomposition. No evidence of sewage at present.

H. L. RUSSELL,

*Consulting Bacteriologist.*



*Sanitary Analyses of Water.*

## LINCOLN COUNTY.

Merrill—Chemical analysis, May 29, 1900.

The samples of water sent me have been tested with results as follows:

	No. 1.	No. 2.
	Parts per 100,000.	
Total residue .....	10.40	23.10
Mineral residue .....	5.30	9.10
Volatile residue .....	5.10	14.00
Chlorine .....	.800	2.050
Ammonia, saline .....	.088	.0025
Albuminoid ammonia .....	.010	.004
Nitrites .....	.0008	none
Nitrates .....	.060	moderately large amount.

Water No. 1 is badly contaminated, but the contamination, as evidenced by the low chlorine, low nitrites, and high free ammonia, is due to the decomposition of vegetable matter, probably sawdust.

Water No. 2.—As this is said to be from a "drivewell," the high nitrates and high chlorine, with the low ammonias and absence of nitrites, show considerable soil leaching of matter which is probably harmless. It is such a water as I am accustomed to state contains oxidized or past pollution.

(Signed) A. S. MITCHELL,  
*Chemist.*

Merrill City—Biological analysis, September 18, 1900.

The following report is herewith submitted on a sample of Prairie River water received from Dr. L. B. Collier, of Merrill, Wis., labeled tap from city supply. Date of shipment, 9/11, 4:30 P. M.; date of arrival, 9/12/0, 10:30 A. M. Condition on arrival, good; ice in box. Temperature of water 49° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 624; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 75; number of bacteria per cc when incubated at 100° F., 88, of which 17 were acid-producing germs. Re-

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*Sanitary Analyses of Water.*


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sults of fermentation tests: Glucose bouillon, gas produced even where 1 and 2 cc of water were used.

Relation of gases. H: CO<sub>2</sub>: : —: —.

Relation of gases. H: CO<sub>2</sub>: : 2: 1.

Results of special physiological tests: Indol test, positive.

General Remarks: This water shows unquestioned pollution with organic decomposition matter. There has been isolated from the same the colon bacillus, but it is impossible to tell whether these organisms are derived originally from human or animal wastes. Pending a more accurate knowledge of conditions surrounding source of supply, I should regard this water with suspicion.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Merrill—Chemical analysis, September 19, 1900.

The sample of water sent me by Dr. L. B. Collier, Merrill, collected September 11th from tap, analyzed as follows:

	Parts per 100,000.
Total residue . . . . .	14.00
Mineral residue . . . . .	6.60
Volatile residue . . . . .	7.40
Chlorine . . . . .	.400
Ammonia, saline . . . . .	.001
Ammonia, albuminoid . . . . .	.020
Nitrites . . . . .	none
Nitrates . . . . .	.080

The water seems to contain considerable organic matter, but I believe it to be wholesome. Where filtered water contains high chlorine, nitrates, nitrites, free and albuminoid ammonia, from a chemical standpoint such water is polluted, still, if the filtration is perfect, pathogenic bacteria may be entirely absent and the water wholesome, owing to the results of the filtration, but still contain all the chemical elements which cause us to consider it polluted by sewage. Under such circumstances an opinion based upon chemical analysis should carry but light weight.

(Signed) A. S. MITCHELL,  
*Chemist.*

*Sanitary Analyses of Water.*

## MARATHON COUNTY.

Stettin—Biological analysis, November 21, 1898.

The following report is herewith submitted on sample of water from Dr. Paul G. Gebhard, Stettin, Marathon County, Wis. Sample received in good condition; temperature on arrival, 45° F. In this well water were found about 300 bacteria per cc, many of which were liquefiers of gelatin. On litmus lactose agar incubated at blood heat, growth was quite luxuriant but no acid forming colonies were present. Fermentation tests showed gas in moderate quantities in both glucose and lactose bouillon. Indol was produced in Dunham's solution. Special methods used to isolate the colon bacillus showed acid producing and gas forming bacteria present when relatively large quantities of water were used. These organisms belonged to the colon type of bacteria, although they did not agree perfectly with the description of that germ.

From the above data it is evident that the water is not free from suspicion. The presence of fermenting bacteria associated with the decomposition of organic matter is undoubted. It is not so easy to trace this pollution to its proper source. I think that no danger need be apprehended from proximity to cemetery, but there is evidence of organic decomposition that should not occur in a well that is forty-five feet deep in the rock. In case typhoid exists in the immediate neighborhood, I should advise the boiling of the water at any rate, or the substitution of a supply that is above suspicion.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Stettin—Chemical analysis, November 18, 1898.

The sample of water sent by P. G. Gebhard, Stettin, Marathon County, Wis., received November 16, has been analyzed with results as follows:

	Parts per 100,000.
Total residue .....	34.60
Mineral residue .....	21.80
Volatile residue .....	12.80
Chlorine .....	6.250
Saline ammonia .....	.003
Albuminoid ammonia .....	.017
Nitrogen as nitrates .....	very large amount.
Nitrites .....	none

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*Sanitary Analyses of Water.*


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Water darkened considerably upon ignition.

This water shows considerable impurities both organic and oxidized. In the absence of nitrites and the low free ammonia, I would prefer to know whether this is a swamp water, or water from a well, before passing an opinion. In the first case vegetable and extract from sunken logs might account for the organic matter, but it would hardly account for the nitrates and chlorine. The water is at all events exceedingly suspicious.

A. S. MITCHELL,  
*State Chemist.*

Wausau—Biological analysis, June 12, 1899.

The following report is herewith submitted on a sample of tap water received from Dr. L. E. Spencer of Wausau, Wis., labeled No. 1. Date of shipment, 6/6/9; date of arrival, 6/7/11 A. M. Condition on arrival, good; ice in box. Temperature of water, 52° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 200; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 15; number of bacteria per cc when incubated at 100° F., 100, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, slight growth.

Relation of gases. H : CO<sub>2</sub> : : No gas.

Relation of gases. H : CO<sub>2</sub> : : No gas.

Results of special physiological tests: Tests for indol in glucose, free broth, and in Dunham's solution, negative. Parietti's culture medium showed growth with two drops of acid, none with 4, 6, or 8. Organism isolated from Parietti's culture forms acid, but no gas. Where large quantities were used (50 cc), no gas was produced, showing absence of fermentative organisms.

General Remarks: From the bacteriological analysis, there is nothing to indicate any abnormal condition of water. The microscopical analysis will be treated together with the others in a separate report.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*

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Wausau—Biological analysis, June 12, 1899.

The following report is herewith submitted on a sample of tap water received from Dr. L. E. Spencer, of Wausau, Wis., labeled No. 2. Date of shipment, 6/6/9; date of arrival, 6/7/11 A. M. Condition on arrival, good; ice in box. Temperature of water, 52° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 135; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 10; number of bacteria per cc when incubated at 100° F., 75, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, slight growth; glucose bouillon, growth.

Relation of gases. H : CO<sub>2</sub> :: No gas.

Relation of gases. H : CO<sub>2</sub> :: No gas.

Results of special physiological tests: Tests for Indol in both Dunham's solution and glucose—free broth, were all negative with but one exception. In Parietti's solution no growth occurred. In mass cultures (50cc) no gas was produced, although growth occurred.

General Remarks: From a bacteriological point of view, I find no suspicious indication.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Wausau—Biological analysis, June 12, 1899.

The following report is herewith submitted on a sample of tap water received from Dr. L. E. Spencer, of Wausau, Wis., labeled No. 3. Date of shipment, 6/6/9; date of arrival, 6/7/11 A. M. Condition on arrival, good; ice in box. Temperature of water, 52° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 62; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 10; number of bacteria per cc when incubated at 100° F., 1, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth, no gas.

Results of special physiological tests: Indol tests, six made, all negative. Parietti's test, no growth in any culture. Mass culture (50cc) in glucose bouillon, growth but no fermentation.

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*Sanitary Analyses of Water.*


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General Remarks: Bacteriologically, this is a wholesome water. No evidence of fecal or surface pollution.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Wausau—Biological analysis, June 12, 1899.

The following report is herewith submitted on a sample of tap water received from Dr. L. E. Spencer, of Wausau, Wis., labeled No. 4. Date of shipment, 6/6/9; date of arrival, 6/7/11 A. M. Condition on arrival, good; ice in box. Temperature of water, 52° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 467; number of species present, 6; number of bacteria per cc able to liquefy gelatin, 45; number of bacteria per cc when incubated at 100° F., 110, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, slight growth; glucose bouillon, slight growth.

Relation of gases. H : CO<sub>2</sub> :: No gas.

Relation of gases. H : CO<sub>2</sub> :: No gas.

Results of special physiological tests: In glucose, free broth, faint indol reaction was determined; this was lacking in samples incubated in Dunham's solution. In Parietti's culture medium, no growth occurred even with two drops of acid. Mass cultures (50cc) showed growth but no gas.

General Remarks: This water agrees practically with the preceding, in being free from deleterious organisms. The variation in number of bacteria is inevitable and has no sanitary significance in these cases.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

MADISON, June 12, 1900.

U. O. B. WINGATE, M. D., *Secretary,*  
*Milwaukee, Wis.*

DEAR SIR:—Enclosed find bacteriological report on four samples of water from Dr. L. E. Spencer, Wausau, Wis. These samples are taken from different parts of the city supply. From the bacteriological point of view, I find no suspicious condition in the same. The samples, however, show considerable varia-

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*Sanitary Analyses of Water.*

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tion in amount of sediment, and this has led to the belief that the waters were polluted.

In accordance with Dr. Spencer's request, I have submitted the same to a careful microscopical analysis, filtering for this purpose 500 cc of each sample. The results of this microscopical test are as follows:

No. 1. Considerable iron oxid, and detritus, of doubtful origin. In addition to same, numerous filaments of crenothrix polyspora, the common iron fungus, naked, and also ensheathed in iron-rust fragments. No other organisms found.

No. 2. No organisms found; a small amount of reddish detritus, probably of crenothrix origin.

No. 3. Crenothrix found quite abundantly, but not so much as in sample No. 1. No other organisms found.

No. 4. Crenothrix abundant, flakes of iron oxid and some dirt.

These samples all show different stages of the same trouble. They indicate the presence of the so-called iron fungus (*Crenothrix polyspora*), which is not infrequently found in waters that contain iron in solution. This fungus thrives in the dark and therefore finds in the pipes good conditions for its growth. Where it develops luxuriantly, as it is apt to do in waters that naturally contain soluble iron, it often proves quite a pest, filling up the service mains and discoloring the water badly, while at the same time injuring it for domestic purposes.

From a sanitary point of view, the organism is harmless, unless it accumulates in large quantities and dies in the pipes, as it will do where oxygen is not accessible. Such a condition may even impart an undesirable odor to the water.

The trouble occurs particularly in systems where the consumption of water is small; thus on "dead ends" it is particularly marked.

In some cities the difficulty is so pronounced as to necessitate changing source of supply or treating the same so as to remove iron. Where the difficulty is not so marked, copious flushing will improve it temporarily but will not permanently overcome the difficulty because it does not remove the conditions that favor the growth of the fungus.

In answer to Dr. Spencer's inquiry as to the effect of recent rains, I would say that I do not think this trouble is related to same. Of course from a single set of analyses it would be

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*Sanitary Analyses of Water.*


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unwise to draw definite conclusions, but you will doubtless be able to settle the point in question as to the gravity of the trouble arising from this source. I do not think galvanized pipe in any way leads to the condition referred to.

Yours truly,

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Wausau—Chemical analysis June 17, 1899.

The samples of water sent by Dr. L. E. Spencer, Wausau, and analyzed June 9, gave the following results:

	No. 1	No. 2	No. 3	No. 4
				Parts per 100,000.
Total residue . . . . .				9.00
Mineral residue . . . . .				5.80
Volatile residue . . . . .				3.20
Chlorine . . . . .	.175	.200	.175	.150
Ammonia, saline . . . . .	.002	.001	.001	.0015
Ammonia, alb. . . . .	.019	.014	.015	.014
Nitrites . . . . .	none	none	none	faint trace
Nitrates . . . . .	.070	.075	.075	.070

This water is entirely free from sewage contamination, and the bad taste and odor are due to the growth of long vegetable filaments which live upon the iron present in the water.

I happened to be in Wausau last week and made a personal examination of the source of supply and of the clogged pipes, which are causing the trouble. There will probably be less trouble in the smaller pipes if the use of lead in the place of iron is enforced, as the crenothrix fastens itself more readily upon iron and thrives in its presence.

(Signed) A. S. MITCHELL,  
*State Chemist.*

MANITOWOC COUNTY.

Reedsville—Biological analysis June 12, 1899.

The following report is herewith submitted on a sample of well water received from Dr. Louis Falge of Reedsville, Wis., labeled, well water having bad odor. Date of shipment, 6/8/7 A. M.; date of arrival, 6/9/11 A. M. Condition on arrival,



*Sanitary Analyses of Water.*

good; ice in box. Temperature of water, 53° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1,400; number of species present, 3 or 4; number of bacteria per cc able to liquefy gelatin very numerous. Number of bacteria per cc when incubated at 100° F., 420, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth but no gas where ordinary analytical quantities were used. Where large quantities were used fermentation occurred.

Relation of gases. H : CO<sub>2</sub> :: No gas.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Results of special physiological tests: Six tests for indol, one positive, remainder negative. Parietti's test: growth occurred with 2, 4, 6, and 8 drops of acid.

General Remarks: This water shows presence of organic matter, and while the same cannot be said from this analysis to be classed with that of fecal origin, still it indicates a condition that should be looked into as a source of potable supply. The bad odor arising from same also indicates a polluted condition that should receive investigation. The high germ content on gelatin and the presence of many liquefiers also show a similar condition, namely, organic refuse. The source of this cannot be determined from bacterial analysis.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Reedsville—Chemical analysis, June 17, 1899.

The sample of water sent me by Dr. Louis Falge, Reedsville, June 8, from well 35 feet deep, 100 feet from privy, 200 feet from barn, has been analyzed with results as follows:

	Parts per 100,000.
Total residue . . . . .	47.20
Mineral residue . . . . .	31.20
Volatile residue . . . . .	16.00
Chlorine . . . . .	2.350
Ammonia, saline . . . . .	.015
Ammonia, albuminoid . . . . .	.019
Nitrites . . . . .	trace only
Nitrates . . . . .	.250

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*Sanitary Analyses of Water.*

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This water shows considerable contamination, apparently from soil leaching, and I consider it dangerous.

A. S. MITCHELL,  
*State Chemist.*

## MARINETTE COUNTY.

Marinette—Biological analysis, May 12, 1899.

The following report is herewith submitted on a sample of city tap water received from Dr. T. J. Redelings of Marinette, Wis., labeled as above. Date of shipment, 5/8; date of arrival, 5/9/3 P. M. Condition on arrival, good. Temperature of water, 41° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 105; number of species present, 3; number of bacteria per cc able to liquefy gelatin, 20 to 25; number of bacteria per cc when incubated at 100° F., 7, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth.

Relation of gases. H: CO<sub>2</sub>: : no gas.

Results of special physiological tests: Indol tests, negative.

General Remarks: So far as the bacteriological examination is concerned, there is nothing that is suspicious in this sample. It is hardly safe, however, to rely upon a single test like this where a severe typhoid epidemic is raging. If the city sewers empty into the bay, as I understand they do ultimately, I would consider the 1,200 feet distance as insufficient, especially at times when the wind might blow the sewage off shore. The sample submitted shows no evidence of pollution from a biological point of view.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Marinette—Chemical analysis, May 19, 1899.

The sample of water sent by Dr. T. J. Redelings of Marinette, Wis., said to be from the city water during epidemic of typhoid, and which is derived from Green Bay, the intake being 1,200 feet from shore, has been analyzed with results as follows:

*Sanitary Analyses of Water.*

	Parts per 100,000.
Total residue .....	16.30
Mineral residue .....	10.50
Volatile residue .....	5.80
Chlorine .....	.450
Saline ammonia .....	.003
Albuminoid ammonia .....	.019
N. as nitrates .....	.050
N. as nitrites .....	none

For Lake Michigan water this sample shows considerable contamination. The chlorine is nearly double that of the normal Lake Michigan water. The albuminoid ammonia may come from other sources than sewage, but as it distills over rapidly, it probably comes from easily decomposed matter. This, with the chlorine, indicates undoubted contamination.

(Signed) A. S. MITCHELL,  
*State Chemist.*

Marinette—Biological analysis, May 25, 1899.

The following report is herewith submitted on a sample of bay water (No. 13) received from Dr. T. J. Redelings of Marinette, Wis., labeled sewer outfall. Date of shipment, 5/17/9; date of arrival, 5/18/9. Condition on arrival, good. Temperature of water, 50° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 7,300; number of species present, 10; number of bacteria per cc able to liquefy gelatin, 150; number of bacteria per cc when incubated at 100° F., 200, of which 20 were acid-producing germs. Results of fermentation tests: Lactose bouillon, gas produced; glucose bouillon, abundant gas produced.

Relation of gases. H: CO<sub>2</sub>: :—:—.

Relation of gases. H: CO<sub>2</sub>: : 2: 1.

Results of special physiological tests: Parietti's solution showed growth where 2 and 4 drops were added, but none with 6 and 8 drops. Indol was formed in abundance in glucose free broth. Study of organisms separated demonstrated presence of colon bacillus and numerous other fermenting species.

General Remarks: This water shows a highly polluted state, fecal and other fermentative bacteria appearing in large numbers.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*

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Marinette—Biological analysis, May 25, 1899.

The following report is herewith submitted on a sample of bay water received from Dr. T. J. Redelings, Marinette, Wis., labeled "Mouth of river, half way from sewer to intake." Date of shipment, 5/17; date of arrival, 5/18. Condition on arrival, good. Temperature of water, 50° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 2,590; number of species present, 6; number of bacteria per cc able to liquefy gelatin, 67; number of bacteria per cc when incubated at 100° F., 25, of which one-half were acid-producing germs. Results of fermentation tests: Lactose bouillon, gas formed; glucose bouillon, gas produced in abundance.

Relation of gases. H : CO<sub>2</sub> :: 3 : 2.

Relation of gases. H : CO<sub>2</sub> :: 3 : 2.

Results of special physiological tests: Parietti's solution showed growth where 2 and 4 drops were added; none with 6 and 8 drops. Indol produced in glucose free broth; strong fecal odor. Organisms isolated from various cultures showed fecal type quite common. Colon organism isolated from several cultures.

General Remarks: This water also shows a polluted condition, evidences of sewage contamination being frequent, although not as marked as in sample 13.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Marinette—Biological analysis, May 25, 1899.

The following report is herewith submitted on a sample of bay water received from Dr. T. J. Redelings of Marinette, Wis., labeled, "near intake pipe." Date of shipment, 5/17/9; date of arrival, 5/18/9. Condition on arrival, good. Temperature of water, 50° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 207; number of species present, 6; number of bacteria per cc able to liquefy gelatin, 25; number of bacteria per cc when incubated at 100° F., 4, of which 2 were acid-producing germs. Results of fermentation tests: Lactose bouillon, —; glucose bouillon, where 1, 2, and 3 cc were used, no gas; where large quantities of water employed (100cc)

*Sanitary Analyses of Water.*

gas formers sparingly present. Results of special physiological tests: Indol absent in all but one culture; presence in this case doubtful; Parietti's solution, no growth in any case. In mass cultures where 100 cc and 250 cc were used, organisms were isolated that appear to be colon-like in their characters as far as studied. This point will be more definitely determined later.

General Remarks: This water shows a suspicious condition. Where small quantities are used for analysis, the bad condition is not so apparent, but where larger amounts are employed, signs of fecal pollution are more abundant. Under the circumstances, with typhoid epidemic in the city, the supply should unquestionably be boiled to be on the safe side. The spreading evidence of pollution from sewer system is sure to become worse with increase of amount of sewage, and the present supply endangered by floods or wind currents.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Marinette—Chemical analysis, June 2, 1899.

The samples of water sent by Dr. T. J. Redelings of Marinette have been analyzed with results as follows:

No. 1, 20 feet from largest sewer outfall; No. 2, near mouth of river, main channel, half-way between sewer and intake; No. 3, Green Bay, near intake pipe. (Winds favorable for best possible specimen.)

	No. 1	No. 2	No. 3
	Parts per 100,000.		
Total residue . . . . .	18.00	13.70	14.70
Mineral residue . . . . .	8.80	5.80	7.50
Volatile residue . . . . .	9.20	7.90	7.20
Chlorine . . . . .	0.475	.400	.275
Ammonia, saline . . . . .	.0015	.002	.002
Ammonia, albuminoid . . . . .	.050	.036	.0185
N. as nitrites . . . . .	.0003	none	trace
N. as nitrates . . . . .	.010	.015	.010

No. 1 is very highly colored and darkened deeply; No. 2, highly colored and darkened deeply; No. 3, light colored and darkened deeply upon ignition. The variation in the chlorine and nitrates shows much current action, but all samples show much pollution.

(Signed) A. S. MITCHELL,  
*State Chemist,*

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*Sanitary Analyses of Water.*


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Marinette—Biological analysis, June 24, 1899.

The following report is herewith submitted on a sample of water received from Dr. T. J. Redelings of Marinette, Wis., labeled No. 1. Date of shipment, 6/15/9; date of arrival, 6/16/9 at 3 P. M. Condition on arrival, good. Temperature of water, 48° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 115; number of species present, 4; number of bacteria per cc able to liquefy gelatin, 28; number of bacteria per cc when incubated at 100° F., 3, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, where 1 and 3 cc were used, no gas produced; 5 cc of water gave 90%.

H : CO<sub>2</sub> :: 1 : 2.

Results of special physiological tests: Indol produced in two cases out of four. In Parietti's medium growth occurred where 2 and 4 drops were added. From these cultures there was isolated a gas-forming bacillus that belonged to the colon type. In mass cultures copious evolution of gas occurred.

General Remarks: This water shows evidences of pollution, as is indicated by the presence of bacteria of fecal type, as well as other species which are able to form gas and other decomposition products. Without knowing anything of the origin of the water, I should regard it as suspicious for potable purposes.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Marinette—Chemical analysis, June 24, 1899.

The sample of water sent by Dr. T. J. Redelings, Marinette, and marked No. 1, collected June 15, has been examined with results as follows:

	Parts per 100,000.
Total residue . . . . .	14.30
Mineral residue . . . . .	7.90
Volatile residue . . . . .	6.40
Chlorine . . . . .	.300
Ammonia, saline . . . . .	.006
Ammonia, albuminoid . . . . .	.011
Nitrites . . . . .	none
Nitrates . . . . .	.030

(Signed) A. S. MITCHELL,  
*State Chemist.*

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*Sanitary Analyses of Water.*

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## MILWAUKEE COUNTY.

Wauwatosa—Biological analysis, February 2, 1900.

The following report is herewith submitted on a sample of city water received from Dr. John Koerner of Wauwatosa, Wis., labeled, "Tap from Coleman's house." Date of shipment, January 24; date of arrival, January 26. Condition on arrival, ice in box. Temperature of water, 59° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 15; number of species present, 2; number of bacteria per cc able to liquefy gelatin, none; number of bacteria per cc when incubated at 100° F., 2, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, no growth; glucose bouillon, very faint growth. Where large quantities of water were used, growth but no gas.

Results of special physiological tests: Indol tests, no growth in one trial; slight growth in second, negative indol reaction. Parietti's medium, no growth in any solution.

General Remarks: From a bacteriological point of view, this is one of the purest waters I have ever seen, so far as germ growth is concerned. Sediment in water is due to inorganic material, presumably fine clay that is held in suspension.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Wauwatosa—Biological analysis, February 2, 1900.

The following report is herewith submitted on a sample of city water received from Dr. John Koerner of Wauwatosa, Wis., labeled "From city well." Date of shipment, 1/24; date of arrival, 1/26/0. Condition on arrival, ice in box. Temperature of water, 59° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 13; number of species present, 2; number of bacteria per cc able to liquefy gelatin, none; number of bacteria per cc when incubated at 100° F., 2, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, faint growth, no gas.

Results of special physiological tests: Indol tests, uniformly negative; Parietti's medium, no growth in any solution.

General Remarks: This water, from a bacteriological point

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*Sanitary Analyses of Water.*


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of view, is above suspicion. There is practically no difference between two samples in their biological relations.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

North Milwaukee—Biological analysis, September 18, 1900.

The following report is herewith submitted on a sample of well water received from Dr. C. H. Jahn of North Milwaukee, Wis., labeled "Well." Date of shipment, 9/12; date of arrival, 9/13, 3 P. M. Condition on arrival, poor, no ice. Temperature of water 73.5° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 13,500; number of species present, 6; number of bacteria per cc able to liquefy gelatin, 400 to 500; number of bacteria per cc when incubated at 100° F., thousands, of which many were acid-producing germs. Results of fermentation tests: Glucose bouillon, gas in abundance in all cases.

Relation of gases. H: CO<sub>2</sub>: :—: —.

Relation of gases. H: CO<sub>2</sub>: : 2: 1.

Results of special physiological tests: Indol tests, positive in all cases.

General Remarks: The high germ content in this water may be attributable to the fact that no precautions were taken to keep water at low temperature; but, allowing for this, the presence of fermentative bacteria belonging to the type associated with the decomposition of fecal material renders the same suspicious in any event.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

MONROE COUNTY.

Tomah—Biological analysis, May 27, 1899.

The following report is herewith submitted on a sample of tap water received from Dr. H. B. Johnson of Tomah, Wis., labeled, "Tap." Date of shipment, 5/23; date of arrival, 5/24. Condition on arrival, good. Temperature of water, 57° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 33; number of species present, 3; number of bacteria per



*Sanitary Analyses of Water.*

cc able to liquefy gelatin, 8; number of bacteria per cc when incubated at 100° F., 13, of which one or two were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth, slight.

Relation of gases. H: CO<sub>2</sub>: : no gas.

Relation of gases. H: CO<sub>2</sub>: : no gas.

Results of special physiological tests: In glucose free broth growth was abundant, but no indol was produced. In Parietti's solution growth occurred in solution containing one to three drops, but none in five, seven or nine drops. In mass cultures in glucose bouillon where 50 cc were used, no evidence of fermentation occurred.

General Remarks: The water is low in germ content as to numbers and as to species (and more particularly those associated with fecal matter); the conditions are not suspicious. Even where considerable quantities are used in analysis, nothing is apparent from a bacteriological point of view that is against the wholesomeness of the water as indicated by the sample sent.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Tomah—Chemical analysis, May 26, 1899.

The sample of water sent by Dr. H. B. Johnson from Tomah, marked "Tap," collected May 23, source unknown, has been analyzed with results as follows:

	Parts per 100,000.
Total residue .....	9.80
Mineral residue .....	6.20
Volatile residue .....	6.30
Chlorine . . . . .	3.25
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.006
Nitrites . . . . .	.0000
Nitrates .....	moderate amount

This water did not darken or emit odor upon ignition. From a chemical standpoint, this water must be considered pure.

(Signed) A. S. MITCHELL,  
*State Chemist,*

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*Sanitary Analyses of Water.*


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## OUTAGAMIE COUNTY.

Kaukauna—Biological analysis, June 13, 1900.

The following report is herewith submitted on a sample of well water received from Dr. C. D. Boyd, of Kaukauna, Wis. Date of shipment, 6/7; date of arrival, 6/8 3 P. M. Condition on arrival, fair; shipped in jug. Temperature of water, 64° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 119; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 20; number of bacteria per cc when incubated at 100° F., 27, of which one was acid-producing. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, gas produced where large quantities of water were used; none with 1 cc.

Relation of gases. H : CO<sub>2</sub> :: 1 : 1.

Relation of gases. H : CO<sub>2</sub> :: 1 : 1.

Results of special physiological tests: Indol test, negative.

General Remarks: From a bacteriological point of view there is nothing in this water that is suspicious. There was also received a sample of deposit claimed to have been taken from this well. A microscopic examination of the same shows it to contain a considerable quantity of organic detritus, among which cotton and woolen fibres are very numerous.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

## POLK COUNTY.

Amery—Biological analysis, June 30, 1899.

The following report is herewith submitted on a sample of well water received from Dr. H. A. Holliday of Amery, Polk Co., Wis. Date of shipment, 1/20/99; date of arrival, 1/23/99. Condition on arrival, no ice. Temperature of water, 46° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 60° F., 345; number of species present, 3; number of bacteria per cc able to liquefy gelatin, few (6-10); number of bacteria per cc when incubated at 100° F., 110, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, growth in closed arm, but no gas produced.

*Sanitary Analyses of Water.*

Results of special physiological tests: No indol was formed when water was incubated in Dunham's solution. In mass cultures in which 50 cc of water were used, growth occurred, but no gas was produced. Cultures made in carbolie acid broth (Parietti's solution) to isolate the colon bacillus were negative.

General Remarks: The numerical germ content of this water is probably higher than it normally is for the reason that the sample was so long in transit. The physiological tests do not in any way indicate the presence of organisms that are not normally found in good well waters. So far as the bacteriological analysis is concerned, I find no evidence of sewage pollution that would account for the outbreak of typhoid reported.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

## PORTAGE COUNTY.

Stevens Point—Bacteriological analysis, June 28, 1900.

The following report is herewith submitted on a sample of city tap water received from Dr. C. von Neupert of Stevens Point, Wis., labeled "Engine House, South Side." Date of shipment, 6/21; date of arrival, 6/22 3 P. M. Condition on arrival, good. Temperature of water, 53° F. Number of bacteria per cc (cubic centimeter which is approximately 20 drops) on nutrient gelatin grown at —° F., not ascertained because of melting of plates. Number of bacteria per cc when incubated at 100° F., 25, of which 2 were acid-producing germs. Results of fermentation tests: Glucose bouillon, small amounts of gas formed.

Relation of gases. H: CO<sub>2</sub>: :—: —.

Relation of gases. H: CO<sub>2</sub>: : 2: 1.

Results of special physiological tests: Indol test, very strong test for indol with fecal odor apparent. Carbolie gelatin, practically no growth.

General Remarks: From a bacteriological standpoint this water shows no bad symptoms. The indol-forming bacteria are evidently not colon organisms as shown by small amounts of gas produced. It is quite probable that these fermentative bac-

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*Sanitary Analyses of Water.*

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teria that normally are not present in artesian water come from the particles of organic matter left in the pipes when the same are used for pumping river water, as is done in case of fires.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Stevens Point—Bacteriological analysis, June 28, 1900.

The following report is herewith submitted on a sample of city tap water received from Dr. C. von Neupert of Stevens Point, Wis., labeled "Tap at State Normal School." Date of shipment, 6/21; date of arrival, 6/22 3 P. M. Condition on arrival, good. Temperature of water, 53° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., impossible to ascertain number owing to melting of gelatin plates because of excessively hot weather. Number of bacteria per cc when incubated at 100° F., 23, of which 3 were acid-producing germs. Results of fermentation tests: Glucose bouillon, growth with about 50% gas.

Relation of gases. H: CO<sub>2</sub>: :—:—.

Relation of gases. H: CO<sub>2</sub>: : 2: 1.

Results of special physiological tests: Indol tests gave very strong reaction for indol with fecal odor to cultures. Cultures on carbolized gelatin showed a copious growth.

General Remarks: This sample of water does not appear to be as good as No. 2, a condition which ought not to obtain so long as they are from the same source. The gas producing bacteria appear to belong to the fermentative class that includes the fecal organism, bacillus coli communis, but these organisms are not numerous. Nothing abnormal in taste could be detected in water.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Stevens Point—Chemical analysis, July 3, 1900.

Two samples of water have been sent me, evidently by the health officer at Stevens Point, marked "City water, Stevens Point, No. 1 and No. 2," with results as follows:

*Sanitary Analyses of Water.*

	Parts per 100,000.	
	No. 1.	No. 2.
Total residue .....	8.80	9.10
Mineral residue .....	4.00	4.60
Volatile residue .....	4.80	4.50
Chlorine . . . . .	.100	.125
Saline ammonia .....	.0015	.008
Albuminoid ammonia .....	.0185	.026
Nitrites . . . . .	none	none
Nitrates . . . . .	.020	.020

Water No. 1 was quite brownish in color and blackened somewhat upon ignition. No. 2 was slightly brownish and blackened less. Both of these samples showed unusually high albuminoid ammonia and brownish color indicating dissolved vegetable matter. The chlorine, absence of nitrites and low nitrates indicate almost entire freedom from sewage contamination.

(Signed) A. S. MITCHELL,  
*Chemist.*

Stevens Point City—Bacteriological analysis, July 25, 1900.

The following report is herewith submitted on a sample of tap water received from Dr. C. von Neupert of Stevens Point, Wis., labeled "Tap from Taylor Bros.' store." Date of shipment, 7/17/0; date of arrival, 7/18/0. Condition on arrival, good. Temperature of water, 50° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 300; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 40; number of bacteria per cc when incubated at 100° F., 106, of which very few were acid-producing germs. Results of fermentation tests: Glucose bouillon, gas produced in all cases where 1, 2, and 25 cc water were used.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Relation of gases. H : CO<sub>2</sub> :: 1½ : 1.

Results of special physiological tests: Indol cultures showed presence of this decomposition product. Several of the more prevalent gas-producing bacteria were isolated and studied. None of these were found to be fecal forms, although representatives of the fermentative bacteria associated with decay were frequently found.

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*Sanitary Analyses of Water.*


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General Remarks: The color of this water shows that the process of filtration is inefficient if it is derived from the artesian wells. The water presents all of the characters of a surface running water such as would come if river water was directly used. While no fecal bacteria were found, there is abundant evidence of bacteria associated with the decomposition of organic matter. This water cannot be compared in quality with water that is normally to be found in a good artesian well.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Stevens Point City—Chemical analysis, July 21, 1900.

The sample of water sent me, taken from the tap at Taylor Bros.' Drug Store, Stevens Point, Wis., collected by C. von Neupert, M. D., of Stevens Point, July 17, has been tested with results as follows:

	Parts per 100,000.
Total solids .....	10.10
Mineral solids .....	5.00
Volatile solids .....	5.10
Saline ammonia .....	.0015
Albuminoid ammonia .....	.034
Chlorine .....	.125
Nitrites .....	none
Nitrates .....	.030

This water had quite a high color, equal to about two degrees, and upon ignition the solids gave a woody smell. It is my opinion that this water is entirely free from sewage contamination, and that the high amount of organic matter is of vegetable origin, probably from logs. I am confident that the water is wholesome.

(Signed) A. S. MITCHELL,  
*Chemist.*

ROCK COUNTY.

Beloit—Chemical analysis, June 8, 1900.

The sample of water sent me by J. Buckeridge, Health Officer, Beloit, without description in cork stoppered bottle, has been examined with results as follows:

*Sanitary Analyses of Water.*

	Parts per 100,000.
Total solids .....	29.40
Mineral residue .....	21.80
Volatile matter .....	7.60
Chlorine .....	.275
Saline ammonia .....	none
Albuminoid ammonia .....	.008
Nitrites .....	.0007
Nitrates .....	moderate amount

The quantity of organic matter in this water is exceedingly small but the presence of such relatively large amounts of nitrites indicate sewage contamination.

(Signed) A. S. MITCHELL,  
*Chemist.*

## ST. CROIX COUNTY.

New Richmond—Biological analysis, August 7, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. W. Epley, of New Richmond, Wis., labeled well No. 1; date of shipment 7/26; date of arrival 7/27; condition on arrival, fair; temperature of water, 68° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 147; number of species present, 4; number of bacteria per cc able to liquefy gelatin 25; number of bacteria per cc when incubated at 100° F., 10, of which none were acid-producing germs.

Results of fermentation tests: Glucose bouillon, growth, but no gas except in one culture.

Results of special physiological tests: Tests for indol negative.

General Remarks: From a bacteriological point of view, this is the best water in the series. In fact, it is the only one that is not suspicious.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Richmond—Biological analysis, August 7, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. W. Epley, of New Richmond,

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*Sanitary Analyses of Water.*


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Wis., labeled well No. 3; date of shipment 7/26; date of arrival 7/27; condition on arrival, fair; temperature of water, 68° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 8,800; number of species present, 7; number of bacteria per cc able to liquefy gelatin, 400; number of bacteria per cc when incubated at 100° F., 175, of which 74 were acid-producing germs.

Results of fermentation tests: Lactose bouillon positive; glucose bouillon positive, 38% gas.

Relation of gases. H : CO<sub>2</sub> :: — : —

Relation of gases. H : CO<sub>2</sub> :: 24 : 14

Results of special physiological tests:

1 cc water positive.

1 cc water positive.

Isolated from the water a gas-forming organism of the putrefactive type forming 38% gas with a gas formula of H : CO<sub>2</sub> :: 25 : 13.

General Remarks: This water has a high numerical germ content; also contains bacteria of the putrefactive class. Should consider it suspicious until this condition could be explained.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Richmond.—Biological analysis, Aug. 7, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. W. Epley, of New Richmond, Wis., labeled well No. 4; date of shipment 7/26; date of arrival 7/27; condition on arrival, fair; temperature of water 68° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 65,000; number of species present, 5; number of bacteria per cc able to liquefy gelatin, hundreds; number of bacteria per cc when incubated at 100° F., 60, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon positive; glucose bouillon 50-90% gas produced.

Relation of gases. H : CO<sub>2</sub> :: — : —

Relation of gases. H : CO<sub>2</sub> :: 57 : 33



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*Sanitary Analyses of Water.*

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Results of special physiological tests: Indol tests in duplicate, positive with 1 cc of water; putrefactive bacteria isolated in pure culture.

General Remarks: Conditions favorable for decomposition of organic matter not demonstrable from analysis.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Richmond.—Biological analysis, August 7, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. W. Epley, of New Richmond, Wis., labeled well No. 5; date of shipment 7/26; date of arrival 7/27; condition on arrival, fair; temperature of water 68° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 11,250; number of species present, 5; number of bacteria per cc able to liquefy gelatin 150; number of bacteria per cc when incubated at 100° F., 125, of which 25 were acid-producing germs.

Results of fermentation tests: Lactose bouillon positive; glucose bouillon positive with 1 cc water.

Relation of gases. H : CO<sub>2</sub> : : 2 : 1.

Relation of gases. H : CO<sub>2</sub> : : 2 : 1.

Results of special physiological tests: Indol tests in duplicate, positive with 1 cc.

General Remarks: Gas bacteria abundant, high germ content, strong possibility of bacillus coli communis being present as judged by fermentation tests; worst water of the series from bacterial point of view.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

New Richmond.—Biological analysis, August 7, 1899.

The following report is herewith submitted on a sample of well water received from Dr. F. W. Epley, of New Richmond, Wis., labeled well No. 6; date of shipment 7/26; date of arrival 7/27; condition on arrival, fair; temperature of water 68° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 27,000; number of species present, 6; number of bacteria

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*Sanitary Analyses of Water.*


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per cc able to liquefy gelatin 200; number of bacteria per cc when incubated at 100° F., 275, of which 20 were acid-producing germs.

Results of fermentation tests: Lactose bouillon positive; glucose bouillon positive.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1

Relation of gases. H : CO<sub>2</sub> :: 2 : 1

Results of special physiological tests: Indol tests, positive with 1 cc; proteus bacteria isolated from this sample.

General Remarks: Putrefactive processes going on in this water in a marked degree; too high a germ content; should be regarded as suspicious.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

SAUK COUNTY.

Baraboo.—Biological analysis, June 1, 1899.

The following report is herewith submitted on a sample of well water received from Dr. Charles Gorst, of Baraboo, Wis., labeled No. 1; date of shipment 5/23; date of arrival 5/24; condition on arrival, good; temperature of water 40° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 2,400; number of species present, 4; number of bacteria per cc able to liquefy gelatin 40; number of bacteria per cc when incubated at 100° F., 3, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon growth; glucose bouillon, copious growth; gas in some cultures; others not.

Results of special physiological tests: Parietti's test; growth in bouillon to which two drops of acid had been added; none where 4, 6 or 8 had been added. Four tests made for indol with 1 cc of water; indol present in one case; negative results in other three samples. Special tests where larger quantities of water are used show that gas-forming bacteria are to be isolated from the same, although these forms are not apparently related to the fecal organisms.

General Remarks: The germ content of this water is too high, but it may be due to the fact that it is a spring water

*Sanitary Analyses of Water.*

which has been held in a reservoir where multiplication of bacteria always takes place luxuriantly; the gas-forming species found are evidently not of colon character, but are such as are generally in surface waters that may have come in contact with organic matter.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Baraboo.—Biological analysis, June 1, 1899.

The following report is herewith submitted on a sample of tap of the general supply water received from Dr. Chas. Gorst, of Baraboo, Wis., labeled No. 2; date of shipment 5/23; date of arrival 5/24; condition on arrival, good; temperature of water 40° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 722; number of species present, 4; number of bacteria per cc able to liquefy gelatin 15; number of bacteria per cc when incubated at 100° F., 3, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon growth; glucose bouillon growth; 33% gas.

Relation of gases. H : CO<sub>2</sub> :: — : —

Relation of gases. H : CO<sub>2</sub> :: 1½ : 1

Results of special physiological tests: In Parietti's test, growth occurred in bouillon where 2, 4, 6 and 8 drops of acid were added. Four tests made for indol gave positive results in one case, negative in other three. From a number of different cultures gas-forming bacteria were isolated but these proved to be of a fermentative type somewhat different from bacillus coli communis, the fecal organisms.

General Remarks: This water shows a rather high germ content in numbers, and the character of the same as revealed by the separate species studied shows that organisms associated with the decomposition of organic matter are quite prevalent. Whether this is wholly undesirable or not will depend upon nature of this matter, a point which can only be determined by taking all the surroundings into consideration.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

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*Sanitary Analyses of Water.*


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Baraboo.—Chemical analysis, June 1, 1899.

The samples of water sent by Dr. Chas. Gorst, Health Officer, Baraboo, have been analyzed with results as follows:

	Parts per 100,000.	
	No. 1.	No. 2.
Total residue .....	31.10	31.30
Mineral residue .....	24.10	23.20
Volatile residue .....	7.00	8.10
Chlorine .....	.250	.225
Ammonia saline .....	.006	.001
Ammonia albuminoid .....	.009	.002
N. as nitrites .....	.0001	faint trace
N. as nitrates .....	.150	.050

Water No. 1 shows considerably more organic matter than No. 2, but insufficient to warrant condemnation from a chemical standpoint. The chlorines are unusually low in both waters, indicating comparative freedom from sewage.

A. S. MITCHELL,  
*State Chemist.*

SHEBOYGAN COUNTY.

Sheboygan—Biological analysis, January 2, 1899.

The following report is herewith submitted on a sample of ice received from Dr. O. H. Arndt, of Sheboygan, Wis., labeled ice; date of shipment, Dec. 27, '98; date of arrival, Dec. 29, '98; condition on arrival, good; temperature of ice 32° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 60° F., 60; number of species present, 1; number of bacteria per cc able to liquefy gelatin none. Number of bacteria per cc when incubated at 100° F., none.

Results of fermentation tests: Lactose bouillon, growth but no gas; glucose bouillon, growth but no gas.

Results of special physiological tests: By using 100 cc of water in glucose broth, a copious growth was produced and gas was evolved in considerable quantities. This form, however, proved to be purely a fermentative organism and not necessarily allied to sewage group.

General Remarks: From the above analytical data, I do not think that the ice shows any contamination from the sewage

*Sanitary Analyses of Water.*

that is reported, I should, however, regard it as unwise to cut ice so close to an emptying sewer even though this analysis did not indicate a serious degree of pollution.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Sheboygan.—Biological analysis, April 2, 1900.

The following report is herewith submitted on a sample of city supply water received from Dr. O. H. Arndt, of Sheboygan, Wis., labeled tap; date of shipment 3/28/0; date of arrival 3/29/11 A. M.; condition on arrival, good; temperature of water 40° F.; number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 3,500 estimated; number of species present, 6-7; number of bacteria per cc able to liquefy gelatin, large proportion; number of bacteria per cc when incubated at 100° F., 600, of which several were acid-producing germs.

Results of fermentation tests: Lactose bouillon 100% gas; glucose bouillon 100% gas in 24 hours in cultures with 2 cc and 25 cc.

Relation of gases. H : CO<sub>2</sub> :: 40 : 50

Relation of gases. H : CO<sub>2</sub> :: 45 : 45

Results of special physiological tests: Indol test, present where 1 cc water was used; carbohic acid gelatin, abundant growth.

General Remarks: This water shows marked pollution with organic matter; a bad condition for a supply derived from Lake Michigan.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Sheboygan.—Chemical analysis, March 31, 1900.

The sample of city water from "tap" at Sheboygan, taken by Dr. Arndt, March 28, tested as follows:

	Parts per 100,000.
Total residue .....	16.40
Mineral residue .....	11.60
Volatile residue .....	4.80
Chlorine .....	.300 (quite low)
Nitrates .....	.045

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*Sanitary Analyses of Water.*


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	Parts per 100,000.
Nitrites .....	none
Sal. Ammonia .....	.002
Alb. Ammonia .....	.012

If the supply (not stated) is "subsoil" water it is suspicious; if Lake Michigan water it is comparatively pure; (it seems to be lake water.)

A. S. MITCHELL,  
*State Chemist.*

## TAYLOR COUNTY.

Medford.—Biological analysis, August 14, 1899.

The following report is herewith submitted on a sample of river water received from Dr. Eugene LaSage of Medford, Wis., labeled "No. 1, below city sewer." Date of shipment, 8/8/9; date of arrival, 9 A. M., 8/10. Condition on arrival, good; ice in box. Temperature of water, 66° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 150,000, est. Number of species present, numerous; number of bacteria per cc able to liquefy gelatin, large number; number of bacteria per cc when incubated at 100° F., several thousand, of which many were acid-producing germs. Results of fermentation tests: Lactose bouillon, positive; glucose bouillon, positive in all tests.

Relation of gases. H: CO<sub>2</sub>: : —: —.

Relation of gases. H: CO<sub>2</sub>: : 2: 1.

Results of special physiological tests: Indol produced when 1 cc of water was used.

General Remarks: This water shows a highly polluted condition and is unfit for human use.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Medford—Biological analysis, August 14, 1899.

The following report is herewith submitted on a sample of river water received from Dr. Eugene LaSage of Medford, Wis., labeled "No. 2, below tannery." Date of shipment, 8/8/9; date of arrival, 8/10, 9 A. M. Condition on arrival, good; ice in box. Temperature of water, 66° F. Number of bacteria

*Sanitary Analyses of Water.*

per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 300,000, est.; number of species present, numerous; number of bacteria per cc able to liquefy gelatin, thousands; number of bacteria per cc when incubated at 100° F., 800 to 900, of which many were acid-producing germs. Results of fermentation tests: Lactose bouillon positive; glucose bouillon, positive in all cases.

Relation of gases. H : CO<sub>2</sub> :: — : —.

Relation of gases. H : CO<sub>2</sub> :: 2 : 1.

Results of special physiological tests: Indol tests, positive with 1 cc.

General remarks: This water also shows a state of pollution that renders it totally unfit for human use.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Medford—Chemical analysis, August 18, 1899.

The water sample sent from Medford by E. LaSage, M. D., "No. 1, 400 feet below sewer inlet," "No. 2, taken below tannery":

	Parts per 100,000.	
	No. 1	No. 2
Total residue .....	13.30	17.70
Mineral residue .....	7.00	9.90
Volatile residue .....	6.30	7.80
Chlorine .....	.650	2.050
Ammonia, saline .....	.021	.182
Ammonia, albuminoid .....	.023	.066
Nitrogen as Nitrites .....	.0008	none
Nitrogen as Nitrates .....	.040	.035

No. 1 shows considerable sewage and is not fit to drink. No. 2 is very badly contaminated, and wholly unoxidized. It is certainly dangerous.

A. S. MITCHELL,  
*State Chemist.*

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*Sanitary Analyses of Water.*


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## TREMPEALEAU.

Arcadia—Biological analysis, April 22, 1899.

The following report is herewith submitted on a sample of well water received from Dr. Emil Maurer of Arcadia, Wis., labeled "Well water, 35 feet deep." Date of shipment, 4/19; date of arrival, 4/20, 11 A. M. Condition on arrival, good. Temperature of water, 59° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 60; number of species present, 3; number of bacteria per cc able to liquefy gelatin, few (5-8); number of bacteria per cc when incubated at 100° F., 12, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth. When 50 cc of water were used, 50% gas was produced.

Relation of gases. H : CO<sub>2</sub> : : no gas.

Relation of gases. H : CO<sub>2</sub> : : no gas.

Results of special physiological tests: HCO<sub>2</sub> = 3/2 Dunham's solution, growth but no indol.

General Remarks: When the ordinary amounts of water are used for analysis, the same shows no abnormal signs. Where large quantities are used, gas-producing germs are found to be present, but a study of this organism shows that it is not the colon bacillus, but is a type that is found in old wells that have been used for a long time. The low germ content (60 per cc) shows a normal condition. From a biological examination I do not find evidences of sewage pollution.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

## VILAS COUNTY.

Arbor Vitae—Biological analysis, October 19, 1898.

The following report is herewith submitted on a sample of water from a driven well received from Dr. A. B. Rosenberry of Arbor Vitae, Wis., on October 13th. Ice in package melted on arrival, but temperature was 52° F. Number of bacteria per cc 60; on lactose agar grown at body temperature, 45, no acid colonies. In glucose and lactose fermentation tube, only slight growth, but no gas. In Dunham's solution no indol formed; in Hess medium, no growth.



*Sanitary Analyses of Water.*

From the above data I find that the sample shows no suspicious symptoms, and I would regard it as a wholesome water for potable purposes so far as its biological character was concerned.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Arbor Vitae—Chemical analysis, October 28, 1898.

The sample of water sent from Arbor Vitae by H. B. Rosenberg, Health Officer, "Driven well, 100 feet from outhouse," collected October 13, has been tested with results as follows:

	Parts per 100,000.
Total residue .....	12.20
Mineral residue .....	16.60
Volatile residue .....	6.60
Chlorine .....	1.050
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.006
Nitrites .....	.0000
Nitrates ..	.140

While the ammonias are low in this water, still the large amount of chlorine and nitrates is sufficient to characterize the water as suspicious. I should, however, hesitate to condemn it on this analysis. I think it quite likely, as these waters have stood in the laboratory for ten days or more, while I was in the East, that the nitrates which were possibly present originally have since become oxidized.

A. S. MITCHELL,  
*State Chemist.*

## WALWORTH COUNTY.

Delavan.—Biological analysis, March 21, 1900.

The following report is herewith submitted on a sample of city water received from Dr. C. C. Blanchard of Delavan, Wis., labeled "Springs collected in reservoir." Date of shipment, 3/13/0; date of arrival, 3/14/0. Condition on arrival, good. Temperature of water, 46° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 195; number of species present,

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*Sanitary Analyses of Water.*


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3; number of bacteria per cc able to liquefy gelatin, 7; number of bacteria per cc when incubated at 100° F., 14, of which none were acid-producing germs. Results of fermentation tests: Lactose bouillon, no gas; glucose bouillon, no gas except when large quantities of water were used.

Results of special physiological tests: Indol tests, negative; carbolic acid gelatin, 5 colonies per cc.

General Remarks: Water shows no suspicious condition from bacteriological standpoint.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Delavan—Chemical analysis, March 23, 1900.

I herewith report upon the sample of water sent by Dr. C. C. Blanchard of Delavan, taken from the drug store hydrant, water being from reservoir supplied from springs. Three or four outhouses are within ten or fifteen rods of the reservoir.

	Parts per 100,000.
Total residue .....	46.00
Mineral residue .....	31.50
Volatile residue .....	14.50
Chlorine .....	1.250
Ammonia, saline .....	.003
Ammonia, albuminoid .....	.004
Nitrites .....	none
Nitrates .....	large amount

The residue did not darken upon ignition. This water shows considerable mineral pollution or "past pollution," and enough organic matter to class it as suspicious.

A. S. MITCHELL,  
*State Chemist.*

WASHINGTON COUNTY.

West Bend.—Biological analysis, December 18, 1899.

The following report is herewith submitted on a sample of well water received from Dr. D. W. Lynch of West Bend, Wis., labeled "Well 60 feet deep." Date of shipment, 12/11; date of arrival, 12/12, 12 M. Condition on arrival, good. Temperature of water, 43° F. Number of bacteria per cc (cubic

*Sanitary Analyses of Water.*

centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 105; number of species present, 3; number of bacteria per cc able to liquefy gelatin, 6 to 8. Growth on gelatin was peculiar in that it took five days before colonies were visible. Number of bacteria per cc when incubated at 100° F., 13, of which 3 were acid-producing germs. Results of fermentation tests: Lactose bouillon, growth; glucose bouillon, growth, but no gas.

Results of special physiological tests: Indol tests, slight positive test, but no fecal odor. Cultures in carbolie acid broth: Luxuriant growth in .005; none in .01 or .015% acid. Special cultures made of acid-producing organisms showed no development of gas.

General Remarks: Water shows no suspicious indication whatever.

H. I. RUSSELL,  
*Consulting Bacteriologist.*

West Bend—Chemical analysis, December 15, 1899.

The sample of water sent by Dr. D. W. Lynch, West Bend, Wis., said to be from drilled well 60 feet deep, typhoid on premises, tested as follows:

	Parts per 100,000.
Total residue . . . . .	38.50
Mineral residue . . . . .	26.20
Volatile residue . . . . .	12.30
Chlorine . . . . .	.175
Ammonia, saline . . . . .	.001
Ammonia, albuminoid . . . . .	.007
Nitrates . . . . .	.040
Nitrites . . . . .	none

From a chemical standpoint this water does not seem to be polluted.

A. S. MITCHELL,  
*State Chemist.*

WAUPACA COUNTY.

Waupaca—Biological analysis, December 3, 1898.

I have the following report to submit on two samples of water received from Dr. L. H. Pelton of Waupaca, Wis., on November 30. Samples came without ice, but temperature of same

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*Sanitary Analyses of Water.*

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was 52° F. No. 1, from well in school yard, showed a very low germ content, 15-20 bacteria per cc on nutrient gelatin at room temperature. No growth occurred when water was incubated at blood heat. In fermentation tests in glucose and lactose bouillon no growth was evident, nor did any development take place in Dunham's solution. Biologically, the growth was practically nil. In fact, so slight a development in a well water shipped without ice leads me to suspect that the bottle might not have been thoroughly cleaned. I think it would be well to ascertain whether the receiver had been used for acids or not.

Regarding sample No. 2, which is from the tap supply, I would say that the number of organisms growing on gelatin were 2,000-2,200. This large number is undoubtedly due to the fact that no ice was placed in box when same was shipped. On litmus agar at blood heat abundant growth occurred, but no acid-forming colonies. In fermentation tests no gas was produced. A very faint indol reaction was obtained in Dunham's solution.

The above analytical data show that water No. 2 contains nothing that is especially deleterious. The copious amount of bacterial life in gelatin being due to the condition of the sample. Neither of the waters are under suspicion from the biological results.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

## WAUKESHA COUNTY.

Oconomowoc—Biological analysis, September 4, 1900.

The following report is herewith submitted on a sample of artesian well water received from Dr. Thos. Miller of Oconomowoc, Wis., labeled "Artesian City Well." Date of shipment, 8/25; date of arrival, 8/28/0. Condition on arrival, ice in box. Temperature of water, 60° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 4,760; number of species present, 5; number of bacteria per cc able to liquefy gelatin, few; number of bacteria per cc when incubated at 100° F., 200, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, some gas formed occasionally.

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*Sanitary Analyses of Water.*


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Results of special physiological tests: Indol test, positive.

General Remarks: This water is evidently satisfactory. The high germ content is abnormal for an artesian water, but this character of organisms found shows same not to be related to those of sewage origin.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Oconomowoc—Biological analysis, September 4, 1900.

The following report is herewith submitted on a sample of well water received from Dr. Thos. Miller of Oconomowoc, Wis., labeled "Fifteen-foot well." Date of shipment, 8/25; date of arrival, 8/28/0. Condition on arrival, ice. Temperature of water, 60° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 1,760; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 85; number of bacteria per cc when incubated at 100° F., 87, of which none were acid-producing germs. Results of fermentation tests: Glucose bouillon, but little gas.

Relation of gases. H: CO<sub>2</sub>: : —: —.

Relation of gases. H: CO<sub>2</sub>: : 1: 2.

Results of special physiological tests: Indol tests, negative.

General Remarks: Bacteriological analysis as to number of organisms per cc probably affected by same conditions as in No. 76 and 77. Character of bacteria in water shows no relation to sewage type of bacteria.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Oconomowoc—Biological analysis, September 4, 1900.

The following report is herewith submitted on a sample of city water received from Dr. Thos. Miller of Oconomowoc, Wis., labeled "Dead end pipe." Date of shipment, 8/25; date of arrival, 8/28/0. Condition on arrival, ice. Temperature of water, 60° F. Number of bacteria per cc (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 33,250; number of species present, 4; number of bacteria per cc able to liquefy gelatin, few; number of bacteria per cc when incubated at 100° F., 5,000, of which none were acid-

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*Sanitary Analyses of Water.*


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producing germs. Results of fermentation tests: Glucose bouillon, gas produced quite abundantly.

Relation of gases. H: CO<sub>2</sub>: : —: —.

Relation of gases. H: CO<sub>2</sub>: : 1: 2.

Results of special physiological tests: Indol tests, negative.

General Remarks: This water shows an enormous bacterial content, but the character of the same indicates that they belong to the harmless water bacteria. The condition is such as might be produced by allowing the water to stand for a few days before cultures were made. It appears from the data forwarded with sample that collection was made on the 25th. As ice in box was not all melted, it must be that same was held for some time before shipment, which condition would account for high germ content.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Oconomowoc—Chemical analysis, September 7, 1900.

Results of chemical examination, No. 1, from artesian well, and No. 3, well near bank, are as follows:

	No. 1	No. 3
Total residue .....	32.00	67.20
Mineral residue .....	22.00	50.70
Volatile residue .....	10.00	16.50
Chlorine .....	.175	5.700
Ammonia, saline .....	.0005	.112
Ammonia, albuminoid .....	.0025	.017
Nitrites .....	(.0020 high)	.0003
Nitrates .....	.020	very high

These samples have stood so long that nitrites must be ignored and some "alb." ammonia may have changed to "saline" in No. 3. But the results are positive. No. 3 is badly polluted and No. 1 pure if nitrites are ignored.

(Signed) A. S. MITCHELL,  
*Chemist.*

Oconomowoc.—Chemical analysis, September 8, 1900.

Sample No. 2 sent from Oconomowoc, marked "Dead end of Main," contained:

*Sanitary Analyses of Water.*

	Parts per 100,000
Total residue .....	32.80
Mineral residue .....	22.40
Volatile residue .....	10.40
Chlorine .....	.150
Saline ammonia .....	.0005
Albuminoid ammonia .....	.003
Nitrates .....	.020
Nitrites .....	.0015

The high nitrites were due to the long standing of this sample, and I should consider this water wholesome.

(Signed) A. S. MITCHELL,  
*Chemist.*

Waukesha.—Biological analysis, May 29, 1900.

The following report is herewith submitted on a sample of spring water received from Dr. G. Harkness, of Waukesha, Wis., labeled, Plymouth Rock spring; date of shipment 5/24/0; date of arrival 5/25/11 A. M.; condition on arrival, good; temperature of water 60° F.; number of bacteria per c. c. (cubic centimeter, which is approximately 20 drops) on nutrient gelatin grown at 65° F., 475; number of species present, 5; number of bacteria per cc able to liquefy gelatin, 50; number of bacteria when incubated at 100° F., 9, of which none were acid-producing germs.

Results of fermentation tests: Lactose bouillon, no gas; glucose bouillon, no gas.

Results of special physiological tests: Indol tests, negative.

General Remarks: This appears to be similar to an average spring water biologically. It has quite a large number of bacteria per c. c., but this is due to contact with upper soil layers that are rich in microorganisms. I find no evidence of fecal bacteria.

(Signed) H. L. RUSSELL,  
*Consulting Bacteriologist.*

Waukesha.—Chemical analysis, May 29, 1900.

The sample of water sent by Dr. G. Harkness, Waukesha, said to be from Plymouth Rock spring, has been tested with results as follows:

*Sanitary Analyses of Water.*

	Parts per 100,000
Total residue .....	55.90
Mineral residue .....	37.00
Volatile residue .....	18.90
Chlorine .....	2.400
Ammonia saline .....	.003
Ammonia albuminoid .....	.009
Nitrites .....	.0002
Nitrates .....	moderately large amount
Oxygen consumed .....	.180

A deep ground water such as springs are supposed to yield, should contain chlorine less than .500; albuminoid ammonia, due only to surface impurities, less than .005; nitrates should be less than .040; nitrites absent.

This water is undoubtedly polluted by sewage, and I would respectfully recommend that its use be discontinued.

(Signed) A. S. MITCHELL,  
*Chemist.*

## WOOD COUNTY.

Centralia.—Biological analysis, October 4, 1898.

I have the following report to submit on two samples of water received September 29th from Dr. C. A. Boorman of Centralia, Wis. Samples labeled river and tap water received in good order; temperature on arrival 52° F.; a quantitative bacteriological examination shows the following number of organisms per c. c. when grown on neutral nutrient gelatin.

River water 160, tap water 3.

Regarding the character of species found in river sample, would say that they are those associated with the decomposition of organic, particularly vegetable matter. I cannot account for the low content of the well water as shown by gelatin plate cultures. I am inclined to think that both of these waters are somewhat affected by the peaty condition of waters from such sources.

In cultures grown at body temperature on lactose agar, to which litmus had been added, river sample showed twenty colonies, one of which was acid producing; the tap sample showed no growth at this temperature.



*Sanitary Analyses of Water.*

In fermentation tests in glucose bouillon, nine independent series from river water showed abundance of gas in every instance; and an equal number of tests from tap water developing gas in very limited quantities in only two cases.

When grown in Dunham's solution and tested for indol, a decomposition product of fecal matter, positive tests were obtained in four cases out of four in sample of river water, in tap water one out of four showed positive tests.

From the above data I would conclude that there can be no question but that the river water is in a condition which should not be regarded as safe for potable purposes.

Concerning the tap water positive conclusions cannot be drawn from this single analysis. If the same is drawn from a well system which ought to filter the water thoroughly coming from the river source, I should consider it somewhat suspicious. If, however the supply is drawn from an exposed surface water, the analytical data would not be interpreted in quite the same way, as under these conditions, it is quite possible that organisms belonging to the putrefactive and fecal classes from animal sources might obtain entrance where this would not be possible if the supply was drawn from a closed system like that from wells.

If disease is epidemic that is likely to be distributed by means of water supply, I should consider that the supply system of the city should be examined closely for a consecutive number of times.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Centralia.—Chemical analysis, October 7, 1898.

The sample of water sent by Dr. C. A. Boorman, health officer, Centralia, Wis., said to be the tap water of the city supply, was sent me by Dr. Russell and has been examined with results as follows:

	Parts per 100,000
Total residue .....	8.70
Mineral residue .....	3.90
Volatile residue .....	4.80
Chlorine .....	.175
N as Nitrates .....	.005

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*Sanitary Analyses of Water.*


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	Parts per 100,000.
N as Nitrites .....	.0000
Saline ammonia .....	.001
Albuminoid ammonia .....	.015
Residue darkened deeply upon ignition.	

The large amount of volatile matter and albuminoid ammonia shows the water to contain considerable organic matter, but it seems to be of a harmless kind and I believe the water to be entirely free from sewage pollution.

The other sample sent Dr. Russell was insufficient for chemical analysis.

A. S. MITCHELL,  
*State Chemist.*

Centralia.—Biological analysis, October 19, 1898.

I have to report on another sample of city water received from Dr. C. A. Boorman, of Centralia, Wis.

Sample arrived in good condition; temperature on arrival, 50° F.; water clear with slight stain.

Quantitative determination of bacteria shows 140 per c. c. In lactose agar cultures grown at body temperatures 55 colonies were found, a number of which were acid-forming and therefore related to putrefactive and fecal type of bacterial life. Other differential media such as the fermentation tube and the Hess medium show presence of gas-forming organisms in all tests made in triplicate. The presence of indol could not be detected where Dunham's solution was infected with the tap water direct.

The significance of the above data is as follows:

The water appears to be impregnated with bacterial life that is associated with the decomposition of organic matter, either animal or vegetable. This is shown by the development of acid colonies on litmus lactose agar, also by gas formed in fermentation tubes of glucose media and in the Hess medium which is used for the differentiation of the fecal class of organisms. While the evidence of this test points to the infection of the water with fermenting and putrefactive bacteria still I am unable to isolate bacillus coli communis, the normal intestinal inhabitant, from the water supply.

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*Sanitary Analyses of Water.*


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The water has practically all of the characteristics, in a modified form, of a river or surface water and if the same is derived from such a source without filtration, such as through the ground or otherwise, the water could only be regarded as suspicious and one that would be likely to become dangerous only if the source of supply became infected. If the city water is drawn from wells that are fed by ground water that derives its supply from the river, then the condition of the system is to be regarded with even greater suspicion for with an intact filtering surface such as an adequate layer of soil, this evidence of organic decomposition should not be apparent. Not having definite knowledge as to existing conditions, I cannot state the matter more definitely as the interpretation of the analytical data depends somewhat on these conditions.

In this respect I should also like to know how the sewage of the city is disposed and what relation it bears to the public water supply.

H. L. RUSSELL,  
*Consulting Bacteriologist.*

Centralia.—Chemical analysis, October 28, 1898.

The sample of water sent me from Centralia by Dr. C. A. Boorman, health officer, source, Wisconsin river, collected October 12, has been analyzed with results as follows:

	Parts per 100,000
Total residue . . . . .	9.50
Mineral residue . . . . .	5.30
Volatile residue . . . . .	4.20
Chlorine . . . . .	.175
Ammonia saline . . . . .	.0015
Ammonia albuminoid . . . . .	.015
Nitrites . . . . .	.0000
Nitrates . . . . .	.010

Residue blackened on ignition.

I consider this unusually pure for river water.

A. S. MITCHELL,  
*State Chemist.*

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*Extracts from Health Officers' Correspondence.*

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## EXTRACTS FROM HEALTH OFFICERS' CORRESPONDENCE.

### ADAMS COUNTY.

*Rome Tp.:* This township is reported to be composed of nine or more different nationalities. The health officer receives no salary and but little work is required of the local board of health as the sanitary conditions are very good. There are six public schools, the buildings of which are all reported to be in good sanitary condition. There is no public water supply; no sewerage system. The prevailing sickness during the year has been influenza or la grippe, dysentery and cholera morbus. The law requiring the report of dangerous contagious disease is well observed. There has been no vaccination done during the last five years. The State Board of Health is notified of all contagious disease as soon as reported. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and burial permits are observed.

R. SLINING, H. O.

### ASHLAND COUNTY

*Ashland City:* The population is about 18,000. Work is done under the supervision of the board of health and health commissioner. The board has been called together eight or ten times during the past year. Salary of health commissioner \$500.00 per annum. Number of school houses, 10; sanitary condition good. The health commissioner is given authority by resolution to act in the name of the board in any emergency. There has been no special sanitary work done during the past year. Water supply is from Chiquamagon bay; is filtered and of good quality. The sewerage system empties into the bay. during the year there have been 5 cases of smallpox with

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*Extracts from Health Officers' Correspondence.*

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no deaths; 26 cases of diphtheria with 2 deaths; 67 cases of scarlet fever with no deaths; and there have been ten deaths from typhoid fever, 1 death from whooping cough, 8 deaths from pneumonia, 2 deaths from dysentery, 24 deaths from cholera infantum, and ten deaths from consumption. The law requiring the report of dangerous contagious disease is well observed in smallpox, diphtheria and scarlet fever; the others are not well reported. The school children have all been vaccinated during the year. Contagious diseases are reported promptly to the State Board of Health, and the general result of efforts to restrict the spread of contagious disease is very encouraging. The law requiring the report of births is not observed; the law requiring burial permits is observed.

J. A. MARCHESAULT, M. D., H. C.

*Glidden Tp.:* Population about 500, mostly German. Work is done under the supervision of the board of health and health officer. There have been eight meetings of the board during the past year, and its proceedings and orders are regularly recorded. The health officer receives a salary of \$3.00 per day for actual services. The number of public school houses 3; sanitary condition good. The health officer is not given authority to act in any emergency without a meeting of the board. The principal sanitary work done has been the cleaning of streets and alleys, and compelling property owners to clean premises. We have no sewerage system. Poor drainage. A great number of privies are full to overflowing. They are in poor sanitary condition. There has been an increase in typhoid fever and diarrhoea during the year. Water supply from wells. During the year there have been 16 cases of typhoid fever with no deaths; 200 cases of whooping cough with no deaths; 20 cases of pneumonia with 3 deaths; 200 cases of diarrhoea with no deaths; 6 cases of cholera morbus with 1 death; 4 cases of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed. No vaccination has been performed. Contagious diseases are promptly reported to the State Board of Health. This year sanitary conditions have been materially improved but there is opportunity for far greater improvement. The law requiring the report of births is observed; the law requiring burial permits is not observed.

W. G. LAW, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## BARRON COUNTY.

*Barron City:* Population 1,497, Americans, Scandinavians and Germans. Health officer receives no salary. There are two public school houses. Sanitary condition is reported very good, but ventilation poor. During the year notices have been sent to every house demanding that the premises be cleaned up. Water supply is from natural spring—pronounced safe and good by the State Chemist and Bacteriologist. No sewerage system. During the year there have been four cases of diphtheria, 6 cases of typhoid fever, 3 cases of measles with no deaths; 30 cases of pneumonia with 3 deaths; 20 cases of diarrhoea, 20 cases of cholera morbus with no deaths; 4 cases of consumption with 3 deaths. The law requiring the report of dangerous contagious disease is observed. A small portion of the people have been vaccinated. Reports of cases of contagious diseases are promptly sent to the State Board of Health. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and burial permits are observed. I want to urge upon the State Board the enforcement of some rules and regulations governing patients who are afflicted with consumption. Every year we are impressed with the insidious inroad this disease has on families once inoculated, going from one to another in rapid succession.

A. E. HEDBACK, M. D., H. O.

*Chetek City:* Population 500, Americans and Scandinavians principally. The work is done under the supervision of the board of health and health officer. The health officer receives no salary. There is one public school building; sanitary condition good. Health officer is empowered by resolution to act in any emergency. The principal sanitary work done during the year has consisted of cleaning of streets and back yards. There has been an increase of typhoid fever. Water supply is from private wells. No sewerage system. The law requiring the report of dangerous contagious disease is not observed, hence cases have not been reported to the State Board. The law requiring the report of births is observed. The law requiring burial permits is only partially observed.

W. G. MALCOLM, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Cumberland City:* Population about 1,600, Scandinavians, Americans, and Germans; a few Italians. Work is done under the supervision of the board of health and health officer. Salary of health officer is \$50 per year. There are two public school houses; sanitary condition good, with the exception that a livery stable is located on adjoining lot. Public water supply from driven well 500 to 600 feet deep. Quality very good. No sewerage system. During the year there have been 2 cases of diphtheria, 5 cases of typhoid fever, with no deaths; 2 cases of consumption, with one death. The law requiring the report of dangerous contagious disease is observed. The State Board of Health is promptly notified. No vaccination since 1894. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is partially observed, and the law requiring burial permits is strictly observed. In several cases where typhoid fever occurred in the town the cellars have contained water, owing to the excessive rains.

W. B. HOPKINS, M. D., H. O.

BAYFIELD COUNTY.

*Bayfield City:* Population about 1,800, Americans, Swedish, French, and Germans. Work done under the supervision of the board of health and health officer. Health board meets once a month. Salary of health officer, \$60 per annum. There are ten public school buildings, all in excellent sanitary condition. Health officer is given authority to act in any emergency by resolution adopted by the board. There has been no special sanitary work necessary, but close watch has been kept to see that no unsanitary conditions exist. About \$500 has been expended in this way. There have been more cases of typhoid fever during the year than usual, due to impure water from wells. There is a public water supply taken from Lake Superior, which is pronounced good. Sewerage system empties into lake. During the year there have been 3 cases of diphtheria, with no deaths; 1 case of smallpox, with no deaths; 36 cases of typhoid fever, with 2 deaths; 10 cases of measles, 20 cases of whooping cough, 6 cases of pneumonia, 30 cases of la grippe, 10 cases of dysentery, 25 cases of diarrhoea, 25 cases of chol-

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*Extracts from Health Officers' Correspondence.*

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era morbus, and 10 cases of consumption, with 4 deaths. The law requiring the report of contagious disease is observed. During the year about 200, mostly school children, have been vaccinated. Contagious diseases are promptly reported to the State Board of Health, and the general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed; the law requiring burial permits is not observed.

H. HANNUM, M. D., H. O.

*Drummond Township:* Population about 400, 90 per cent. Scandinavians. Work done under the supervision of the board of health and health officer. The board of health meets every three months. The health officer receives no salary. There is one public school building, and the sanitary condition is reported good. Health officer is not given authority to act in any emergency by resolution of the board. The principal sanitary work done during the year has consisted of cleaning streets, alleys, and outhouses, at a cost of about \$200. The water supply is from good wells and springs. No sewerage system. During the year there have been 75 cases of measles, 150 cases of diarrhoea, 25 cases of cholera morbus, and 2 cases of consumption with 2 deaths. Very few school children have been vaccinated. The laws requiring the report of births and deaths are observed.

J. A. OHMS, H. O.

*Iron River:* Population, 3,000, Scandinavian, French, Finlanders, Irish, Scotch, English. Work done under the supervision of the board of health and health officer. The board of health meets monthly and its proceedings and orders are regularly recorded. The salary of health officer is \$100 per annum. There are eighteen public school houses; sanitary condition reported good. The health officer is authorized by resolution of the board to act in any emergency. The principal sanitary work done during the year has been establishing a sewerage system, at the cost of \$5,000. There has been a decrease in diphtheria and scarlet fever during the year. The water supply is from springs situated in the town. The sewerage system drains into the Iron River. During the year there have been 2 cases of smallpox, 1 case of diphtheria, 1 case of



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*Extracts from Health Officers' Correspondence.*

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scarlet fever, 20 cases of typhoid fever, 3 cases of dysentery with no deaths, 7 cases of cholera morbus with 1 death; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health is promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and deaths are observed.

J. A. PATTERSON, M. D., H. O.

BROWN COUNTY.

*Big Suamico Township:* Population about 1,500. Work done under the supervision of the board of health and health officer. We have had no outbreaks of contagious disease in our town, hence the board of health has not often been called together. The salary of the health officer is \$1.50 a day when actually employed. There are six school buildings; all in good sanitary condition. The health officer is given authority to act in the name of the board in any emergency. The principal sanitary work done during the year has been keeping everything clean and up to date. The water supply is from good, clear springs and a number of flowing wells. No sewerage system. The law requiring the report of dangerous contagious disease observed. About two-thirds of the population have been vaccinated and about one-half of the school children within the past five years. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. The sanitary condition of our town is good.

JOHN G. DAY, H. O.

*Green Bay City:* Estimated population, 24,000. The work is done under the supervision of the board of health and health officer. The board of health meets each month and its proceedings and orders are regularly recorded. The salary of the health officer is \$300 per annum. There are fourteen public school buildings and four parochial school buildings. Sanitary condition of all fair. Health officer is given authority, by resolution, to act in the name of the board in any emergency. The principal sanitary work done during the year has consisted in

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*Extracts from Health Officers' Correspondence.*

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cleaning and covering all reservoirs of water supply, extending of sewers into river current "from Bank;" changing closet system in schools; closing private sewers. Improvement of sanitary condition of the city, \$8,000 to \$10,000. There are more or less of the old fashioned privies which are gradually being done away with. There is some undrained land. The water supply is from eight artesian wells. Quality good. Sewerage system empties into the Fox and East rivers. During the year there have been 42 cases of diphtheria, with 5 deaths; 35 cases of scarlet fever, with 1 death; 40 cases of typhoid fever, with 3 deaths; 32 cases of measles, with no deaths; 12 cases of whooping cough, with 3 deaths; 19 deaths from pneumonia, 2 deaths from la grippe, 1 death from dysentery, 1 death from diarrhœa, 1 death from cholera morbus, and 25 deaths from consumption. The law requiring the report of dangerous contagious disease is well observed, except the reporting of tuberculosis. From inquiry I should judge that but a very small proportion of people have been vaccinated during the past five years. Contagious diseases are promptly reported to the State Board of Health, and the general result of efforts to restrict the spread of contagious disease is encouraging. About 80 per cent. of the births are reported, and the law requiring burial permits is observed.

F. H. THIBODO, M. D., H. O.

*Pittsfield Township:* The work done under the supervision of the board of health and health officer. The health officer receives no salary. There are five public school buildings, all in very good sanitary condition. The water supply is plentiful and pure. No sewerage system. During the year there have been 16 cases of diphtheria, with 4 deaths; 2 cases of scarlet fever; 1 case of typhoid fever; 7 cases of measles, 10 cases of whooping cough with no deaths; 6 cases of pneumonia with 1 death; 18 cases of la grippe with no deaths; 2 cases of dysentery with 1 death; 16 cases of cholera morbus with 1 death; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious disease is generally well observed. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and burial permits are not observed. The general state of health is good.

CHAS. WACKENWRITER, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## BUFFALO COUNTY.

*Fountain City:* Population about 1,100. Salary of health officer, \$20 per annum. The number of public school buildings, 2; sanitary condition good. The health officer is given authority by the board to act in cases of emergency. Source of water supply, drilled wells, and water is excellent. No sewerage system. With the exception of 2 cases of typhoid fever during the past year there have been no contagious diseases reported. The law requiring the report of dangerous contagious disease is observed, and I regret to say that the State Board is seldom notified. In regard to the general results of efforts to restrict the spread of contagious disease, the occasions on which to base an opinion have been too limited. There has never been a virulent epidemic within my knowledge; only sporadic cases. In regard to the laws requiring the report of deaths and the issuing of burial permits, neither law is observed as it should be, although as health officer I am making a good effort. The result will be a more general observance, but it will take time.

J. PAUL REINHARDT, M. D., H. O.

*Mondovi City:* Population, 1,500. Board of health meets every three months, and its proceedings and orders are regularly recorded. The salary of the health officer is \$10 per year. Number of public schools, two (sanitary condition not reported). Health officer is given authority by the board to act in any emergency. There has been very little sickness during the past year. There have been 3 cases of diphtheria with no deaths; 10 cases of measles with no deaths; 10 cases of pneumonia with 2 deaths; 20 cases of dysentery, 40 cases of diarrhoea, 5 cases of cholera morbus with no deaths, and 1 case of consumption with 1 death. The law requiring the report of dangerous contagious diseases is properly observed and the State Board of Health notified. Water supply is from wells. No sewerage system. The general result of efforts to restrict the spread of contagious disease is very encouraging. The laws requiring the report of births and issuing of burial permits is observed. I am fully satisfied that prompt quarantine and thorough disinfection and cleaning, prevents the spread of contagious disease.

SIMON MILLER, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## BURNETT COUNTY.

*Grantsburg:* Population, 630. Board of health meets four times a year, and its proceedings and orders are regularly recorded. Health officer receives a salary of \$10 per annum. There is one public school building; sanitary condition good. Health officer is given authority by the board to act in any emergency. Source of water supply is from wells. No sewerage system. There have been no contagious diseases reported during the year. About 100 cases of la grippe have occurred, with no deaths; 25 cases of dysentery, 100 cases of diarrhoea, 10 cases of cholera morbus, with no deaths, and 3 cases of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed and the State Board of Health notified. Hardly any of the people have been vaccinated within the past five years, but about 50 per cent. of the school children have been vaccinated during that period. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

P. BAKKE, M. D., H. O.

*Trade Lake Township:* Population about 1,200. Work done under the supervision of board of health and health officer. Board holds no regular meetings. It has been called together twice on account of suspected glanders among horses. No records kept. Health officer receives no salary. There are four public school houses; sanitary condition good, except one which is too near a swamp. Health officer is not given authority to act in the name of the board in any emergency. No special sanitary work has been done during the year. Source of water supply is from springs and wells. Quality good. A sewer from the creamery goes to the river. This is all the sewerage system that exists. During the year no cases of contagious disease have been reported, except 11 cases of whooping cough with no deaths; 5 cases of pneumonia, 2 cases of la grippe, 37 cases of diarrhoea, 1 case of cholera morbus, and 2 cases of consumption, with no deaths. The law relating to the report of contagious disease is not generally observed. I think some people are ignorant of the law, and others fear the inconvenience of the quarantine regulations. In case of

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*Extracts from Health Officers' Correspondence.*

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the existence of contagious disease, the State Board is promptly notified, and houses quarantined. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed; but the law requiring the issuing of burial permits is not often observed.

F. GUST BARCK, M. D., H. O.

CALUMET COUNTY.

*Brillion Village:* Population about 1,000. One high school, six departments. Sanitary condition fairly good. Health officer is given authority by resolution of the board to act in any emergency. Source of water supply from wells. No sewerage system. During the year there have been 4 cases of diphtheria, 2 cases of scarlet fever, 12 cases of measles, 20 cases of whooping cough, with no deaths; 6 cases of pneumonia with 1 death; 5 cases of la grippe with 1 death; 1 case of dysentery with no death; 11 cases of diarrhoea with 2 deaths; 1 case of consumption with no death. The State Board of Health is promptly notified of the existence of contagious disease. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and issuing of burial permits are observed.

I. N. McCOMB, M. D., H. O.

*Hibbard Village:* Population, 500. One public school building; sanitary condition reported good. Health officer is given authority by resolution of the board to act in any emergency. Source of water supply from wells; quality good. No sewerage system. During the year there have been 10 cases of diphtheria, 7 cases of scarlet fever, 1 case of typhoid fever, 2 cases of pneumonia, with no deaths; 7 cases of diarrhoea with 1 death. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health is promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. Cases of scarlet fever and diphtheria were very mild in nature. Frequently families would not call physician, and in some cases permitted the spreading of these diseases before their nature was known.

LEWIS FRANK, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## CHIPPEWA COUNTY.

*Boyd Village:* Population, 875. Health officer is given a salary of \$25 per annum. One public school building and one parochial school building. Sanitary condition is good; buildings are new. Health officer is not given authority by the board to act in any emergency. Source of water supply from private wells and system of water works. Water is very pure. No sewerage system. During the year there have been no contagious diseases reported except several cases of measles and a few cases of whooping cough; there have also been a few cases of la grippe, diarrhoea, and a large number of cases of dysentery. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health is notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and issuing of burial permits are observed.

E. M. HUNT, M. D., H. O.

*Stanley City:* Population, 3,000. Health officer receives a salary of \$25 per annum. There are two public school buildings in good sanitary condition. The Northwestern Lumber Company has a mill pond in this city, which in my judgment is a source of danger to the public health; also the United States Leather Company has a tannery here, and of course a great deal of the refuse material is carried into the streams, which I consider is unhealthy. The water supply is from wells. There is no sewerage system. During the year there have been 3 cases of diphtheria with 2 deaths; 5 cases of typhoid fever, 11 cases of la grippe, with no deaths; 13 cases of diarrhoea with one death; 22 cases of cholera morbus with 4 deaths; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious disease is not fully observed on account of negligence on the part of physicians attending. The State Board of Health is immediately notified on receiving reports of contagious disease. The general result of efforts to restrict the spread of contagious disease is encouraging. Relative to the law pertaining to the report of births, under the new law it is quite hard to get people to report births as the majority of the population here are Scandinavians and cannot read English. I am enforcing the law in regard to

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*Extracts from Health Officers' Correspondence.*

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the reporting of births and deaths in my jurisdiction. Before we can have a healthy city we must have a sewerage system, as the land is nothing but a swamp and there is no drainage at all. Cannot give a very descriptive idea of the diseases that have prevailed in this locality, as the health commissioner going out of office did not deliver any records to me. But it has been quite a healthy year.

J. N. CUNNINGHAM, M. D., H. O.

CLARK COUNTY.

*Abbotsford Village:* Population, 450. Health officer receives no salary. One public school building; the new part of building is in good sanitary condition; the old part not so. Health officer is not given authority to act in any emergency. Source of water supply from wells. No sewerage system. During the year there have been 20 cases of whooping cough, 20 cases of pneumonia, 1 case of la grippe, 50 cases of dysentery, 50 cases of diarrhoea, with no deaths; 12 cases of cholera morbus with 1 death. The law requiring the report of dangerous contagious diseases is not observed, owing to ignorance of the law by the people. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

THOMAS DILLON, H. O.

*Colby City:* Population, 800. Board of health met three times during the year; its proceedings and orders are regularly recorded. Health officer receives pay for actual work done. There are two public school buildings; sanitary condition fair. Source of water supply from wells. No sewerage system. During the year no contagious diseases have been reported except 25 cases of whooping cough, 2 cases of pneumonia, 20 cases of diarrhoea, with no deaths; 10 cases of cholera morbus with 1 death. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health promptly notified. The general result of efforts to restrict the spread of contagious diseases is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

D. R. FREEMAN, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Greenwood City:* Population, 800. Number of school buildings, one; sanitary condition good. Source of water supply from wells. No sewerage system. During the year there have been 4 cases of diphtheria, 1 case of scarlet fever, 1 case of typhoid fever, 10 cases of measles, 25 cases of whooping cough, 4 cases of pneumonia, 20 cases of la grippe, 40 cases of diarrhoea, and 3 cases of consumption, with no deaths. The law requiring the report of dangerous contagious disease is observed and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. I think that fully 70 per cent. of the population are not vaccinated, and I do not like to see this neglected. B. P. CHURCHILL, M. D., H. O.

*Neillsville City:* Population, 2,500. Health officer receives a salary of \$200 per annum. There are two public and two parochial schools. Sanitary condition, excellent. Health officer is given authority by resolution of the board to act in any emergency. O'Neill Creek, which passes through the city, has been the receptacle above and beyond city limits of typhoid excreta which has contaminated the ice drawn from the creek. The ice has been repeatedly condemned, but is largely used. Marked increase in typhoid fever, which is now endemic. Public attention has been called to the danger of using creek ice and every possible precaution has been employed to disinfect bed clothing, etc., as well as typhoid dejecta. During the year there have been 5 cases of diphtheria, 1 case of scarlet fever, 46 cases of typhoid fever, 5 cases measles, with no deaths; 12 cases of pneumonia, with 3 deaths; 7 deaths from la grippe; 7 cases of dysentery, with no deaths; 3 cases of consumption, with 3 deaths. The law requiring the report of dangerous contagious diseases is observed. Vaccination has been generally neglected. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. Absolute prohibition of domestic use of creek ice would be beneficial to community. A city ordinance requiring proper cleaning of privy vaults at regular intervals would enable health officer to lessen the dangers of infectious and contagious diseases. T. F. CONROY, M. D., H. O.



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*Extracts from Health Officers' Correspondence.*

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## COLUMBIA COUNTY.

*Columbus:* Population 2, 500. Health officer receives no salary. There are 3 public school buildings; sanitary condition good. Health officer is not given authority by resolution to act in the name of the board in any emergency. Source of water supply, artesian wells. No sewerage system. There has been but 1 case of scarlet fever with 1 death reported during the year. The law requiring the report of dangerous contagious disease is fairly well observed. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

B. F. BELLACK, M. D., H. O.

*Kilbourn Vil.:* Population 1,500. Health officer paid for actual service. There is one public school building; sanitary condition not very good. There is a verbal understanding that the health officer should act for the board in any emergency. Source of water supply, artesian wells; water of good quality. No sewerage system. There have been no contagious diseases reported during the year except 1 case of typhoid fever with 1 death. The law requiring the report of dangerous contagious diseases is not observed, I think, but as yet it has not been necessary to observe it very closely. The State Board of Health will be promptly notified in case of any outbreak. The law requiring the report of births is not strictly observed but the law requiring burial permits is observed.

C. L. TREADWELL, M. D., H. O.

*Lodi Village:* Population, 900, mixed population. Health officer receives no salary. There are two public school buildings; sanitary condition good. Health officer given authority by the board to act in any emergency. Water is from well supplied by several springs; quality good. No sewerage system. No contagious diseases have been reported during the year. There have been 12 cases of whooping cough, 4 cases of pneumonia, 20 cases of dysentery, 12 cases of cholera morbus with no deaths; 8 cases of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed. While we have not always notified the State Board of Health we will see that this is done hereafter. The general result of

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*Extracts from Health Officers' Correspondence.*

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efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

G. H. IRWIN, M. D., H. O.

*Portage City:* Population, 5,600, mixed. Health officer receives a salary of \$10 per month. There are five school buildings in good sanitary condition. Health officer is given authority, by resolution of the board, to act in any emergency. Source of water supply is from the Wisconsin river, and wells; generally good. No sewerage system. During the year there have been 75 cases of diphtheria with 6 deaths; 10 cases of scarlet fever; 4 cases of typhoid, with no deaths; 6 deaths from consumption. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not observed, but the law requiring the issuing of burial permits is observed.

F. D. BENTLEY, M. D., H. O.

CRAWFORD COUNTY.

*Prairie du Chien:* Population, 600. Health officer receives a salary of \$2 per day. Number of school buildings, six; sanitary condition good. Health officer is given authority by resolution of the board to act in any emergency. Source of water supply, springs and wells; water good. No sewerage system. There have been no cases of contagious disease reported during the year except 3 cases of whooping cough with no deaths; 2 cases of pneumonia with 1 death; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health notified. The general results of efforts to restrict the spread of contagious disease are encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

THOS. LECHNIR, H. O.

*Wauzeka Village:* Population, 470, mostly Americans. Health officer receives a salary of \$10 per annum. There are two public school buildings, in good sanitary condition. Health officer is given authority by the board to act in any

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*Extracts from Health Officers' Correspondence.*

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emergency. Source of water supply, mostly artesian wells. No sewerage system. During the year there have been 3 cases of scarlet fever, 2 cases of pneumonia, 20 cases of la grippe, 4 cases of dysentery, 15 cases of diarrhoea, 5 cases of cholera morbus, with no deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births, and the issuing of burial permits are observed.

G. H. PERRIN, M. D., H. O.

DANE COUNTY.

*Madison:* Population, about 20,000, mixed. Board of health meets three or four times annually, and its proceedings and orders are regularly recorded. Salary of health officer, \$500 per annum. There are nine public school buildings; sanitary condition good. Health officer is given power, by resolution of the board, to act in any emergency. Special sanitary work done during the year was filling low marsh ground; cost taxed against owner of property; amount unknown. There are no special unsanitary conditions existing. The source of water supply is from artesian wells. Sewage, after purification, empties in to the lake. During the past year there have been 3 cases of smallpox with no deaths; 14 cases of diphtheria with 1 death; 43 cases of scarlet fever with 5 deaths; 3 cases of typhoid fever with 1 death; 1 death from measles; 13 deaths from pneumonia; 2 deaths from la grippe; 6 deaths from cholera morbus; and 21 deaths from consumption. The law requiring the report of dangerous contagious diseases is observed. Very little vaccination has been done during the past five years. The general result of efforts to restrict the spread of contagious disease is encouraging. Concerning the law requiring the report of births: not more than one-half of the cases are reported. The law requiring burial permits is observed.

PHILIP FOX, M. D., H. O.

*Mount Horeb:* Nearly 1,000 population. Health officer receives a salary of \$15 per annum. There are two public school buildings in very fair sanitary condition. The special

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*Extracts from Health Officers' Correspondence.*

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sanitary work done during the year has consisted in cleaning streets, yards, alleys, and outhouses. Cost of doing the work estimated at about \$100 which has been paid by the owners. We have a drain from a creamery into a cess pool which is a source of constant trouble both to the owner and the authorities. He has dug several sink holes but they soon fill up and the same trouble ensues. Source of water supply, deep wells, not less than 100 feet, and over. No sewerage system. There have been no cases of contagious disease except 1 case of typhoid fever with no deaths; 5 cases of pneumonia with 1 death; 9 cases of dysentery with no deaths; 25 cases of diarrhoea with 2 deaths; 1 case of cholera morbus with 1 death; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed. In case of the prevalence of contagious disease the physician who has the case in charge reports to the health officer; he in turn reports to the State Board of Health at least once a week. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not observed; the law requiring the issuing of burial permits is observed.

N. C. EVANS, M. D., H. O.

DODGE COUNTY.

*Horicon:* Population, 1,600. There are 3 public school buildings in good sanitary condition. Health officer is not given authority by resolution to act in the name of the board in any emergency, but there is an understanding that he may so act. Source of water supply is from wells. Have but a small sewerage system; empties into Rock river. There have been no contagious diseases reported during the year. There have been 2 deaths from scarlet fever. The law requiring the report of dangerous contagious disease is generally but not fully observed. The horror of being quarantined and deference on the part of physicians to the wishes of their patrons has prevented such reports. The general result of efforts to restrict the spread of contagious disease has been discouraging during the past summer. On account of the mildness of scarlet fever many cases had no physician, and consequently were not reported. The laws requiring the report of births and issuing of burial permits are strictly observed. It is evident that some cases of scarlet

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*Extracts from Health Officers' Correspondence.*

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fever were not reported because the breadwinners when quarantined are deprived of their earnings which are necessary to the support of their families. Such persons suffer a double affliction when contagious disease enters the family, and as they are placed under quarantine for the protection of the public, the public ought to share the expenses, at least to the extent of supporting the family during the enforced idleness of those who usually provide such support.

F. P. KLAHR, M. D., H. O.

*Mayville:* Population, 1,900. Health officer receives a salary of \$25 per annum. There are two public school buildings; one is in very good sanitary condition, the other fair. The health officer is not given authority by resolution to act in any emergency. Source of water supply, from wells and of good quality. Sewerage system empties into Rock river. During the year there have been 10 cases of scarlet fever; 4 cases of measles; 12 cases of pneumonia; 15 cases of la grippe; 20 cases of diarrhoea, and 3 cases of consumption, with no deaths. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. There has been marked increase in pulmonary tuberculosis during the last few years, most likely the result of our late influenza epidemics.

A. E. BACHHUBER, M. D., H. O.

DOOR COUNTY.

*Sevastopol:* Population, about 1,200. Health officer receives a salary of \$2 per day when in actual service. There are eight public school buildings; sanitary condition unknown. The health officer is given authority by resolution of the board to act in any emergency. There is no sewerage system. During the year there have been 2 cases of diphtheria with 1 death; 8 cases of scarlet fever, 2 cases of typhoid fever, with no deaths; 30 cases of measles with 2 deaths; 100 cases of whooping cough with 1 death; 4 cases of pneumonia with 1 death; 2 cases of dysentery with 1 death; 10 cases of diarrhoea, 2 cases of cholera morbus, with no deaths; 4 cases of consumption with 2

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*Extracts from Health Officers' Correspondence.*

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deaths. The law requiring the report of dangerous contagious diseases is not observed. The failure of the people to employ physicians for such diseases as measles, chickenpox, rotheln, and sometimes for more dangerous diseases, is the reason. The laws requiring the report of births and the issuing of burial permits are observed. I should suggest that some compulsory law on vaccination, as only a small per cent. of the people are vaccinated, especially now as we have smallpox in this vicinity, and in various parts of the state, as vaccination is the only safeguard to this dread disease. I find that the greatest objection to vaccination is the money question. The answers I receive from all parents when interrogating as to why his or her or their children are not vaccinated are, "I have no money to get my three or four children vaccinated," "If the town wants to vaccinate my children, go ahead, I have no money." Such are the prominent and most important objections to vaccination in the country and thinly settled districts. Now I would suggest that at the next session of the legislature a law would be passed empowering health officer of towns or cities to hire a physician (if he is a physician he may hire himself) to vaccinate all children of his town or municipality free, and have the town or municipality pay the said physician for his labor, and have this a state law that no town or municipality can by some hook or crook get out of making any expense of which some town and city directors are so terribly afraid. Then the percentage of vaccination will certainly be increased 50 per cent., and we can say that we have made a step forward in civilization, and a step nearer toward stamping out this dread disease "smallpox."

H. R. SIMON, M. D., H. O.

*Sturgeon Bay:* Population 1,250. Health officer receives a salary of \$2 per day for time consumed. There are three public school buildings in good sanitary condition. Health officer is given authority by the board to act in any emergency. Source of water supply, wells. No sewerage system. During the year there have been 20 cases of scarlet fever with no deaths; 1 death from cholera morbus; 1 death from consumption. The State Board of Health is always promptly notified of the appearance of the first case of contagious disease. The laws requiring the report of births and the issuing of burial permits are observed.

F. A. KRUEGER, H. O.

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*Extracts from Health Officers' Correspondence.*

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## DOUGLAS COUNTY.

*Superior Tp.:* Population 1,500. Health officer receives salary of \$100 per annum. There are nine school buildings in good sanitary condition. Health officer is given authority to act in the name of the board in any emergency. Source of water supply, wells, quality, good. There is no sewerage system. During the year there have been 7 cases of smallpox with no deaths; 3 cases of la grippe; 6 cases of diarrhoea with no deaths; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed, and the State Board promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. The board gives me full power to act in its name and to use my own judgment as to what to do.

E. T. GAUVREAU, M. D., H. O.

## DUNN COUNTY.

*Hay River:* Health officer receives no regular salary; salary regulated as to duties performed. There are five public school buildings in good sanitary condition. The health officer is given authority to act in the name of the board in any emergency. Source of water supply is from wells; quality, good. No sewerage system. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is very encouraging. The laws requiring the report of births and the issuing of burial permits are observed. There has been during the past year only one case of diphtheria; we secured medical attendance as soon as notified but the case was too far advanced to stop it and child died, but the disease was prevented from spreading in a large family of children.

J. C. LAKE, H. O.

*Menomonie:* Population 6,000. Health officer receives a salary of \$400 per annum. There are five public school buildings; sanitary condition perfect. Health officer is given au-

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*Extracts from Health Officers' Correspondence.*


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thority by resolution of the board to act in any emergency. Source of water supply, artesian wells. Sewerage system drains into the river. During the year there have been 5 cases of smallpox with no deaths; 10 cases of diphtheria; 5 cases of measles with no deaths; 6 deaths from consumption. General result of efforts to restrict the spread of contagious disease have been successful. The law requiring the report of births is not observed. The law requiring the issuing of burial permits is observed. Vaccination of school children should be compulsory as should general vaccination; consumption quarantined; a general state law against spitting upon sidewalks and floors of public buildings, etc.

H. M. READ, M. D., H. O.

EAU CLAIRE COUNTY.

*Augusta:* Population 1,500 to 1,800. Health officer receives a salary of \$65.00 per annum. Only two public school buildings, sanitary condition, good. Health officer is given authority by resolution of the board to act in any emergency. The principal sanitary work done during the year was the drainage from stagnant pools; cleaning of alleys and streets. Source of water supply is from wells; quality, good. No sewerage system. During the year there have been reported 2 cases of smallpox with no deaths; 7 cases of scarlet fever; 12 cases of la grippe; 70 cases of diarrhoea; 6 cases of cholera morbus. Dangerous contagious diseases are reported to health officer and the State Board of Health is promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are not observed.

R. F. WERNER, M. D., H. O.

*Drammon Tp.:* Population 600. Health officer is paid for services rendered. There are three public school buildings in good sanitary condition. Health officer is not given power by resolution of the board to act in any emergency. Source of water supply, from wells and springs; the water is very pure. No sewerage system. During the year there have been 6 cases of measles, 4 cases of whooping cough, with no deaths; 10 cases of pneumonia with 1 death; 8 cases of la grippe, 2 cases of



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*Extracts from Health Officers' Correspondence.*

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dysentery, 12 cases of diarrhoea, 4 cases of cholera morbus, with no deaths; 2 cases of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed and the State Board is notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and issuing of burial permits are observed. The health of the community has been unusually good during the past year.

FREDERIC G. CONGER, M. D., H. O.

FLORENCE COUNTY.

*Commonwealth Tp.:* Population 500. Health officer receives a salary of \$50 per annum. There is one public school building; sanitary condition good. Health officer is not given authority by resolution to act in the name of the board in any emergency. Source of water supply from wells sunk on high land; quality of water, good. No sewerage system. During the past year no contagious diseases have been reported. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health notified. The laws requiring the report of births and the issuing of burial permits are observed.

H. P. CHAMBERS, M. D., H. O.

*Homestead Tp.:* Population 500. Health officer receives a salary of \$30 per annum. There are five public school buildings; sanitary condition excellent. Health officer is not given authority by recorded resolution to act in the name of the board in any emergency. During the year no sanitary work has been needed. The source of water supply is from wells. There is no sewerage system. No contagious diseases have been reported during the year. The law requiring the report of dangerous contagious disease is observed, and the general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

JOHN JOHNSON, H. O.

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*Extracts from Health Officers' Correspondence.*

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## FOND DU LAC COUNTY.

*Fond du Lac:* Population about 17,000. Health officer receives a salary of \$250.00 per annum. There are ten public school buildings, sanitary condition, good. Health officer is given authority by resolution of the board to act in any emergency. Principal unsanitary condition existing within the jurisdiction is the river. The source of water supply is from artesian wells. Sewerage system empties into the river. During the year there have been 20 cases of diphtheria with 6 deaths; 20 cases of typhoid fever with 1 death; 19 deaths from pneumonia; 2 deaths from la grippe; 1 death from dysentery; 25 deaths from consumption. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

H. C. DITTMAR, H. O.

*Waupun:* Population 2,900. Health officer receives \$50 per annum. There are three public school buildings in good sanitary condition. Health officer is expected to act at any time when in his judgment he deems it necessary. There has been no special sanitary work done during the year. The condition of the city is good and has been kept so by persistent effort. Source of water supply from artesian wells. During the year there have been 5 cases of diphtheria; 7 cases of scarlet fever, with no deaths; 3 cases of typhoid fever with one death; 4 cases of measles with no deaths; 2 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not observed. The law requiring the issuing of burial permits is observed. It always requires tact and an especial fitness to do the work of a health officer with good judgment, and by a courteous and gentlemanly demeanor all obstacles can be overcome. Ignorance is the fundamental cause for much of the many hindrances to effective work. Again, how can we work if we are not paid a decent sum for our services?

G. B. DURAND, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## GRANT COUNTY.

*Bloomington:* Population 750. Health officer receives a salary of \$10 per annum. Number of public school buildings, two; sanitary condition, good. Source of water supply, springs, wells, and cisterns. No sewerage system. During the year there have been 12 cases of diphtheria with 3 deaths; 6 cases of scarlet fever; 4 cases of typhoid fever, with no deaths; 60 cases of pneumonia with 8 deaths; 60 cases of la grippe with 3 deaths; 100 cases of diarrhoea with no deaths; 80 cases of cholera morbus with 2 deaths; 8 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. Having been in Bloomington, Wis., only six months, I am unable to give this report as accurate as I should like to. However, I consider the number of cases a fair estimate.

E. H. BASCO, M. D., H. O.

*Boscobel City:* Population 2,000. Health officer receives no salary. There are four public school buildings; sanitary condition good. Health officer is given power by resolution of the board to act in any emergency. The water supply is from driven wells. There have been no contagious diseases reported during the year. The law requiring the report of dangerous contagious diseases is observed, and the State Board is notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not observed. The law requiring the issuing of burial permits is strictly observed. A very great advance in intelligence and support of the law now exists as compared with 34 years ago when I came here first.

L. G. ARMSTRONG, M. D., H. O.

*Lancaster Tp.:* Population in '95 was 1,805. Health officer receives no salary. There are eleven public school buildings; in good sanitary condition. Source of water supply from drilled wells, springs and cisterns. No sewerage system. The law requiring the report of dangerous contagious diseases is

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*Extracts from Health Officers' Correspondence.*

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observed, and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. About two-thirds of the births are recorded, and the law requiring the issuing of burial permits is observed. The law relating to births is not fitted for a rural population. Physicians have to send record of birth to town clerk of Tp. (or health officer) in which birth occurs instead of direct to register of deeds at county seat. Often a certificate is sent to some farmer town clerk and he forgets or neglects to record it. Very often also one does not know who is town clerk of that Tp. It is utterly impossible for me to give record of deaths from certain diseases in this Tp. There are seven doctors in Lancaster; it's a long Tp. Doctors from Fennimore attend patients in north end of it, also a doctor in Stitzer. You can send them blanks and requests but they do not take the trouble to fill them out; in fact, a great many do not keep a record, and if they do they do not know whether they lived in Lancaster or perhaps next township.

J. GODFREY, M. D., H. O.

*Platteville City:* Population 3,600. Health officer receives a salary of \$50 per annum. There are three public school buildings besides the normal school. Sanitary condition good. Health officer is authorized by resolution of the board to act in any emergency. Source of water supply from artesian wells; quality good. No sewerage system. During the year there have been 24 cases of scarlet fever with 1 death; 7 cases of typhoid fever with no deaths; 10 cases of measles, 20 cases of whooping cough with no deaths; 1 case of diphtheria with 1 death; 60 cases of la grippe with 1 death; 30 cases of dysentery with no deaths; 70 cases of diarrhoea with 1 death; 16 cases of cholera morbus with one death; 8 cases of consumption with 4 deaths; 42 cases of pneumonia with 2 deaths. The law requiring the report of dangerous contagious diseases is observed and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

JAS. OETTIKER, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## GREEN COUNTY.

*Adams Tp.:* Health officer receives no salary. (Number of school buildings not given.) Source of water supply from wells and springs. No sewerage system. Have no means of knowing the number of cases of contagious disease as the law is not observed. General reasons for non-compliance with this law are isolation of houses; ignorance of laws, and no village. No effort is made to restrict the spread of contagious disease. The laws requiring the report of births and the issuing of burial permits are not observed.

Z. W. MONROE, M. D., H. O.

*Browntown Vil.:* Population 370. Health officer receives no salary. There is one public school building; sanitary condition good. Health officer is given power by recorded resolution of the board to act in any emergency. Source of water supply from wells. No sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of dangerous contagious disease is observed and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births, and the issuing of burial permits are observed. I would suggest vaccinating those that have not been vaccinated during the past five years.

C. H. CARY, M. D., H. O.

## GREEN LAKE COUNTY.

*Berlin City:* Population, 4,700. Health officer receives a salary of \$30 and expenses. There are three public school buildings; sanitary condition good. The health officer is authorized by recorded resolution to act in the name of the board in any emergency. Source of water supply, artesian wells, 500 feet deep. Supply first class. Good sewerage system; empties into the Fox river. During the year there have been 8 cases of scarlet fever with 1 death; 4 cases of whooping cough with no deaths; 9 cases of pneumonia with 3 deaths; 20 cases of la grippe with no deaths; 18 cases of dysentery; 90 cases of diarrhoea with no deaths; 30 cases of cholera morbus with no deaths; 6 cases of consumption with 2 deaths. The law requir-

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*Extracts from Health Officers' Correspondence.*

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ing the report of dangerous contagious disease is observed, and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. With the Polish element we have it is surprising that our city has so little contagious disease. Our water supply being good, and our good drainage system are no doubt the cause of our good fortune in this respect.

A. P. HUBBARD, M. D., H. O.

IOWA COUNTY.

*Avoca Village:* Population, 400. *Avoca Township,* population, 1,200. Health officer receives no salary. There are four public school buildings, in good sanitary condition. Health officer is authorized by recorded resolution to act in the name of the board in any emergency. Source of water supply is from wells. No sewerage system. During the year there have been 2 cases of diphtheria with no deaths; 1 case of typhoid fever with 1 death; 21 cases of measles; 18 cases of whooping cough, with no deaths; 12 cases of pneumonia with 1 death; 19 cases of la grippe with no deaths; 9 cases of dysentery with 1 death; 5/4 cases of diarrhoea, 6 cases of cholera morbus, with no deaths; 2 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board is notified. The laws requiring the report of births, and the issuing of burial permits are observed. The general result of efforts to restrict the spread of contagious disease is encouraging.

J. F. MANN, M. D., H. O.

*Mineral Point City:* Population, 3,000. Health officer receives a salary of \$50 per annum. There are three public school buildings, sanitary condition good. Health officer is given authority by recorded resolution of the board to act in any emergency. Source of water supply from wells pumped to reservoir. Quality good. No sewerage system. There have been no reports of contagious disease except 1 case of whooping cough with no deaths; 50 cases of diarrhoea with 2 deaths;

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*Extracts from Health Officers' Correspondence.*

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25 cases of cholera morbus with no deaths; 2 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is fairly well observed; the law requiring the issuing of burial permits is observed.

W. EASTMAN, H. O.

IRON COUNTY.

*Hurley:* Population, 2,500. Health officer receives a salary of \$20 per month, which includes medical attendance and medicine for all of the poor in the town. Health officer is given authority by recorded resolution of the board to act in any emergency. Source of water supply is Montreal river; quality fair. Sewerage system empties into Montreal river. During the year there have been 7 cases of diphtheria with 3 deaths; five cases of scarlet fever with no deaths; 100 cases of typhoid fever with 4 deaths; 25 cases of pneumonia with 5 deaths; 4 deaths from consumption. The law requiring the report of dangerous contagious diseases is fairly well observed. People are afraid of quarantine. The laws requiring the report of births and the issuing of burial permits are observed.

T. J. HAMBLEY, M. D., H. O.

*Saxon Township:* Five public school buildings; sanitary condition good. Health officer is not given authority by recorded resolution to act in the name of the board in any emergency. Source of water supply, open wells. No sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of contagious disease is observed. The laws requiring the report of births and the issuing of burial permits are observed.

HORACE PEARSON, H. O.

JACKSON COUNTY.

*Black River Falls:* Population, 2,000. Health officer receives a salary of \$50 per annum. There are two public school

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*Extracts from Health Officers' Correspondence.*

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buildings; sanitary condition first class. Health officer is authorized by recorded resolution of the board to act in any emergency. Source of water supply, from a small stream of water flowing from several springs. No sewerage system. During the year there have been reported 2 cases of diphtheria with no deaths; 20 cases of whooping cough with 4 deaths; 6 deaths from pneumonia; 50 cases of la grippe with no deaths; 8 cases of cholera morbus with 3 deaths; 6 cases of consumption with 6 deaths. The law requiring the report of dangerous contagious diseases is observed and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

JAS. ROBIE, M. D., H. O.

*Garfield:* Population, 800. Health officer receives no salary. There are five public school buildings; sanitary condition good. Health officer is not authorized by recorded resolution of the board to act in any emergency. Source of water supply from wells; quality good. No sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of dangerous contagious disease is observed and the State Board promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not fully observed. The law requiring the issuing of burial permits is observed. Being a country district it is quite healthy; would suggest that all health officers receive pay from the state, and they should be required to make inspections once every year.

MARTIN LUND, H. O.

*Merrillan Village:* Population, 1,000. Health officer receives a salary of \$50 per annum. There is one public school building; sanitary condition good. Health officer is given authority by recorded resolution to act in the name of the board in any emergency. Source of water supply from wells; quality good, except an excess of iron. There is no sewerage system. There have been no reports of contagious disease during the year. The law requiring the report of dangerous contagious disease is observed, and the State Board promptly notified.



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*Extracts from Health Officers' Correspondence.*

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General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. It has been unusually healthy and we have had no contagious diseases except tuberculosis which we are beginning to class as such. We have much bronchial and nasal trouble in this vicinity but very little serious lung trouble.

E. E. MOORE, M. D., H. O.

## JEFFERSON COUNTY.

*Ft. Atkinson:* Population, 3,150. Health officer receives a salary of \$40 per annum. There are five public school buildings; sanitary condition good. The health officer is given authority by recorded resolution to act for the board in any emergency. Source of water supply is mostly from wells; no sewerage system. During the year there have been 4 cases of scarlet fever with no deaths; 1 case of diphtheria with 1 death; 2 cases of typhoid fever; 3 cases of measles with no deaths. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health is always notified. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

EDGAR J. GIBSON, M. D., H. O.

*Jefferson City:* Population, 3,000. Health officer receives a salary of \$25 per annum. There are two public school buildings in good sanitary condition. Health officer is authorized by recorded resolution to act in the name of the board in any emergency. Source of water supply from drilled wells. No sewerage system. During the year there has been reported but 1 case of diphtheria with no deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board notified at once. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births, when attended by physicians, is observed; otherwise not. The law requiring the issuing of burial permits is observed.

G. I. SMITH, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Lake Mills:* Population, 1,800. Health officer receives a salary of \$25 per annum. Number of school buildings, three; sanitary condition good. Health officer is authorized by recorded resolution to act for the board in any emergency. Source of water supply from well; drilled some 600 feet. Water is pure. Sewerage system empties from creek into Rock river. There have been no cases of contagious disease reported during the year except 3 cases of whooping cough with no deaths; 10 cases of pneumonia with 3 deaths; 17 cases of la grippe with no deaths; 30 cases of dysentery with 4 deaths; 40 cases of diarrhoea; 20 cases of cholera morbus with no deaths; 3 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is strictly enforced and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are strictly observed. I have been health officer for seven years. There has been great improvement in sanitary matters yearly.

F. HENRY DODGE, M. D., H. O.

*Watertown:* Population, 10,000. Commissioner of health receives a salary of \$100 per annum. There are four public school buildings; sanitary condition fair. Source of water supply, artesian wells. Sewerage system empties into river. During the year there have been reported 2 cases of scarlet fever with no deaths; 1 case of diphtheria with 1 death; 4 cases of typhoid fever with no deaths; 1 case of pneumonia with 1 death; 2 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. While the sanitary conditions are not just as they ought to be, I must confess I have the co-operation of physicians and public. Our streets are not in a sanitary condition owing to the fact that they are not paved, save Main street. It is not difficult to find gutters filled up with rubbish and decayed material on the outlying streets. In a number of cases we find property owners facing Main street and not connected with the sewerage system, so must say in a number of cases privy vaults are in close proximity to Main street. As we have natural drainage in a num-

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*Extracts from Health Officers' Correspondence.*

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ber of directions the surface water does not become stagnant, which materially aids us in keeping our streets free from decayed substances. Our street commissioner has and does clean to the fullest capacity of funds on hand.

The sooner tuberculosis is recognized by the laity as a contagious disease, the more effective we can combat against its rapid invasion among the populace. The alarming increase it has made during the last few years ought to convince the legislators to enact more stringent laws preventing the tubercular people from commingling with the healthy. My report only dates from May 1st, the day and date of my commission.

J. M. SLEICHER, M. D., H. C.

JUNEAU COUNTY.

*Elroy:* Population, 1,800. Salary of health officer, \$25 per annum. Two public school buildings; sanitary condition good. Source of water supply, two artesian wells, 150 feet deep. Quality good. No sewerage system. During the year there have been reported 4 cases of typhoid fever with no deaths; 12 cases of pneumonia with 2 deaths; 20 cases of diarrhoea with no deaths. The law requiring the report of dangerous contagious disease is generally observed, and the State Board promptly notified. The general result of efforts to restrict the spread of contagious disease is very encouraging. The law requiring the report of births is not observed; the law requiring burial permits is observed. The first duty upon taking the office of health commissioner was to condemn the stock yards of the C. & N. W. R. R. Co. which were located in the center of the city. They were a source of filth, a nuisance, and a cause of sickness, and had been for the past ten or twelve years. They are now located on the outer edge of the city limits. During the past ten or twelve years there had been petition after petition presented to the city council for their removal, but they did not have the power to cause them to be removed, or at least no action was taken in regard to the matter. There have been several other unsanitary conditions removed which had existed for a year or so.

A. T. GREGORY, M. D., H. C.

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*Extracts from Health Officers' Correspondence.*

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## KENOSHA COUNTY.

*Kenosha City:* Population, about 10,000. Health officer receives a salary of \$50 per annum. There are five public school buildings; all in good sanitary condition. Health officer is given authority by recorded resolution of the board to act in any emergency. Source of water supply, artesian wells and lake water. Complete system of sewerage; empties into Lake Michigan. From May 1st to September 30th, 1900, there have been reported 2 cases of diphtheria with no deaths; 10 cases of scarlet fever, 8 cases of typhoid fever, 2 cases of measles, with no deaths; 4 cases of pneumonia with 4 deaths; 6 cases of consumption with 6 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health notified. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. There has been no vaccination in a general way for some time, and this is being considerably neglected as to children.

OWEN O'HARE, H. O.

## KEWAUNEE COUNTY.

*Algoma:* Population, 1,700. Health officer receives a salary of \$20 per annum. There are two public school buildings; sanitary condition good. There is no public water supply only for fire department from cisterns. No sewerage system. During the year there have been reported 3 cases of diphtheria with no deaths; 1 case of smallpox with no death; 28 cases of scarlet fever with 1 death. The law requiring the report of dangerous contagious disease is observed and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed by physicians; not by others. The law requiring the issuing of burial permits is observed.

G. R. BARTRAN, M. D., H. O.

*Kewaunee City:* Population, 1,800. Health officer receives a salary of \$40 per annum. There are two public school buildings; sanitary condition good. Health officer is given authority

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*Extracts from Health Officers' Correspondence.*

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by recorded resolution of the board to act in any emergency. Source of water supply, dug and bored wells; quality fairly good. No sewerage system. During the year there have been reported 4 cases of diphtheria, 12 cases of scarlet fever, with no deaths; 8 cases of typhoid fever with 1 death; 1 death from dysentery; 2 deaths from cholera morbus; 1 death from consumption. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births, and the issuing of burial permits are observed.

FRANK J. OLLE, H. O.

LA CROSSE COUNTY.

*La Crosse:* Population 29,000. Health officer receives a salary of \$50 per month. There are nine public school buildings; all in good sanitary condition. The health officer is given authority by recorded resolution of the board to act in any emergency. During the year teams have been employed to draw garbage, costing about \$800. Source of water supply, from artesian wells, driven wells, and the Mississippi river. During the year there have been reported 30 cases of diphtheria with 3 deaths; 78 cases of scarlet fever with no deaths; 3 cases of typhoid fever and five deaths; 5 cases of measles; 1 case of whooping cough; 19 deaths from pneumonia; 2 deaths from dysentery; 1 death from diarrhoea; 39 deaths from consumption. The law requiring the report of dangerous contagious disease is observed and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. Our physicians report cases of diphtheria and scarlet fever promptly but fail to report other cases named on the list. I called the attention of the doctors by postal cards in regard to reporting these cases as required by the state law.

R. D. MURPHY, H. C.

LAFAYETTE COUNTY.

*Darlington:* Health officer receives a salary of \$10 per annum. There are two public school buildings; sanitary condi-

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*Extracts from Health Officers' Correspondence.*

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tion good. Health officer is given authority by recorded resolution to act for the board in any emergency. The special sanitary work done during the year consisted of having all alleys cleaned several times, and have caused privy vaults to be cleaned and disinfected whenever it was thought to be necessary. Also streets cleaned. This has been done by the property owners on word from health board. Source of water supply is from waterworks situated at edge of city; quality excellent. No sewerage system. During the year there have been reported 14 cases of scarlet fever with 2 deaths; 2 cases of typhoid fever with no deaths; 8 cases of pneumonia with 2 deaths; 15 cases of dysentery; 40 cases of diarrhoea; 15 cases of cholera morbus, with no deaths; 4 cases of consumption with 3 deaths. The law requiring the report of dangerous contagious disease is observed except in measles, whooping cough, and other milder diseases. The State Board of Health is promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

E. S. HOOPER, M. D., H. O.

*Gratiot Village:* Population, 400. Health officer receives a salary of \$10 per annum. There is one public school building; sanitary condition good. Health officer is given authority, by recorded resolution of the board, to act in any emergency. Source of water supply, common shallow wells; quality of water good. No sewerage system. During the year there have been reported 4 cases of measles; 1 case of small-pox; 1 case of typhoid fever; 1 case of pneumonia; 10 cases of la grippe with 2 deaths; 2 cases of dysentery; 20 cases of diarrhoea; 5 cases of cholera morbus; 1 case of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed, and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

S. BIRKBECK, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## LANGLADE COUNTY.

*Antigo*: Population, 1,000. Health officer receives a fee of \$2 a day for time spent. There are six public school buildings, sanitary condition good, as far as known. The health officer is given authority by recorded resolution to act for the board in any emergency. (Source of water supply reported to be good but origin not given.) No cases of contagious disease reported during the year. The law requiring the report of dangerous contagious disease is observed. The law requiring the report of births and the issuing of burial permits are observed.

WILLIAM BRENNECKE, H. O.

*Summit Township*: Population, 250. Health officer receives no salary. Public school buildings, five; sanitary condition good. Health officer is not given authority by recorded resolution to act in the name of the board in any emergency. Source of water supply from wells; nearly all good. No sewerage system. With the exception of one case of scarlet fever no contagious diseases have been reported during the year. The law requiring the report of dangerous contagious disease is not observed on account of ignorance of the law. The general result of efforts to restrict the spread of contagious disease is discouraging. The laws requiring the report of births and the issuing of burial permits are observed.

WENCEL WILDMAN, H. O.

## LINCOLN COUNTY.

*Merrill City*: Population, 10,000. Health officer receives a salary of \$150 per annum. There are six public school buildings; sanitary condition good. Health officer is given authority by recorded resolution of the board to act in any emergency. Special attention has been given to cleaning the streets and alleys. Source of water supply, driven wells, but mostly Prairie river, which is filtered by the Jewell Gravity Filter part of the time but it seems to be defective at times. Drainage into the Wisconsin river. During the year there have been reported 4 cases of diphtheria with 1 death; 50 cases of scarlet fever with 2 deaths; 20 cases of typhoid fever with no

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*Extracts from Health Officers' Correspondence.*

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deaths; 50 cases of whooping cough with no deaths; 100 cases of pneumonia with 2 deaths; 400 cases of la grippe with 2 deaths; 100 cases of dysentery with 2 deaths; 200 cases of diarrhoea with no deaths; 300 cases of cholera morbus with 20 deaths; 25 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is fairly well observed; the law requiring the issuing of burial permits is observed.

L. B. COLLIER, M. D., H. O.

*Russell Township:* Population, 500. Health officer receives a salary of \$2 per day when discharging his duties. There are six public school buildings; all in excellent sanitary condition. Health officer is given authority, by recorded resolution, to act in the name of the board in any emergency. Source of water supply excellent, (origin not given). There is no sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of dangerous contagious diseases is observed, and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. We are encouraged on the whole by the sanitary arrangements, and the pride our people show in helping me in my work as health officer.

C. DETJENS, H. O.

MANITOWOC COUNTY.

*Cato Township:* Population, 2,000. Health officer receives no salary. There are seven public school buildings; sanitary condition very good. Health officer is not given authority to act in any emergency. Source of water supply, wells drilled into the rock. No sewerage system. During the year there have been reported 8 cases of diphtheria with 1 death; 10 cases of scarlet fever with no deaths; 1 case of typhoid; 15 cases of measles with 2 deaths; 25 cases of pneumonia with 3 deaths; 30 cases of la grippe; 15 cases of dysentery with 1



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*Extracts from Health Officers' Correspondence.*

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death; 5 cases of diarrhoea; 20 cases of cholera morbus with 2 deaths; 7 cases of consumption with 7 deaths. The law requiring the report of dangerous contagious disease is observed; the State Board of Health is not always promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. The general condition of the health of the people of this town is very good. Much improved as compared with ten years ago.

R. S. O'CONNELL, M. D., H. O.

*Manitowoc:* Population, 15,000. Health officer receives a salary of \$150.00 per annum. There are five public school buildings; sanitary condition excellent. The health officer is given authority by recorded resolution of the board to act in any emergency. During the year a good brick house, with ten acres of land, has been bought, two miles south of the city, for use as a hospital for contagious diseases. Cost, \$1,600. Piggens, slaughter houses, and privies continue to be the main causes of complaint, and are without question sources of danger to public health and comfort. Source of water supply, public water works. Sewage empties into the river. During the year there have been reported 19 cases of diphtheria with 7 deaths; 8 deaths from scarlet fever; 2 deaths from typhoid fever; 10 deaths from la grippe; 13 deaths from diarrhoea; 15 deaths from consumption. The law requiring the report of dangerous contagious disease is observed and the State Board notified. The general result of efforts to restrict the spread of contagious disease is discouraging. In scarlet fever many cases are so light that no physician is called. This disease has probably visited four-fifths of the families during the year. The law requiring the report of births and the issuing of burial permits are observed. I cannot report number of cases of scarlet fever for reasons stated above, and also because physicians generally report the first case, and fail to report any succeeding ones in the same family. For the same reason I do not believe that the number of cases of any disease is ever correct in these reports,

W. G. KEMPER, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Two Rivers:* Population, 4,000. Health officer receives a salary of \$140 per annum. This is for health and city physician services. There are four public school buildings; sanitary condition fairly good. The health officer is given authority by recorded resolution to act in the name of the board in any emergency. The principal sanitary work done during the year has been watching and condemning wells; regulating and condemning pigpens, vaults, etc. Source of water supply is from wells. We will have waterworks system in a few months. Sewerage system into river. During the year there have been reported 2 deaths from diphtheria; 20 cases of typhoid fever with 1 death; 10 cases of whooping cough with 1 death; 9 deaths from consumption. Measles are not well reported. The law requiring the report of dangerous contagious disease is generally well observed and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births, and the issuing of burial permits are observed. The water supply is our greatest danger. Expect to have a new water system by July 1st, 1901.

J. R. CURRENS, M. D., H. O.

MARATHON COUNTY.

*Marathon City:* Health officer receives a salary of \$10 per annum. There is one public and two parochial schools. Sanitary condition good. Health officer is given authority by the board to act in any emergency. There is no public water supply. No sewerage system. There has been reported but one case of diphtheria and one case of scarlet fever during the year. The law requiring the report of dangerous contagious disease is observed and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births, and the issuing of burial permits are observed.

H. E. BERRES, H. O.

*Reitbrock Township:* Population, 1,016. Health officer receives a salary of \$2 per day for actual services. There are three public schools; sanitary condition good. Health officer

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*Extracts from Health Officers' Correspondence.*

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is given authority by recorded resolution to act in the name of the board in any emergency. Source of water supply very good (origin not given). No sewerage system. The diseases reported during the year are 1 case of diphtheria with no deaths; 3 cases of whooping cough with 1 death; 2 cases of dysentery with no deaths. The law requiring the report of dangerous contagious diseases is observed, and the State Board of Health notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

JOSEPH CHESAK, H. O.

MARINETTE COUNTY.

*Marinette City:* Population, 16,000. Health officer receives a salary of \$200 per annum. There are seven public school buildings; sanitary condition good. Source of water supply, Green Bay. Sewerage system empties into Green Bay. During the year there have been reported 2 cases of diphtheria with one death; 11 cases of scarlet fever with no deaths; 102 cases of typhoid fever with 9 deaths; 24 cases of measles with no deaths; 20 deaths from pneumonia; 24 deaths from diarrhœa; 10 cases of consumption and 24 deaths. The law requiring the report of dangerous contagious diseases is observed, particularly in relation to scarlet fever and diphtheria; not so well in relation to tuberculosis, typhoid fever, measles, etc. The State Board of Health is promptly notified. The law requiring the report of births is indifferently observed. The law requiring the issuing of burial permits is observed. A sanitary inspector has been in constant employ during the past year. Special attention has been directed to the cleaning of streets and alleys, vaults and nuisances. A Jewel Gravity Filter plant for the purification of our water was installed, and is in operation since August 1, 1900. About \$680 has been expended for sanitary work. Filter plant was built by water company. For some reason the efforts necessary to establish a sanitary condition are in disrepute. One's most honest endeavor is thwarted by the common council. We made an effort to pass an ordinance to improve the supervision of the milk supply but it was twice defeated, and yet we think it was fair and equitable to all, hav-

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*Extracts from Health Officers' Correspondence.*

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ing only in view the betterment of milk sold in our city. We feel too that the state does not aid the local health officials enough through the State Board of Health. Our vital statistics are worthless. The state should exercise an absolute control of the water supply of our cities and also the sewage disposal. A map showing the population of water sheds, and the purity of water in streams, would afford a great saving to many cities. Something should be done to remove the health officer from the political spoils system. His compensation should bear some relation to the population over which he has jurisdiction. The organization of the health officials of the state into a society, or the holding of a convention for such officers, for mutual advancement, would prove a good thing. The profession is largely to blame for the disrepute into which the health office has fallen. These suggestions are made as they hastily suggest themselves to my mind. The State Board is probably handicapped by the state officials and law-makers as the health officer is handicapped by the local authorities. Wisconsin is far behind some of her sister states in sanitary work. Massachusetts, Ohio and Michigan put us to shame. Let us have an awakening.

T. J. REDELINGS, M. D., H. O.

*Peshtigo Village:* Population, 2,068. Salary of health officer \$25.00 per annum, including professional attendance to village poor. There are five public school buildings in good sanitary condition. Health officer is given authority by recorded resolution to act for the board in any emergency. The source of water supply is from wells; quality good. No sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of dangerous contagious diseases is observed, and the State Board notified. The laws requiring the report of births and the issuing of burial permits are observed.

J. N. AUBIN, M. D., H. O.

MARQUETTE COUNTY.

*Oxford Township:* Number of public school buildings unknown. Sanitary condition unknown. Health officer is not given authority to act in the name of the board in any emergency. Source of water supply is from wells, 12 to 100 feet

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*Extracts from Health Officers' Correspondence.*

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deep. No sewerage system. During the year there have been reported 1 case of diphtheria with 1 death; 2 cases of scarlet fever with no deaths; 1 case of pneumonia with 1 death; 1 death from la grippe. The law requiring the report of dangerous contagious diseases is not observed. The people consider the duties of a health officer as an imposition on their private matters, and will not pay for disinfecting. The general result of efforts to restrict the spread of contagious disease is satisfactory where effort is made, but discouraging from lack of assistance from town board and board of health. The law requiring the report of births is partially observed; the law requiring the issuing of burial permits is not observed, although I have done all I could to compel its observance. The efforts of the health officer in this town receive no moral or financial support. He is powerless consequently so far as preventing the spread of contagious disease is concerned. Typhoid fever is not a disease to be dreaded in this country for every case I have had has yielded to treatment. About the only diseases found here are the direct or indirect result of the following: exposure to cold, overwork, and troubles arising from eating too much, poor food, fasting, etc. (contagious diseases excepted). Typhoid fever, malaria, cholera infantum, and such diseases are rare, and more easily managed than in some southerly places. I think that the health officer should always be a physician (he might have lieutenants among the laity) and should be appointed by the State Board of Health, and should be accountable to them only. In the present condition, ignorance, petty jealousies, and stingy methods prevent any common sense actions of a health officer and make his office a farce. In other cases the same conditions might act the other way and allow unnecessary expense to the tax payers. I disinfected the house where a man had died of diphtheria, having paralysis of the larynx and vocal cords; disinfected every room carefully with formaldehyde gas, and conducted the funeral, making six trips altogether, a distance of five miles. I also purchased the Moffat generator; a large supply of antitoxin and atomizers; five gallons of wood alcohol and a Dyer incubating set at a total cost of \$70. I sent in a bill for \$20 for disinfecting, and was only allowed \$10. When the two cases of scarlet fever were here in town no regular disinfection was carried out. The disinfecting consisted of 5 quarts of wood alcohol, 5 pounds of chloride of lime, 2 atomizers and antiseptic solution for them; 60 miles travel; examina-

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*Extracts from Health Officers' Correspondence.*

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tion and disinfection several times of the attendants, and the services of an assistant most of the time.

C. L. FAIRBANKS, M. D., H. O.

*Springfield Township:* Health officer receives no salary. There are five public schools; sanitary condition good. The health officer is given authority by recorded resolution to act for the board in any emergency. Source of water supply, wells and fountains and creeks. No sewerage system. With the exception of 1 case of scarlet fever with no deaths, no contagious diseases have been reported. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed; the law requiring the issuing of burial permits is not observed. I do not get any pay for work done in this direction, and I cannot afford to give it much time.

AUGUST DUESTERHOEFT, H. O.

MILWAUKEE COUNTY.

*Milwaukee City:* Population, 280,000. Health officer receives a salary of \$2,500 per annum. There are fifty-two public school buildings; sanitary condition reported good. Water supply from lake Michigan, quality good. Sewerage empties into lake Michigan. During the year there have been reported 746 cases of diphtheria with 125 deaths; 2,158 cases of scarlet fever with 86 deaths; 310 cases of typhoid fever with 56 deaths; 423 cases of measles with 34 deaths; 38 deaths from whooping cough; 305 deaths from pneumonia; 4 deaths from la grippe; 426 deaths from diarrhoeal diseases; 366 deaths from consumption. The law requiring the report of dangerous contagious diseases is observed, and the State Board notified weekly. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and issuing of burial permits are observed.

F. M. SCHULZ, M. D., H. C.

*Wauwatosa City:* Population 3,000. Health officer receives a salary of \$100 per annum. There are four public school buildings; sanitary condition good. Source of water supply, artesian wells. No sewerage system. During the year there have been reported 6 cases of diphtheria with no deaths; 4

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*Extracts from Health Officers' Correspondence.*

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cases of scarlet fever with no deaths; 3 cases of typhoid fever with no deaths. The law requiring the report of dangerous contagious diseases is fairly well observed. Only one physician gives any trouble. The State Board of Health is promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not observed; the law requiring the issuing of burial permits is observed.

D. G. HATHAWAY, M. D., H. C.

*Whitefish Bay:* Population about 500. Health officer receives no salary; only fees. There is but one public school building; sanitary condition first class. Source of water supply, wells. No sewerage system. There have been no contagious diseases reported during the year. The laws requiring the report of births and the issuing of burial permits are observed. Whitefish Bay, marked 2 on the statistical map of the United States, is blessed with such good health that our board of health heretofore has existed as a formality to comply with the law.

T. W. WILLIAMS, M. D., H. O.

MONROE COUNTY.

*Sparta:* Health officer receives a salary of \$50.00 per annum. There are six public school buildings; sanitary condition good. Health officer is given authority by recorded resolution to act for the board in any emergency. Source of water supply, artesian wells; quality good. Sewerage system empties into La Crosse river. During the year there have been reported 4 cases of scarlet fever with 1 death; 3 cases of typhoid fever with no deaths; 3 cases of measles; 25 cases of pneumonia with 3 deaths; 60 cases of dysentery with no deaths; 1 death from diarrhoea; 1 death from cholera morbus; 8 deaths from consumption. The law requiring the report of dangerous contagious diseases is observed, but the State Board is not always notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births, and the issuing of burial permits are observed.

O. W. STILES, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## OCONTO COUNTY.

*Oconto City:* Estimated population, 7,000. Health officer receives a salary of \$100 per annum. There are four public and three parochial schools; sanitary condition fairly good. The health officer is authorized by recorded resolution to act for the board in any emergency. Source of water supply from artesian wells; quality good. Sewerage system drains into the river. During the year there have been reported 9 cases of diphtheria with 4 deaths; 5 cases of scarlet fever with no deaths; 15 cases of typhoid fever with 3 deaths; 10 cases of la grippe with no deaths; 8 cases of consumption with 4 deaths. The law requiring the report of dangerous contagious disease is observed. There has been some neglect in always promptly notifying the State Board of Health. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not universally observed, nor can it be under present system of reporting. The law requiring the issuing of burial permits is observed.

E. F. PARAMORE, M. D., H. O.

## ONEIDA COUNTY.

*Rhineland:* Population, 5,500. City organized under general charter law that provides for commissioner of health, who receives a salary of \$200 per annum. There are five public school buildings; sanitary condition fairly good. Source of water supply, Wisconsin river above dam; quality fairly good. Sewerage system empties into the Wisconsin river below dam. During the year there have been reported 5 cases of diphtheria, 5 cases of scarlet fever, with no deaths; 38 cases of typhoid fever with 4 deaths; 17 cases of measles with 1 death; 24 cases of pneumonia with 5 deaths; 200 cases of la grippe with 3 deaths; 100 cases of dysentery with 8 deaths; 20 cases of consumption with 4 deaths. The law requiring the report of dangerous contagious diseases is observed except in typhoid fever and tuberculosis. The State Board of Health is promptly notified. General result of efforts to restrict the spread of contagious disease encouraging. The law requiring the report of births is not observed; the law requiring the issuing of burial permits is observed.

F. L. HINMAN, M. D., H. C.



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*Extracts from Health Officers' Correspondence.*

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## OUTAGAMIE COUNTY.

*Hortonville Village:* Population, 1,000. Health officer receives a salary of \$10 per annum. There is one public school building; sanitary condition good. Health officer is not given authority by recorded resolution to act in the name of the board in any emergency. Source of water supply, private wells. There is no sewerage system. During the year there have been reported 5 cases of diphtheria with no deaths; 2 cases of typhoid fever with 1 death; 20 cases of whooping cough with no deaths; 9 cases of cholera morbus with 1 death; 1 case of consumption with 1 death. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed; the law requiring the issuing of burial permits is partially observed.

JOHN REINEKING, M. D., H. O.

*Kaukauna:* Population, 6,000. Health officer receives a salary of \$150 per annum. There are two public school buildings; sanitary condition good. The health officer is given authority by recorded resolution to act in the name of the board in any emergency. Source of water supply; artesian wells; quality good. Sewerage system empties into Fox river. With the exception of 6 cases of diphtheria and 3 cases of measles, with one death from the latter disease, there have been no contagious diseases during the past year. We have had 100 cases of la grippe with 10 deaths; 35 cases of diarrhoea with 5 deaths; 15 cases of cholera morbus with 3 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health promptly notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is partially observed; the law requiring the issuing of burial permits is observed. Only such diseases as are dangerous and contagious are reported to the Board of Health, hence we are unable to give a full report of other sickness that has occurred. The apparently greater prevalence of influenza here may be accounted for by the fact that the germs were imported largely by train crews, this being a division center. Eleven years ago it was epidemic, and its influence in producing and complicating other diseases has been felt ever since. This report embraces but five months

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*Extracts from Health Officers' Correspondence.*

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of the year, since I have been in office. My predecessor failed to contribute the report for the other seven months.

J. QUINLAN, M. D., H. O.

OZAUKEE COUNTY.

*Port Washington:* Population, 4,000. There are five public school buildings; sanitary condition good. There is a general understanding that the health officer is to act for the board in any emergency. Source of water supply, springs, drilled wells, wind-mill pump. No sewerage system. During the year there have been reported 2 cases of diphtheria with 1 death; 1 case of scarlet fever with no deaths; 7 cases of typhoid fever with 1 death; 1 case of measles with no death; 2 cases of pneumonia with 2 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board promptly notified. In regard to the result of efforts to restrict the spread of dangerous contagious disease I have had no particular struggle to contend with. The laws requiring the report of births and the issuing of burial permits are observed.

M. ANDIER, H. O.

PEPIN COUNTY.

*Durand City:* Population, 1,800. Health officer receives a salary of \$75 per annum as health officer and city physician. There are two public school buildings; sanitary condition good. This report dates from June 1st to September 30th, 1900. Sanitary conditions are not good on two blocks on Madison street. Should have a sewer with private sewerage connections. I have repeatedly called the attention of the authorities to the necessity of this. Source of water supply from wells. Sewage empties into Chippewa River. There have been no contagious diseases reported this year except 4 cases of typhoid fever with 2 deaths. The law requiring the report of dangerous contagious disease is observed since my term of office, and the State Board of Health notified. General result of efforts to restrict the spread of contagious disease encouraging. The laws requiring the report of births and the issuing of burial permits are observed. The physicians have not been in the habit of reporting any diseases except diphtheria and scarlet fever. Other

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*Extracts from Health Officers' Correspondence.*

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diseases that occasionally occur have never been reported. The Council usually have complied with the laws so far as organizing is concerned and that is about all, though in case of an epidemic I have always acted promptly and efficiently with sanction of the board when I have been in office. Personally, as a public officer, I have done considerable work in securing improved condition on private grounds. I am aware that technically my report is not very full and I have found it a hard matter to fully carry out the intent of the law, but have been able to carry it out in spirit of reform. I think that the city authorities ought to be personally reminded of their duties by a copy of the laws and their personal attention called to the provisions.

MYRON A. SHAW, M. D., H. O.

*Stockholm:* Population, 900. There are three public school buildings; sanitary condition good. Health officer is not authorized by recorded resolution to act for the board in any emergency. Water supply from springs. No sewerage system. There have been reported during the year 3 cases of smallpox with no deaths; 1 case of whooping cough with 1 death; 2 cases of cholera morbus with 1 death; 2 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board of Health notified. The law requiring the report of births is partially observed; the law requiring the issuing of burial permits is observed.

ELMER E. LARSON, H. O.

PIERCE COUNTY.

*River Falls City:* Population, 2,000. There are two public school buildings; sanitary condition good. Health officer is authorized by recorded resolution of the board to act in any emergency. Source of water supply, artesian wells 500 feet deep. No sewerage system. There have been reported 1 case of scarlet fever; 2 cases of typhoid fever, with no deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. At present a large proportion of children are vaccinated owing

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*Extracts from Health Officers' Correspondence.*

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to the smallpox scare at Hudson, although it did not spread from there. The law requiring the report of births is observed; the law requiring the issuing of burial permits is not well observed.

E. ALLEN TOBY, M. D., H. O.

POLK COUNTY.

*Omega Village:* Health officer receives no salary. There are six public school buildings; sanitary condition good. Health officer is authorized by recorded resolution of the board to act in any emergency. Source of water supply from wells and springs. No sewerage system. During the year there have been reported 50 cases of measles with no deaths; 2 cases of pneumonia with 1 death; 7 cases of la grippe; 1 case of dysentery; 5 cases of diarrhoea, with no deaths; 1 case of consumption with 1 death reported. The law requiring the report of dangerous contagious disease is observed, and the State Board promptly notified. Vaccination has been sadly neglected. General results of efforts to restrict the spread of contagious disease have been encouraging when it has been necessary to take any action. The laws requiring the report of births and the issuing of burial permits are observed. We have a private well on Main street, used publicly, and horses have been allowed to approach and drink therefrom; of course manure is deposited close by. I have made complaint to Board of Health but they consider themselves helpless because it is a private well. I may add that so far no sickness could be attributed to it.

JACOB VISSER, M. D., H. O.

PORTAGE COUNTY.

*Stevens Point:* Population about 10,000. Health board working under charter provisions. Health commissioner receives a salary of \$200 per annum. There is one State Normal school, High school, seven ward schools, and three parochial schools; sanitary condition good in most buildings. Health officer is given authority by the board to act in any emergency. Source of water supply, Wisconsin river; quality very changeable, as shown by analysis made by the State Board of Health. Sewerage system empties into the Wisconsin river. During the year there have been reported 4 cases of scarlet fever; 20 cases of ty-

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*Extracts from Health Officers' Correspondence.*

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phoid fever; 1 case of measles; 2 deaths from pneumonia; 6 deaths from cholera morbus; 7 deaths from consumption. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagious disease is encouraging. A large number of children were vaccinated about five years ago, also adults, by order of the Board of Health. The laws requiring the report of births, and the issuing of burial permits are observed. Conditions very favorable for an epidemic of typhoid fever in this city. Larger number of cases in city during summer and fall than previously; also in surrounding country. Probably due to dry season, followed by long continued rains and flood. A number of cases imported into vicinity from Star Lake, Wis. This report covers period from April 15, 1900, to September 30th, 1900.

C. VON NEUPERT, Jr., M. D., H. O.

PRICE COUNTY.

*Knox Township:* Population, 500. There are three public school buildings; sanitary condition good. Health officer is not authorized to act for the board in any emergency. Source of water supply, wells, on the various premises. No sewerage system. During the year there have been reported 2 cases of diphtheria with 1 death; 3 cases of scarlet fever with 1 death; 1 case of typhoid fever with no deaths; 1 case of pneumonia with no deaths; 20 cases of la grippe with no deaths; 100 cases of diarrhoea with 1 death; 15 cases of cholera morbus with no deaths. The law requiring the report of dangerous contagious disease is observed, and the general result of efforts to restrict the spread of contagious disease is encouraging. I believe that births are reported to County Clerk direct. The law requiring the issuing of burial permits is not observed.

F. O. JOHNSON, Clerk.

*Park Falls:* Population, 600. Health officer receives a salary of \$60 per annum. There are six public school buildings; sanitary condition good. We have a small piece of undrained land in the village, which could be drained by putting culvert under railroad tracks. It is considered a nuisance, and furnishes a sly dumping ground for everything. The source of water supply is from dug wells. No sewerage system. During the year there have been reported 2 cases of typhoid fever; 12

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*Extracts from Health Officers' Correspondence.*

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cases of pneumonia; 6 cases of la grippe, with no deaths; 20 cases of dysentery with 1 death; 8 cases of diarrhoea with 1 death; 4 cases of cholera morbus with no deaths. The law requiring the report of dangerous contagious disease is observed, and the general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. I think we could get the consent of parents of all school children to have their children vaccinated by having an order from the State Board to do the same, as only ten per cent. are vaccinated, and we have smallpox in our adjoining counties.

G. H. HADLEY, M. D., H. O.

RACINE COUNTY.

*Racine:* Population, 29,102. Health commissioner receives a salary of \$100 per annum. There are ten public school buildings; 7 parochial school buildings; sanitary condition good. Health officer is given authority by resolution of the board to act in any emergency. The principal sanitary work done during the year consisted of the attending to all complaints, placarding houses, disinfecting premises where contagious diseases were. The special unsanitary conditions are filthy vaults; garbage in yards; several bad ponds, which are before City Council at present and will be filled up. Source of water supply from Lake Michigan; sewerage system empties into the lake. During the year there have been reported 47 cases of diphtheria with 4 deaths; 126 cases of scarlet fever with 3 deaths; 10 deaths from typhoid fever since April, 1900; 1 death from measles; 38 deaths from pneumonia; 29 deaths from consumption. The law requiring the report of dangerous contagious disease is observed except in typhoid fever. I have called a meeting to know why they do not report these cases. Few people have been vaccinated, and not many of the school children have been vaccinated. The general result of efforts to restrict the spread of contagious disease is encouraging, except in typhoid fever. The laws requiring the report of births and the issuing of burial permits are observed. Last spring we had an alarming increase of scarlet fever; looked up the matter, and found that out of every ten cases, nine took milk from one milkman. Board was called and investigated the same, and found that the chil-

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*Extracts from Health Officers' Correspondence.*

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dren of this milkman had scarlet fever, and although the premises are the cleanest in the country yet the germs got to the milk somehow. Finally it was learned that the children had come to breakfast, and later the help would sit down at the same table, and without any doubt carried the germs to the milk cans. This source of milk supply was stopped, and in a few weeks the disease disappeared.

EDWARD SCHUMACHER, H. C.

RICHLAND COUNTY.

*Bloom Township:* Population about 1,300. Health officer receives no salary. There are eight public school buildings; sanitary condition excellent. There are no special unsanitary conditions existing at present. Source of water supply private wells; quality good. No sewerage system. During the year there have been reported 5 cases of scarlet fever with no deaths; 9 cases of typhoid fever with no deaths; 1 case of measles; 25 cases of pneumonia; 9 cases of la grippe; 34 cases of diarrhæa; 3 cases of consumption with no deaths. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagion is encouraging, and successful. The laws requiring the report of births and the issuing of burial permits are observed.

C. F. BOWEN, M. D., H. O.

*Richland Center:* Population, 2,500. Health officer receives a salary of \$25 per annum. There are three public school buildings; sanitary condition good. This town is well provided with sewers and a good water system, but there are quite a number of surface wells and outside privies. Source of water supply from a well 750 feet deep. Sewerage system empties into the river. During the year there have been reported 3 cases of diphtheria with 1 death; 10 cases of scarlet fever with no deaths; 10 cases of typhoid fever with 1 death; 25 cases of measles with 1 death; 50 cases of whooping cough with 1 death; 20 cases of pneumonia; 50 cases of la grippe; 40 cases of dysentery; 25 cases of cholera morbus with no deaths. There were 5 cases of consumption with 1 death reported. The law requiring the report of dangerous contagious disease is observed, but

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*Extracts from Health Officers' Correspondence.*

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the State Board of Health is not always notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

F. W. MCKEE, M. D., H. O.

ROCK COUNTY.

*Clinton Village:* Population about 900. Health officer receives a per diem salary. There is one public school building; sanitary condition good. There are no special unsanitary conditions at the present time. All nuisances are quickly reported to the health officer. Source of water supply, deep wells, with regular system of water works. Quality of water good. No sewerage system. The law requiring the report of dangerous contagious diseases is not observed. Most general reasons for non-compliance are carelessness, jealousy, lawlessness, and general cussedness. General result of efforts to restrict the spread of contagious disease is discouraging because the majority of the physicians will not report to the health officer, and the district attorney will pay no attention to any complaints made to him. We may as well have no law and no district attorney. The law requiring the report of births is not properly observed. It is the poorest law in regard to collecting statistics. The amended law is worse than the old law. Physicians do not have to report and many families are ignorant of the law. Burial permits are invariably secured but there is too much red tape about it.

GEO. COVERT, M. D., H. O.

*Janesville:* Population about 14,000. Health officer receives a salary of \$350.00 per annum. There are ten public school buildings; sanitary condition good. Health officer has full authority to act in any emergency. The principal unsanitary conditions are a great many privy vaults but as we have no sewerage these cannot be dispensed with. Source of water supply is from artesian wells; quality of water first class. During the year there have been reported 6 cases of diphtheria with 1 death; 72 cases of scarlet fever with 2 deaths; 16 deaths from pneumonia; 1 death from dysentery; 4 deaths from diarrhoea; 14 deaths from consumption reported. The law requiring the



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*Extracts from Health Officers' Correspondence.*

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report of dangerous contagious disease is observed, and the State Board promptly notified. There has been no vaccination during the past five years, with the exception of a very few school children. General result of efforts to restrict the spread of contagious disease encouraging. The law requiring the report of births is not observed; physicians will not report when they are not paid. The law requiring the issuing of burial permits is not as well observed as it might be; however, I get most of them. Most of our death certificates are returned with heart disease, old age, and similar unscientific forms of causes of death.

GEO. W. FIFIELD, M. D., H. O.

ST. CROIX COUNTY.

*Glenwood:* Population, 1,900. Health officer receives a salary of \$25 per annum. There are two public school buildings; sanitary condition good. Health officer is given authority by recorded resolution to act for the board in any emergency. Source of water supply, artesian wells; quality good. Sewerage system drains into a running stream. Contagious diseases reported were 7 cases of typhoid fever with 2 deaths; 44 cases of measles; 39 cases of whooping cough with no deaths; 17 cases of pneumonia with 3 deaths; 47 cases of la grippe with 4 deaths; 22 cases of dysentery; 55 cases of diarrhoea; 24 cases of cholera morbus with 8 deaths; 4 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed. About 50 per cent. of the population have been vaccinated within the past five years, and about 70 per cent. of the school children. General result of efforts to restrict the spread of contagious disease encouraging. The laws requiring the report of births, and the issuing of burial permits are observed.

H. C. FICKES, M. D., H. O.

SAUK COUNTY.

*Baraboo City:* Population, 6,500, mostly Americans. Health officer receives a salary of \$150 per annum. There are four public school buildings; sanitary condition good, except in one in which heating and ventilation are poor. Health officer is given authority by recorded resolution to act for the board in

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*Extracts from Health Officers' Correspondence.*

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any emergency. Sanitary conditions are very good. Source of water supply from springs, and flowing driven wells; both of good quality. Sewerage system empties into Baraboo river. During the year there have been 30 cases of scarlet fever; 5 cases of typhoid fever; 50 cases of whooping cough, with no deaths; 6 deaths from consumption. The law requiring the report of dangerous contagious disease is observed, except in the mild cases where people are not afraid of the disease but are afraid of quarantine. Only a few of the people and not many of the children have been vaccinated during the past five years. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is not observed and will not be until the doctors are paid for their trouble. The law requiring the issuing of burial permits is observed, and is a success. One of the most important matters to be taken up by the health authorities of the state (to my mind) is the proper inspection of herds supplying milk to the people; also of animals for slaughter. I would suggest that a veterinary surgeon be appointed for a county or a district he might be able to serve, whose duty it would be to examine herds at the owner's request; the work to be done at as small cost to the owner as would properly pay for the time and expense of a thorough examination. I would then make it necessary for every milk seller in the state to present a certificate of examination of his herd to the health officer in the village or city in which he wished to sell milk, and secure a license. I am satisfied that there is more tubercular trouble amongst the cattle of the state than is generally known or attended to, and I believe many human lives might be saved by careful attention to these conditions.

CHAS. GORST, M. D., H. O.

*Sauk City Village:* Population, 750. Health officer receives no salary. There are two public school buildings, in good sanitary condition. Health officer is not given authority to act in any emergency. There are no special unsanitary conditions existing. The source of water supply is from wells. No sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of contagious disease is observed, and the general result of efforts to restrict the spread of contagious disease encouraging. Nearly every

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*Extracts from Health Officers' Correspondence.*

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one was vaccinated prior to five years ago; none since. The laws requiring the report of births and the issuing of burial permits are observed.

C. F. NINMAN, H. O.

*Westfield:* Population, 1,550, mostly German. There are seven full districts and one joint district school; sanitary condition good. Health officer is not given authority by resolution of the board to act in any emergency. The special unsanitary conditions consist of foul privies, barns, hoggens, and manure piles. The source of water supply is from driven wells. No sewerage system. During the year there have been from 50 to 75 cases of scarlet fever with no deaths; 20 cases of pneumonia with 1 death; 60 cases of dysentery; 400 cases of diarrhoea; 30 cases of cholera morbus, with no deaths; 4 cases of consumption with no deaths. The law requiring the report of dangerous contagious disease is observed if cases are treated by physicians. Probably two-thirds of the cases of scarlet fever were very light and no doctor employed, consequently nothing known of the cases. There has been no vaccination during the past five years. The State Board of Health is promptly notified of all contagious diseases that are reported. The general result of efforts to restrict the spread of contagious disease is not very encouraging, as you will learn in remarks. The laws requiring the report of births and the issuing of burial permits are observed. Scarlet fever was quite prevalent here last winter and spring, but comparatively few cases were known of or treated by physicians, in fact the cases were light and for fear of being quarantined no physician was called, or not until the fever was passed, and the complications arose which perhaps would be from two to five weeks after the initial stages. Then of course they would object to being quarantined, so long an interval having elapsed since original attack.

A. T. CORLISS, M. D., H. O.

SAWYER COUNTY.

*Hayward:* Population, 2,000; about one-half Scandinavians; one-half Americans. Health officer is paid \$50 per annum. There are two public school buildings in the village; sanitary condition good. Special unsanitary condition existing

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*Extracts from Health Officers' Correspondence.*

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is a small water course through the village, which should be more thoroughly covered, although no known cases of disease have been caused therefrom. Source of water supply is from mill pond. Water looks bad in summer but is healthy. Sewerage system empties into creek, which reaches river below water supply. During the year there have been reported 4 cases of diphtheria; 60 cases of scarlet fever; 2 cases of typhoid fever; 20 cases of measles; 10 cases of whooping cough with no deaths; 12 cases of pneumonia with 2 deaths; 50 cases of la grippe with no deaths; 100 cases of diarrhoea with 4 deaths; 10 cases of cholera morbus with no deaths; 15 cases of consumption with 5 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board usually notified. Probably 25 per cent. of the people have been vaccinated during the past five years, but very few school children. General result of efforts to restrict the spread of contagious disease is very encouraging. The law requiring the report of births is fairly well observed; the law requiring the issuing of burial permits is observed.

J. B. TROWBRIDGE, M. D., H. O.

SHAWANO COUNTY.

*Shawano City:* Population, 2,000. The office of city physician and commissioner are combined; salary \$60 per annum. There is one public school building and two parochial; good sanitary condition. There are no special unsanitary conditions. Source of water supply is from driven wells. No sewerage system. With the exception of 12 cases of scarlet fever with no deaths, and 8 cases of typhoid fever with 1 death, no cases of contagious disease have been reported. The law requiring the report of dangerous contagious disease is observed but the State Board is not always notified, due to neglect. The general result of efforts to restrict the spread of contagious disease is encouraging. There has been no vaccination, except a very small percentage among school children during the past five years. The law requiring the report of births is partially observed; the law requiring the issuing of burial permits is strictly observed. I am at a loss to determine what can be the cause of our having so many cases of typhoid fever. We have never had more than one or two cases before this year and these cases generally came

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*Extracts from Health Officers' Correspondence.*

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from some other place. As you will see we have had eight cases this fall, seven of them in the same ward, and I cannot find any cause for same.

W. H. CANTWELL, M. D., H. C.

*Tigerton Village:* Population, 840. There is one public school building; sanitary condition good. Health officer is given authority by recorded resolution to act in the name of the board in any emergency. There are no special unsanitary conditions existing. With the exception of 84 cases of measles; 16 cases of la grippe; 4 cases of dysentery; 3 cases of cholera morbus, with no deaths; and 1 case of consumption with 1 death, no contagious diseases have been reported. The law requiring the report of dangerous contagious disease is observed and the State Board notified. There has been no vaccination to any extent within the past five years. The result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

CARL E. STUBENVOLL, M. D., H. O.

*Wittenberg Village:* Population, 1,000. There is one public school building; sanitary condition good. Health officer is given authority by recorded resolution to act in the name of the board in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from wells. No sewerage system. The following diseases were reported: 8 cases of measles; 21 cases of whooping cough; 3 cases of pneumonia; 24 cases of la grippe; 18 cases of dysentery with 2 deaths; 12 cases of diarrhoea; 4 cases of consumption with 3 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. About 75 per cent. of the people have been vaccinated and 50 per cent. of the school children. General result of efforts to restrict the spread of contagious disease encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

I. ROTHMAN, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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## SHEBOYGAN COUNTY.

*Lima Township:* Population, 2,300. Health officer receives no salary. There are eight public school buildings; sanitary condition good. Lands for the most part are well drained. Mill ponds supplied by running water are never stagnant. There are no slaughter houses in my jurisdiction, and barns, stables, and out buildings are usually very well taken care of. Source of water supply from wells; fairly good quality. No sewerage system. During the year there have been reported 2 cases of diphtheria with no deaths; 1 case of typhoid fever with 1 death; 30 cases of measles with no deaths; 6 cases of whooping cough; 10 cases of pneumonia with 4 deaths; 1 death from consumption. The law requiring the report of dangerous contagious disease is not well observed, first, because proper blanks are not furnished by local boards; second, lack of facilities for reporting. The general result of efforts to restrict the spread of contagious disease is encouraging in diphtheria only. The laws requiring the report of births and the issuing of burial permits are observed.

L. W. ZOCHERT, M. D., H. O.

*Sheboygan:* Population, 23,000. Health commissioner receives a salary of \$300 per annum. There are eight public school buildings; sanitary condition good. Health commissioner is given power to act for the board in any emergency by city ordinance. Source of water supply, Lake Michigan; quality good. Sewerage system empties into Lake Michigan. During the past year there have been reported 129 cases of diphtheria with 11 deaths; 23 cases of scarlet fever with no deaths; 3 cases of typhoid fever with 4 deaths; 1 death from whooping cough; 11 deaths from pneumonia; 1 death from la grippe; 24 deaths from dysentery; 3 deaths from diarrhoea; 2 deaths from cholera morbus; 33 deaths from consumption. The law requiring the report of dangerous contagious disease is not well observed. Vaccination has been performed during the past year to a very small extent, perhaps 5 to 10 per cent. of the school children have been vaccinated. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

O. H. ARNDT, M. D., H. C.

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*Extracts from Health Officers' Correspondence.*

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## TAYLOR COUNTY.

*Medford City:* Population, 2,000. Health officer is paid for services rendered. There are three public school buildings; sanitary condition good. Health officer is not given authority to act for the board in any emergency. Special unsanitary conditions existing are privy vaults and alleys which it is necessary to clean. There is no public water supply. Sewerage system empties into Black river. During the past year there have been 5 cases of smallpox in one family; 1 case of diphtheria; 1 case of scarlet fever; 30 case of measles; 30 cases of whooping cough; 5 cases of pneumonia; 5 cases of la grippe; 5 cases of dysentery; 20 cases of diarrhoea; 5 cases of cholera morbus with 1 death. The law requiring the report of dangerous contagious disease is observed but the State Board is not always promptly notified. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

EUGENE LE SAGE, M. D., H. O.

*Rib Lake Township:* Population, 1,700. Health officer receives \$50 per annum. There are four public school buildings; sanitary condition good. Health officer is given authority to act for the board in any emergency. The principal unsanitary conditions consist of low district in west end of town (village) undrained. Source of water supply from wells, not deep and not well cared for; a few are good. Sewerage system drains into Rib Lake. During the year there have been 3 cases of diphtheria with no deaths; 3 cases of typhoid fever with no deaths; 5 cases of measles; 3 cases of whooping cough; 3 cases of pneumonia; 15 cases of la grippe; 7 cases of dysentery; 40 cases of diarrhoea; 35 cases of cholera morbus with 7 deaths; 2 cases of consumption with 1 death. The law requiring the report of dangerous contagious disease is observed. Nearly all of the inhabitants have been vaccinated. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are not observed. The drinking water here is mostly unfit for use. The wells are not deep and not protected from surface drainage.

O. E. WERNER, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Westboro Township:* Population 550. Health officer receives a salary of \$2 per day when actually employed. There are ten public school buildings; sanitary condition good. Health officer is authorized by recorded resolution of the board to act in any emergency. There are no special unsanitary conditions, except one tannery which although kept quite clean emits an odor. The privies were attended to in the summer and at present are in good condition. Source of water supply from wells. No sewerage system. During the year there have been 14 cases of diphtheria with 2 deaths; 8 cases of typhoid fever with no deaths; 3 cases of dysentery with 1 death; 12 cases of diarrhoea with 1 death. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagious disease is encouraging. Very few of the inhabitants have been vaccinated during the past five years. The law requiring the report of births is not well observed as these cases are often attended to by neighbor women only; the law requiring the issuing of burial permits is observed. There is some complaint about a tannery located here. The people in the village complain of the smell. I have inspected the building and yards and found them as clean as could be connected with the business. Still there is an odor. I cannot say it is a cause of any sickness, as the employes and their families who live in the vicinity of the tannery, close to it, are free from sickness.

G. H. McCCLURE, M. D., H. O.

TREMPEALEAU COUNTY.

*Independence:* Population, 600. Health officer receives no salary. There are two public school buildings; sanitary condition good. Health officer is not given authority by recorded resolution to act for the board in any emergency. There are no special unsanitary conditions existing. Source of water supply from mill pond. No sewerage system. There have been no contagious diseases reported during the year. The law requiring the report of dangerous contagious disease is observed and the State Board of Health notified. The law requiring the report of births is partially observed; the law requiring the issuing of burial permits is observed.

G. F. STACK, M. D., H. O.



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*Extracts from Health Officers' Correspondence.*

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*Trempealeau Village:* There is one public school building; sanitary condition good. Health officer is given authority by recorded resolution of the board to act in its name in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from wells. No sewerage system. The diseases reported during the year were 2 cases of pneumonia; 1 case of typhoid fever; 10 cases of diarrhoea; 2 cases of consumption. The law requiring the report of dangerous contagious disease is observed and the State Board notified. During the past five years 90 per cent. of school children and 60 per cent. of adults have been vaccinated. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed. My term as health officer has been only three months and I am making this report from personal observation and inquiry.

JOHN W. MINTEUER, M. D., H. O.

VERNON COUNTY.

*La Farge Village:* Population, 600. There are two public school buildings; sanitary condition good. Health officer is given authority by recorded resolution to act for the board in any emergency. As to special unsanitary conditions we are on low ground in our new village and therefore drainage is poor as yet. Our houses are poorly constructed; and should be better. Vaults and cellars fill up in wet seasons. Source of water supply from wells. No sewerage system. With the exception of 1 case of scarlet fever and 1 case of consumption, with no deaths, no contagious disease has been reported during the year. The law requiring the report of dangerous contagious disease is observed. There has been scarcely any vaccination during the past five years. General result of efforts to restrict the spread of contagious disease is encouraging, except by careless or ignorant people. The laws requiring the report of births and the issuing of burial permits are observed. The matter of drainage is most important. Owing to high prices people bought their lots on low and unhealthy ground.

W. E. BUTT, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Viroqua City:* Population 2,000. Health officer receives a salary of \$25 per annum. There are two public school buildings; sanitary condition good. There are no special unsanitary conditions existing at the present time. Source of water supply from wells; quality excellent. No sewerage system. With the exception of 2 cases of typhoid fever with no deaths, there have been no cases of contagious disease reported during the year. The law requiring the report of dangerous contagious disease is observed. There has been no general vaccination during the past five years. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed by about one-half of the physicians; the law requiring the issuing of burial permits is not observed.

CHAS. H. TROWBRIDGE, M. D., H. O.

VILAS COUNTY.

*Arbor Vitae:* Population 1,800. Health officer receives a salary of \$40 per annum. There are three public school buildings; sanitary condition good. Health officer is not given authority by recorded resolution to act in the name of the board in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from wells; quality good. No sewerage system. There have been reported 50 cases of whooping cough; 10 cases of pneumonia; 100 cases of la grippe; 25 cases of dysentery with 1 death. The law requiring the report of dangerous contagious disease is observed. About 50 per cent. of the school children have been vaccinated within the past five years. General result of efforts to restrict the spread of contagious disease encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

A. B. ROSENBERY, M. D., H. O.

WALWORTH COUNTY.

*Elkhorn:* Population, 2,000. Health officer receives a salary of \$25 per annum. There is one public school building; sanitary condition good. Health officer is not given authority to act in the name of the board in any emergency. There are

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*Extracts from Health Officers' Correspondence.*

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no special unsanitary conditions existing at the present time. Source of water supply artesian well, over 1,000 feet deep; water pumped into a standpipe and thence distributed. Quality of water excellent. No sewerage system. Diseases reported during the year were probably 20 cases of scarlet fever; 6 cases of typhoid; 25 cases of whooping cough; 10 cases of pneumonia, with no deaths. The law requiring the report of dangerous contagious disease is not observed; hence my indefinite replies. The most general reason for non-compliance with the requirements are carelessness and disinclination of attending physicians. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are not always observed.

EDWARD KINNE, M. D., H. O.

*Lake Geneva:* Population, 2,800. Health officer's salary is a very limited amount of gratitude. Number of public school buildings, four; sanitary condition good. Health officer is given authority by recorded resolution to act for the board in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from wells. In a few cases city water is used for drinking. No sewerage system. There have been 15 cases of scarlet fever with 1 death, 12 cases of typhoid fever with 1 death, and 3 cases of consumption with 1 death, reported during the past year. The law requiring the report of dangerous contagious disease is observed. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

W. H. MACDONALD, M. D., H. O.

WASHBURN COUNTY.

*Spooner:* Population 2,000. Health officer receives a salary of \$100 per annum. There are twelve public school buildings; sanitary condition good. Health officer is not given authority by recorded resolution to act in the name of the board in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply is from wells; also from springs near bank of Yellow river. No sewerage

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*Extracts from Health Officers' Correspondence.*

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system. During the year there have been reported 32 cases of diphtheria with 5 deaths; 3 cases of scarlet fever with no deaths; 18 cases of typhoid fever with no deaths; 4 cases of measles; 7 cases of whooping cough; 12 cases of pneumonia; 20 cases of la grippe; 18 cases of dysentery; 40 cases of diarrhoea; 18 cases of cholera morbus with 4 deaths; 20 cases of consumption with 5 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. There has been no vaccination during the past five years. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

J. P. COX, M. D., H. O.

WASHINGTON COUNTY.

*Schleisingerville:* Health officer receives no fixed salary. There is one public school building, in fair sanitary condition. Health officer is not given authority by recorded resolution of the board to act in any emergency. A stagnant ditch leading from the brewery, carrying brewery refuse, and running through the village, is the principal unsanitary condition existing at the present time. Water supply from wells. No sewerage system. During the year there have been reported 26 cases of diphtheria with 1 death; 2 cases of typhoid fever; 12 cases of measles; 16 cases of pneumonia with 2 deaths; 7 cases of dysentery; 46 cases of diarrhoea; 3 cases of cholera morbus; 12 cases of consumption with 5 deaths. The law requiring the report of dangerous contagious disease has been observed since my election as health officer. About 10 per cent. of the inhabitants and 50 per cent. of the school children have been vaccinated during the past five years. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

J. E. REICHERT, M. D., H. O.

*West Bend City:* Population, 3,000. Health officer paid for services actually rendered. There are two public school buildings; sanitary condition excellent. Health officer is given

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*Extracts from Health Officers' Correspondence.*

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authority by recorded resolution of the board to act in its name in any emergency. Scarlet fever made its appearance here about a year ago, which was the first visit for ten years or more. It invaded the city so quietly and mildly that it escaped recognition for some time, the patients were not sick enough to be confined to the house in most instances, and therefore associated with playmates and spread the disease unconsciously. Forty-seven cases were treated by physicians and quarantined to the best of our ability; there was one death only. One case of diphtheria occurred and 6 cases of typhoid fever, with no deaths. There were 3 cases of consumption with three deaths. Source of water supply is from wells and is of good quality. No sewerage system. The law requiring the report of dangerous contagious disease is observed, and the State Board notified. There has been very little vaccination. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

D. W. LYNCH, M. D., H. O.

WAUKESHA COUNTY.

*Oconomowoc*: Population about 3,000. Health officer receives a salary of \$25.00 per annum. There are three public school buildings; sanitary condition good. Health officer is given authority by recorded resolution to act for the board in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from artesian wells; quality good. No sewerage system. During the year there have been reported 3 cases of scarlet fever; 1 case of typhoid fever; 2 cases of whooping cough; 100 cases of diarrhoea; 5 cases of consumption with 3 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. About ninety-five per cent. of the inhabitants have been vaccinated, and all of the children before attending school. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is fairly well observed; the law requiring the issuing of burial permits is observed.

THOMAS MILLER, M. D., H. O.

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*Extracts from Health Officers' Correspondence.*

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*Waukesha City:* Population, 7,222, foreign element about one-third of population. Work is done under charter provisions. The health commissioner generally attends the sessions of the common council twice each month and reports sanitary matters. He receives a salary of \$150 per annum. There are six public school buildings; sanitary condition good. During the year suspicious wells have been condemned; milk peddlers have been put to task when milk was found impure and below standard as to butter fat. The principal unsanitary conditions consist of several suspicious wells, foul privies, and stables. Source of water supply two artesian wells owned by a private corporation, supply the city with good water. Sewerage system empties into Fox river. During the year there have been reported 27 cases of scarlet fever with 2 deaths; 19 cases of typhoid fever with 1 death; 10 cases of measles; 67 cases of whooping cough; 33 cases of pneumonia with 3 deaths; 291 cases of la grippe with 2 deaths; 14 cases of dysentery; 53 cases of diarrhoea; 87 cases of cholera morbus with 4 deaths; 22 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. As soon as the attending physician makes his report to the health officer, the house is forthwith placarded, pamphlets regarding the disease are distributed to neighbors and inmates of the house, and placard is not removed until the premises are disinfected with formaldehyde disinfecting apparatus. The laws requiring the report of births and the issuing of burial permits are observed. In addition to Babcock's Milk Tester, Petit's Disinfecting Apparatus, the city has now supplied the health office at the request of the health commissioner with a complete outfit for making bacteriological investigations.

HUGO PHILLER, M. D., H. C.

WAUPACA COUNTY.

*Clintonville City:* Population, 1,560, mostly German. There is one graded high school building; sanitary condition good. Health officer is given power to act in the name of the board in any emergency, not by recorded resolution but by common consent. The principal unsanitary condition consists of a mill pond just west of the city which is a constant

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*Extracts from Health Officers' Correspondence.*

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menace during summer months. Water supply from wells. No sewerage system. There have been reported 2 cases of diphtheria with 1 death; 3 cases of typhoid fever with 1 death; 100 cases of la grippe with 5 deaths; 50 cases of diarrhoea with no deaths. The law requiring the report of dangerous contagious disease is not very well observed; principal cause, prejudice against quarantine. About 90 per cent. of the population have been vaccinated; school children not vaccinated unless smallpox is prevalent. General result of efforts to restrict the spread of contagious disease encouraging. The law requiring the report of births is not well observed; the law requiring the issuing of burial permits is observed. I have no suggestions to make except that health officer should be given more power, and receive a considerable salary for honest work done for the good of the public. As it is there is no stimulus for work.

E. A. MILLER, M. D., H. O.

*New London:* Population, 3,500. Health officer receives a salary of \$25.00 per annum and also \$25.00 as city physician. There are two public school buildings; sanitary condition good. Health officer is given power to act in the name of the board by general consent. There are no special unsanitary conditions existing at the present time. Source of water supply from flowing wells; quality good. Sewerage system empties into river. Have no well regulated system but are putting in street drainage in places. During the year there have been reported 4 cases of small pox with 1 death; 3 cases of diphtheria with no deaths; 2 cases of typhoid fever with no deaths; 1 case of measles. The law requiring the report of dangerous contagious disease, so far as the more important are concerned, is observed, and the State Board notified. Vaccination has been quite general since the outbreak of smallpox and probably 50 per cent. of the school children have been vaccinated. General result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

WM. F. BROWNELL, M. D., H. O.

*Waupaca City:* Population 3,000. Board of health meets monthly. Salary of health officer \$100 per annum. There

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*Extracts from Health Officers' Correspondence.*

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are two public school buildings; sanitary condition good. The principal unsanitary conditions existing at the present time are a stream or pond into which drains sewers from hotel and court house. Also vaults on banks. Source of water supply from wells principally. No sewerage system, but sadly in need of one. There have been no contagious diseases reported during the year except 4 cases of diphtheria; 14 cases of scarlet fever; 2 cases of measles; 4 cases of consumption with 4 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. Most of the inhabitants have been vaccinated and about 50 per cent. of the school children. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is fairly well observed; the law requiring the issuing of burial permits is observed.

L. H. PELTON, M. D., H. O.

*Wenauwega Village:* Population, 1,000. There are two public school buildings; sanitary condition good. Health officer is given authority by recorded resolution of the board to act in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from wells; quality good. No sewerage system. There have been no diseases reported during the year except 2 cases of whooping cough; 2 cases of pneumonia; 4 cases of dysentery; 20 cases of diarrhoea with 2 deaths; 1 case of cholera morbus; 2 cases of consumption with 2 deaths. The law requiring the report of dangerous contagious disease is observed and the State Board notified. About one-half of the inhabitants and three-fourths of the school children have been vaccinated within the past five years. The general result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is fairly well observed; the law requiring the issuing of burial permits is observed.

J. F. CORBETT, M. D., H. O.

WAUSHARA COUNTY.

*Poyissippi:* Population about 1,200. Health officer receives no salary. There are six public school buildings; sanitary condition good. Health officer is not given authority to act



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*Extracts from Health Officers' Correspondence.*

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in any emergency. There are no special unsanitary conditions existing at the present time. Source of water supply from wells and fountains; quality good. There is no sewerage system. There have been reported 1 case of diphtheria with 1 death; 1 case of scarlet fever with 1 death; 50 cases of whooping cough; 25 cases of pneumonia; 200 cases of la grippe; 100 cases of dysentery; 30 cases of diarrhoea; 20 cases of cholera morbus; 6 cases of consumption with 3 deaths. The law requiring the report of dangerous contagious disease is observed, and the State Board notified. The general result of efforts to restrict the spread of contagious disease is encouraging. The laws requiring the report of births and the issuing of burial permits are observed.

C. E. JOHNSON, H. O.

WINNEBAGO COUNTY.

*Neenah City:* Population, 6,000. Working under charter provisions. Health commissioner receives a salary of \$200 per annum. There are four public schools; one Lutheran; sanitary condition good. Principal unsanitary conditions consist of what remains of an open sewer still to be filled; and another open sewer that has not been touched yet. Source of water supply, artesian wells; quality good. Sewerage system empties into little lake Butte des Morts, tributary to Fox river. Since April 10th, 1900, there have been reported 17 cases of diphtheria with 2 deaths; 1 case of scarlet fever with no deaths. The law requiring the report of dangerous contagious disease is observed so far as scarlet fever and diphtheria are concerned; none of the others are reported. Vaccination has been neglected. The general result of efforts to restrict the spread of contagious disease is encouraging to a degree. The laws requiring the report of births and the issuing of burial permits are not observed.

C. O. HANSON, M. D., H. O.

*Oshkosh City:* Population 30,000. Work done under charter provisions. Health commissioner receives a salary of \$200 per annum. There are twelve public school buildings; sanitary condition good. The principal work done during the

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*Extracts from Health Officers' Correspondence.*

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year has consisted of vaults cleaned, buildings disinfected, cess-pools filled, back yards cleaned, cellars cleaned, and other work done by health boards. Principal unsanitary condition consists of dumping grounds owned by Frank Percy Land Company near Lake Winnebago. Source of water supply is from private wells and city water from Lake Winnebago. Sewerage system empties into Lake Winnebago. During the year there have been reported 19 cases of diphtheria with 3 deaths; 90 cases of scarlet fever with 2 deaths; 13 cases of typhoid fever with 3 deaths; 2 cases of whooping cough with 2 deaths; 3 cases of pneumonia with 3 deaths; 1 case of diarrhoea with 1 death; 2 cases of cholera morbus with 2 deaths; 31 cases of consumption with 31 deaths. The law requiring the report of dangerous contagious disease is not observed; most general reason is negligence on part of physicians. Most all children have been vaccinated before school age. The State Board is notified on receipt of report of contagious diseases. General result of efforts to restrict the spread of contagious disease is encouraging. The law requiring the report of births is observed; 394 births registered. The law requiring the issuing of burial permits is observed; 258 deaths registered.

F. J. WILKIE, M. D., H. C.

WOOD COUNTY.

*Grand Rapids:* Population, 4,500. Work done under charter provisions. Health commissioner receives a salary of \$40 per annum. There are seven public schools; sanitary condition good. Health commissioner is not given authority by recorded resolution to act in the name of the board in any emergency. Work is now being done on the only unsanitary places that I know of or that have been called to my attention. Source of water supply, west side, water works; source river. East side, spring and private pumps. No sewerage system on east side; on west side empties into river. During the year there have been reported 3 cases of diphtheria; 4 cases of scarlet fever; 5 cases of typhoid fever with 2 deaths; 10 deaths from cholera morbus; 2 deaths from consumption. The law requiring the report of dangerous contagious disease is observed and the State Board notified. Vaccination has been done to a lim-

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*Extracts from Health Officers' Correspondence.*

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ited extent during the past five years. General result of efforts to restrict the spread of contagious disease encouraging. The law requiring the report of births is not observed; the law requiring the issuing of burial permits is observed. Persons reporting births should be paid in order to get them to report, as is done with death certificates. We seem to have an occasional case of diphtheria, also scarlet fever, and about this time typhoid is appearing, but account for it on heavy rains we have been having and wells filling up with surface water.

FRANK POMAINVILLE, M. D., H. C.



# INDEX.

## A

	Page
Animal Tuberculosis .....	6, 9
Algoma, Water supply of .....	156
Amery, Water supply of .....	178
Anthrax .....	2, 13, 14, 57
Report of .....	105
Appointments .....	8, 12
Arbor Vitae, Water supply of .....	192
Arcadia, Water supply of .....	192
Attorney General:	
Opinion relative to fees for reporting births.....	14
Opinion relative to anthrax .....	57
Opinion relative to use of contingent fund.....	70

## B

Bacteriological Examination, etc. ....	82
Bangor, Nuisance at .....	63
Baraboo, Water supply of .....	186 to 188
Barron City, Water supply of .....	119
Beloit, Water supply of .....	182
Reimbursement of School Board .....	9
Berlin:	
Pork examined .....	82
Water supply of .....	144 to 149
Bristol, Water supply of .....	153 to 155
Bovine Tuberculosis .....	9, 12
Committees appointed relative to .....	10
Brandon, Water supply of .....	138

## C.

Cantwell, Dr. W. H., Report on Diphtheria at Surings .....	50
Car Sanitation .....	11, 12, 14
Report on .....	77

*Index.*

	Page
Centralia, Water supply of .....	200 to 203
Circulars:	
Smallpox, redrafted .....	9
Diphtheria, redrafted .....	9
Clute, Dr. H. P., State Veterinarian .....	12
Consumption, Deaths from .....	22
Contingent Fund .....	2, 10, 11, 12, 70
Contagious Diseases:	
Suggestions to teachers .....	9, 10
Contribution to a nearer Knowledge of a Hemlock Species, by Fr. and L. F. Ruschhaupt, Milwaukee .....	99
Cumberland, Diphtheria specimen examined .....	82

## D.

Darlington, Diphtheria .....	42
Specimen examined .....	83
Delavan, Water supply of .....	193
Diphtheria .....	1
Circular redrafted .....	9
Outbreak at Darlington .....	42
Outbreak at Surings .....	50
Outbreak at Tomah .....	45
Outbreak at Waupaca .....	43
Statistics relative to .....	18
Drainage:	
Fond du Lac river .....	13
Neenah .....	64
North Milwaukee .....	59
Plymouth .....	65
Waukesha .....	68

## E.

Eau Claire, Smallpox .....	39
Evansville, Scarlet fever .....	53
Expenses .....	95

*Index.*

## EXTRACTS FROM HEALTH OFFICERS' CORRESPONDENCE.

(Arranged by counties.)

	Page
Adams County—	
Rome Tp. ....	204
Ashland County—	
Ashland City .....	204
Glidden Tp. ....	205
Barron County—	
Barron City.....	206
Chetek City .....	206
Cumberland City .....	207
Bayfield County—	
Bayfield City .....	207
Drummond Tp. ....	208
Iron River .....	208
Brown County—	
Big Suamico Tp. ....	209
Green Bay City .....	209
Pittsfield Tp. ....	210
Buffalo County—	
Fountain City .....	211
Mondovi City .....	211
Burnett County—	
Grantsburg .....	212
Trade Lake Tp. ....	212
Calumet County—	
Brillion Vil. ....	213
Hibbard Vil. ....	213
Chippewa County—	
Boyd Vil. ....	214
Stanley City .....	214
Clark County—	
Abbotsford Vil. ....	215
Colby City .....	215
Greenwood City .....	216
Neillsville City .....	216
Columbia County—	
Columbus .....	217
Kilbourn Vil. ....	217
Lodi Vil. ....	217
Portage City .....	218

*Index.*

	Page
Crawford County—	
Prairie du Chien .....	218
Wauzeka Vil. ....	218
Dane County—	
Madison .....	219
Mount Horeb .....	219
Dodge County—	
Horicon .....	220
Mayville .....	221
Door County—	
Sevastopol .....	221
Sturgeon Bay .....	222
Douglas County—	
Superior Tp. ....	223
Dunn County—	
Hay River .....	223
Menomonie .....	223
Eau Claire County—	
Augusta .....	224
Drammon .....	224
Florence County—	
Commonwealth .....	225
Homestead Tp. ....	225
Fond du Lac County—	
Fond du Lac City .....	226
Waupun .....	226
Grant County—	
Bloomington .....	227
Boscobel City .....	227
Lancaster Tp. ....	227
Platteville City .....	228
Green County—	
Adams Tp. ....	229
Brownstown Vil. ....	229
Green Lake County—	
Berlin City .....	229
Iowa County—	
Avoca Vil. ....	230
Mineral Point City .....	230
Iron County—	
Hurley .....	231
Saxon Tp. ....	231



*Index.*

	Page
Jackson County—	
Black River Falls .....	231
Garfield .....	232
Merrillan Vil. ....	232
Jefferson County—	
Fort Atkinson .....	233
Jefferson City .....	233
Watertown .....	234
Juneau County—	
Elroy .....	235
Kenosha County—	
Kenosha City .....	236
Kewaunee County—	
Algoma .....	236
Kewaunee City .....	236
La Crosse County—	
La Crosse City .....	237
Lafayette County—	
Darlington .....	237
Gratrot Vil. ....	238
Langlade County—	
Antigo .....	239
Summit Tp. ....	239
Lincoln County—	
Merrill City .....	239
Russell Tp. ....	240
Manitowoc County—	
Cato Tp. ....	240
Manitowoc City .....	241
Two Rivers .....	242
Marathon County—	
Marathon City .....	242
Reitbrock Tp. ....	242
Marinette County—	
Marinette City .....	243
Peshtigo Vil. ....	244
Marquette County—	
Oxford Tp. ....	245
Springfield Tp. ....	246
Whitefish Bay .....	247
Monroe County—	
Sparta .....	247

*Index.*

	Page
Oconto County—	
Oconto City .....	248
Oneida County—	
Rhineland .....	248
Outagamie County—	
Hortonville Vil. ....	249
Kaukauna .....	249
Ozaukee County—	
Port Washington .....	250
Pepin County—	
Durand City .....	250
Stockholm .....	251
Pierce County—	
River Falls City .....	251
Polk County—	
Omega Vil. ....	252
Portage County—	
Stevens Point .....	252
Price County—	
Knox Tp. ....	253
Park Falls .....	253
Racine County—	
Racine .....	254
Richland County—	
Bloom Tp. ....	255
Richland Center .....	255
Rock County—	
Clinton Vil. ....	256
Janesville City .....	256
St. Croix County—	
Glenwood .....	257
Sauk County—	
Baraboo City .....	257
Sauk City Vil. ....	258
Westfield .....	259
Sawyer County—	
Hayward .....	259
Shawano County—	
Shawano City .....	260
Tigerton Vil. ....	261
Wittenberg Vil. ....	261

*Index.*

	Page
Sheboygan County—	
Lima Tp. ....	262
Sheboygan City .....	262
Taylor County—	
Medford City .....	263
Rib Lake Tp. ....	263
Westboro Tp. ....	264
Trempealeau County—	
Independence .....	264
Trempealeau Vil. ....	265
Vernon County—	
La Farge Vil. ....	265
Viroqua City .....	266
Vilas County—	
Arbor Vitae .....	266
Walworth County—	
Elkhorn .....	266
Lake Geneva .....	267
Washburn County—	
Spooner .....	267
Washington County—	
Schleisingsville .....	268
West Bend City .....	268
Waukesha County—	
Oconomowoc .....	269
Waukesha City .....	270
Waupaca County—	
Clintonville City .....	270
New London .....	271
Waupaca City .....	271
Weyauwega Vil. ....	272
Waushara County—	
Poysippi .....	272
Winnebago County—	
Neenah City .....	273
Oshkosh City .....	273
Wood County—	
Grand Rapids .....	274

*Index.*

	Page
F	
Frank, Louis F., M. D., Report of suspected case of Leprosy . . . .	24
Fond du Lac river, Drainage of . . . . .	13
Fort Atkinson, Water supply of . . . . .	149
G	
Green Bay, Water supply of . . . . .	120 to 126
Greenwood, Specimen of diphtheria examined . . . . .	82
H	
Harrison, G. W., M. D., Smallpox at Medford . . . . .	41
Hartland, Diphtheria specimen examined . . . . .	86
Health of the State . . . . .	1
Health Officers for 1900, Number . . . . .	2, 15
Salaries . . . . .	16
Horicon, Water supply of . . . . .	131
Hudson, Specimen of mutton examined . . . . .	85
Humbird, Water supply of . . . . .	128
I	
Inspections . . . . .	10, 11, 13, 14
Drainage at Neenah . . . . .	64
Drainage at North Milwaukee . . . . .	59
Drainage at Plymouth . . . . .	65
Drainage at Waukesha . . . . .	68
Nuisance at Thiensville . . . . .	62
Nuisance at Bangor . . . . .	63
Sewage Disposal, Wauwatosa . . . . .	60
Work done at New Richmond . . . . .	69
Investigations—	
Smallpox at Eau Claire . . . . .	39
Smallpox at Menomonie . . . . .	41
Smallpox at Medford . . . . .	41
Smallpox at Spring Valley . . . . .	34
Smallpox at West Superior . . . . .	30
Smallpox at Wild Rose . . . . .	26
Smallpox at Woodville . . . . .	33

*Index.*

Investigations.	Page
Smallpox at New London .....	39
Diphtheria at Darlington .....	42
Diphtheria at Surings .....	50
Diphtheria at Tomah .....	45
Diphtheria at Waupaca .....	43
Scarlet fever at Verona .....	51
Scarlet fever at Evansville .....	53
Typhoid fever at Marinette .....	54
Typhoid fever at New Lisbon .....	55
Anthrax at Medford .....	57

## K

Kaukauna, Specimen of pork examined .....	83
Water supply of .....	178
Kewaunee, Sample of blood examined .....	83
Water supply of .....	157 to 160
Kilbourn, Water supply of .....	129

## L

Laboratory for State Board of Health, reference to .....	5, 20
La Grippe, Statistics relative to .....	22
Legislation .....	2 to 7
Diseased cattle .....	13
Leprosy, Statistics relative to .....	14, 23
Suspected case of .....	24
Library .....	87
Local Boards of Health .....	2, 15, 16

## M.

Marks, Solon, M. D., Re-elected President of Board .....	12
Measles, Statistics relative to .....	21
Marinette, Typhoid fever .....	52
Water supply of .....	170 to 174
Medford, Anthrax .....	57
Samples of tissues examined .....	58, 85
Water supply of .....	190
Smallpox .....	41

*Index.*

	Page
Meetings .....	8, 10, 11, 12
Menomonie, Smallpox .....	41
Members of the Board .....	7
Merrill, Water supply of .....	161
Milladore, Diphtheria specimen examined .....	87
Miller, W. S., Consulting Pathologist, Ex. of diseased growth ..	86
Mondovi, Water supply of .....	126

## N.

Neenah, Drainage of .....	64
Neosho, Water supply of .....	133
New Lisbon, Typhoid fever .....	55
Water supply of .....	150 to 153
New London, Smallpox .....	39
New Richmond, Cyclone .....	2, 11
Sum expended .....	12
Work done at .....	69
Water supply of .....	183 to 186
North Milwaukee, Drainage of .....	59
Water supply of .....	176

## O.

Oconomowoc, Water supply of .....	196
Outbreak of Anthrax fever at Medford, Wis., by H. L. Russell	105

## P.

Platteville, Water supply of .....	140
Prentice, Specimen of pork examined .....	85
Physiology and Hygiene, Text books on .....	11, 12, 13, 80
Plymouth, Drainage of .....	65
Pneumonia, Statistics relative to .....	22
Portage, Water supply of .....	130
Potosi, Water supply of .....	142
Poisonous Plant, Hemlock species .....	2, 14, 96
Contribution to a Nearer Knowledge of .....	99
Pamphlet, Fifth Edition, "Powers and Duties of Local Boards of Health" .....	12

*Index.*

R.

	Page
Raymond, Diphtheria specimen examined .....	85
Reedsville, Water supply of .....	168
Report of the Secretary .....	8 to 96
Report of the Secretary in attendance as a delegate to the Conference of State and Provincial Boards of Health:	
For 1899 .....	11, 74
For 1900 .....	14, 75
Report of the Board .....	1 to 7
Resolutions adopted, Passenger Cars, sanitary condition .....	11, 12
Rice Lake, Diphtheria specimen examined .....	32
Richfield, Diphtheria specimen examined .....	37
Ruschhaupt, Mr. Fred .....	2
Contribution to a Nearer Knowledge of a Hemlock Species .....	99
Russell, Prof. H. L., Paper on Outbreak of Anthrax Fever at Medford, Wis. ....	105

S.

Sanitary Analysis of water .....	119
Smallpox .....	1
Circular redrafted .....	9
At Eau Claire .....	39
At Medford .....	41
At Menomonie .....	41
At New London .....	39
At Spring Valley .....	34
At West Superior .....	30
At Wild Rose .....	26
At Woodville .....	33
Statistics relative to .....	14, 17
Vaccination for the prevention of .....	4, 17
Scarlet fever, at Evansville .....	53
At Verona .....	51
Statistics relative to .....	20
Sewage Disposal .....	3, 60
State Board of Health, Laboratory for .....	5
Members of .....	7
Reimbursement of .....	9
Standing Committees of .....	8, 12
Secretary, Reappointment of .....	8
Shell Lake, Diphtheria specimen examined .....	86

*Index.*

	Page
Stettin, Water supply of .....	163
Stevens Point, Water supply of .....	179 to 182
Sheboygan, Examination of ice .....	188
Water supply of .....	189
Sewerage Systems .....	16
School Text Books—Physiology and Hygiene .....	11, 12
Spring Valley, Smallpox .....	34
South Kaukauna, Sample of milk examined .....	84
Surings, Diphtheria .....	50
Suiter, F. C., M. D., Report of outbreak of Diphtheria .....	45
Sturgeon Bay, Water supply of .....	134
Sutherland, Q. O., M. D., Reappointment of .....	8
Report of Diphtheria at Darlington .....	42
Report of Scarlet Fever at Evansville .....	53
T.	
Transportation of Corpses, Bill to provide for the .....	2, 10
Thiensville, Inspection of nuisance at .....	62
Tomah, Diphtheria .....	45
Water supply of .....	176
Tuberculosis, Animal .....	6
Typhoid Fever, at Marinette .....	54
At New Lisbon .....	55
Statistics relative to .....	20
V.	
Vaccination .....	2
Against Anthrax .....	118
Enforcement of rule relative to .....	9
For the Prevention of Smallpox .....	4, 17
Verona, Scarlet Fever .....	51
Vital Statistics .....	5, 25
W.	
Warrens, Diphtheria specimen examined .....	83
Water Analysis .....	10
Water Supplies, Examination of .....	2
A Bill to Provide for the Control of .....	3, 10
Waupaca, Diphtheria .....	43
Water supply of .....	195



*Index.*

Wauwatosa:	Page
Report on sewage disposal .....	61
Sewerage Filtration plant .....	13
Water supply of .....	175
Waukesha, Drainage .....	68
Water supply of .....	199
Waupun, Water supply of .....	139
Wausau, Water supply of .....	164 to 168
West Bend, Water supply of .....	194
West Superior, Smallpox .....	30
Water supply of .....	136
Whitehall, Sample of intestines examined .....	85
Report of findings by W. S. Miller, Pathologist .....	86
Whyte, Wm. F., M. D., Appointment of .....	8
Wild Rose, Smallpox .....	26
Diphtheria specimen examined .....	87
Wingate, U. O. B., M. D., Secretary .....	8
Whooping Cough, Statistics relative to .....	22
Woodville, Smallpox .....	33



# BIENNIAL REPORT

OF THE

# Dairy and Food Commissioner

OF

# WISCONSIN

*For the Years 1899—1900.*

---

**H. C. ADAMS, Dairy and Food Commissioner.**



MADISON, WIS.:  
DEMOCRAT PRINTING COMPANY, STATE PRINTER,  
1901.

## WISCONSIN DAIRY AND FOOD COMMISSION.

---

H. C. ADAMS .....Commissioner  
C. W. SWEETING .....Dairy Expert  
A. S. MITCHELL .....Chemist  
N. J. FIELD .....Dairy Inspector  
FLORENCE Q. NORTON .....Stenographer and Confidential Clerk

## LETTER OF TRANSMITTAL.

---

MADISON, WIS., Oct. 1, 1900.

*To his Excellency, EDWARD SCOFIELD,*

*Governor of the State of Wisconsin:*

I have the honor, in compliance with section 1410, statutes of 1898, to submit herewith the report of this commission for the two years ending September 30, 1900.

H. C. ADAMS,

*Commissioner.*



## RULINGS MADE BY THE COMMISSIONER.

---

Oleomargarine can be manufactured and sold under its own name and color when properly labeled. Each tub, package and parcel shall be marked by a placard bearing the word "OLEOMARGARINE" printed in plain, uncondensed gothic letters not less than one inch long, and such placard shall contain no other words thereon. (Paragraphs 12 and 13 of this compilation.)

All stores and places of business from which oleomargarine shall be sold must have conspicuously posted a placard to be approved by the DAIRY AND FOOD COMMISSIONER, containing the words, printed in letters not less than four inches in length, "OLEOMARGARINE SOLD HERE." (Paragraph 13 of this compilation.)

Oleomargarine colored in imitation of butter cannot be sold. (Paragraph 13 of this compilation.)

It is unlawful for hotel, restaurant or boarding-house keepers to furnish their guests with butter substitutes without notifying such guests that the substitutes so furnished are not butter. (Paragraph 13 of this compilation.)

A bill of fare furnished guests and containing a statement that oleomargarine is used will be deemed a sufficient notice.

Renovated butter, which is butter of inferior quality melted, regranulated, churned with milk and worked over into the appearance of fresh creamery butter, must be branded "RENOVATED BUTTER" upon each tub, package and parcel. (Paragraph 15 of this compilation.)

No imitation butter or cheese can be used in any of the charitable or penal institutions of this state. (Paragraph 14 of this compilation.)

**Cheese.**—THE DAIRY AND FOOD COMMISSIONER is authorized to issue to the owner or manager of each factory making FULL CREAM CHEESE a stencil containing the number of the factory and the state brand, "WISCONSIN FULL CREAM CHEESE." (Paragraph 3 of this compilation.)

The manufacture and sale of filled cheese is prohibited. (Paragraph 12 of this compilation.)

The manufacture and sale of skimmed cheese is prohibited, except when such cheese is made ten inches in diameter and nine inches in height. (Paragraph 12 of this compilation.)

**Milk**—All milk offered for sale or sold must be from healthy cows, of clean and wholesome character, unadulterated, free from preservatives, and must contain not less than three per cent. of butter fat. (Paragraphs 7, 8, 9, 10, 18 of this compilation.)

**Lard**—Imitation lard products must not be sold under the name lard. Compounds containing lard can be sold when labeled "COMPOUND LARD."

**Coffee**—Coffee must be true in name. It must not be coated or polished to conceal inferiority. Imitations containing no coffee cannot be sold as coffee compounds, but may be sold under coin names. Compounds of coffee and chicory, or of coffee and any harmless substitute allied to it in either flavor or strength and not used simply as an adulterant may be sold when labeled "COFFEE COMPOUND."

**Syrup**—Syrup is a product of either corn or sugar cane. When made from sugar cane it is called cane syrup, when made from corn it is glucose syrup. There is little difference in the food value of these syrups. It is questionable whether or not one could be considered as an adulterant of the other, as each falls within the true definition of a syrup, as both the mild Rio and strong Mocha are each true coffees. The sale of glucose as and for cane syrup is a fraud and a violation of law. The sale of a mixture of glucose and cane syrups without other label than that of the general term "syrup" is permitted. Molasses containing glucose must be labeled glucose mixture, as the value of molasses is dependent upon a pungent flavor peculiar to itself, and not found in glucose syrups.

**Maple Sugar** must be true to name. A compound of corn or beet sugar with maple sugar cannot be sold even when labeled compound, as the chief element of value in maple sugar is the maple flavor, and any admixture of other sugars is for the sole purpose of cheapening the article, and is a clear case of adulteration which cannot be remedied by a label.

**Flour**—Wheat flour mixed with corn flour may be sold when labeled "COMPOUND FLOUR" or "COMPOUND WHEAT FLOUR."

Corn and wheat flour are closely allied in their chemical and nutritive properties, and a compound of these articles would be recognized by the law as "an ordinary article of food."

Buckwheat flour may be mixed with other flour or self-rising ingredients not injurious to health and sold as "COMPOUND BUCKWHEAT FLOUR."

**Jellies**—Artificial jellies must not be colored in imitation of natural fruit jellies, but may be sold for what they are when not labeled in a manner calculated to deceive the ordinary purchaser as to their true



character, and when they are free from ingredients deleterious to health.

**Honey**—Honey adulterated with glucose or any other substance may be sold when labeled "ADULTERATED HONEY."

The sale of honey is regulated by a special law enacted in 1881. It appears in the last revision of the statutes, the revisers evidently holding that it was not repealed by the pure food law of 1897. (Paragraphs 26, 27, of this compilation.)

**Mustard**—Dry mustard must be pure.

Prepared mustard must be free from starch or adulterant of any kind, and, if consisting of mustard, vinegar and spices, may be sold when labeled "PREPARED MUSTARD."

A preparation of mustard, vinegar, spices and enough filling of starch to make a mustard of mild flavor to meet a legitimate demand which undoubtedly exists, may be sold when labeled "PREPARED MUSTARD COMPOUND." Harmless coloring matter may be used in preparations of mustard only to secure uniformity of appearance.

**Spices**—All spices must be pure. Any mixture of any foreign article with any spice is an adulteration. An adulteration of spices cannot be remedied by the label "COMPOUND."

**Catsup**—Catsup must not contain preservatives deleterious to health.

**Cream of Tartar** must be pure. All compounds are unlawful.

**Chocolate and Cocoa**, when made only from cocoa mass, sugar and glycerine, may be sold under the name "PREPARED COCOA" or "SWEET CHOCOLATE."

**Candy** must be free from inert mineral matters, and not colored with substances deleterious to health.

**Canned goods** must be labeled with grade or quality of the goods and the name and address of the seller or manufacturer. (Paragraph 23 of this compilation.)

**Extracts**—Artificial extracts can be manufactured and sold only in cases where it is not possible to produce an extract from the fruit itself. Extracts of this class must be labeled "ARTIFICIAL EXTRACTS."

**Lemon Extract** shall contain at least five per cent. of the pure oil of lemon dissolved in alcohol. Harmless coloring matter will be permitted. The sale of compound lemon extracts is prohibited.

**Vanilla Extract** shall be made wholly from vanilla beans, and shall contain no artificial coloring. The color of a vanilla extract is an indication of its strength, and coloring in such case would be used for the purpose of concealing inferiority and of making the article appear better than it really is.

When other flavoring substances are used, such as Vanillin, Coumarin or Tonka, the extract should be labeled so as to show the purchaser

its true character, as "COMPOUND EXTRACT OF TONKA AND VANILLIN." The label "COMPOUND EXTRACT OF VANILLA" will not be deemed sufficient notice of the composition of the article.

**Vinegar**—All vinegar must contain four per cent. of acetic acid. Cider vinegar must contain two per cent. of apple solids. It is unlawful to label spirit vinegars as fruit vinegars. Low wine or spirit vinegars may be colored with harmless coloring matter and sold for what they are. (Paragraph 29 of this compilation.)

**Baking Powder**—Baking Powders containing alum must be labeled,

**"THIS BAKING POWDER CONTAINS ALUM."**

The label must be printed in black ink in legible type not smaller than brevier heavy gothic caps, and shall give the name and address of the manufacturer. (Paragraph 24 of this compilation.)

# DAIRY AND FOOD LAWS OF WISCONSIN

---

## Of the Office and Duties of the Dairy and Food Commissioner.

---

### 1. Appointment; term; vacancy; supplies; assistants and report.

[Section 1410, Statutes of 1898.] The dairy and food commissioner shall be appointed by the governor, by and with the advice and consent of the senate, for a term of two years from the date of his appointment and until his successor qualifies. Vacancies occurring from any cause shall be filled for the remainder of the term by the governor, with the advice and consent of the senate if it shall be in session, or if it is not in session, subject to approval at the session next held after such appointment is made, if the term for which it was made has not expired. Such commissioner may, with the advice and consent of the governor, appoint an assistant, who shall be an expert in dairy products, and a chemist who shall be a practical analytical chemist; he may also, with such advice and consent, appoint an agent for the inspection of milk dairies, factories and creameries, and to assist in the work of the dairy and food commission at such times and for such periods of time as may be required in the enforcement of the dairy and food laws. The compensation of such agent shall be three dollars per day for each day of actual service, and his expenses,

to be audited by the secretary of state on the presentation of accounts approved by the dairy and food commissioner. Said commissioner may also appoint a stenographer and confidential clerk. The commissioner shall be furnished with a suitable office in the capitol, and with such supplies and printing as may be necessary. He shall as soon as practicable after the thirtieth day of September in each even-numbered year make a report to the governor and give therein an itemized statement of all expenses incurred by him, and of all fines collected, with such statistics and other information and suggestions as he may regard of value.

## **2. His powers and duties; legal assistance.**

[Section 1410a, Statutes of 1898.] It shall be the duty of the commissioner to enforce the laws regarding the production, manufacture and sale of dairy products, the adulteration of any article of food or drink or of any drug, and personally or by his assistants to inspect any milk, butter, cheese, lard, syrup, coffee, tea or other article of food or drink or drug made or offered for sale within this state which he may suspect or have reason to believe to be impure, unhealthful, adulterated or counterfeit, and to prosecute or cause to be prosecuted any person, firm or corporation engaged in the manufacture or sale of any adulterated or counterfeit article or articles of food or drink or drug in violation of law. The district attorney of the county in which a violation of any such law has occurred shall, when called upon by the commissioner or either of his assistants to do so, give all the aid he can to secure the execution of the law and shall prosecute cases arising under the provisions of this chapter or other provisions of these statutes relating to the adulteration of food, drinks and drugs and their sale. Such commissioner shall have power to appoint, with the approval of the governor, special counsel to prosecute or assist in the prosecution of any case arising

under the provisions of these statutes imposing a penalty for adulterating dairy products or practicing deception or fraud in the manufacture and sale thereof. All fines collected in prosecutions begun or caused to be begun by the dairy and food commissioner or either of his assistants shall be paid into the state treasury.

### **3. Access to buildings; samples of food, etc.; stencils for cheese.**

[Section 1410*b*, Statutes of 1898.] The commissioner, his agent or assistant shall have free access to any barn or stable where any cow is kept or milked, or to any factory, building, dairy or premises where any dairy product is manufactured, handled or stored, when the milk from such cow or such product is to be sold or shipped, and may enforce such measures as are necessary to secure perfect cleanliness in and around the same and of any utensil used therein, and to prevent the sale of milk from cows diseased or fed upon unwholesome food. Either of them may enter any place or building in which there is reason to believe that any food, drink or drug is made, prepared, sold or offered for sale, and may open any package or receptacle of any kind containing, or which is supposed to contain, any article of food, drink or drug, and examine or analyze the contents thereof. Any such article or a sample thereof may be seized or taken for the purpose of having it analyzed; but if the person from whom it is taken shall so request, at the time of taking, the officer shall then and in the presence of such person securely seal up two samples of such article, one of which shall be for analysis under the direction of the commissioner, the other shall be delivered to the person from whom the sample or article was obtained. Said commissioner shall adopt a uniform stencil, bearing a suitable device or motto, a number and the words "Wisconsin full cream cheese" and a space for a number, and upon proper application therefor and under such regu-

lations as to the custody and use thereof as he may prescribe, issue the same, with the proper number inserted, to the proprietor or manager of any cheese factory in this state; he shall enter in a book kept for that purpose the name, location and number of each factory using such stencil, no number being duplicated, and the name of the person thereat authorized to use the same.

See note to paragraph 4 for rulings on questions of evidence arising under a similar statute.

#### 4. Submission of articles for analysis; evidence.

[Section 1410c, Statutes of 1898.] The state board of health, medical officers of local boards of health, town and village boards or common councils may submit to the dairy and food commissioner samples of water or other drinks, of food or drugs for analysis, and the same shall be examined and reports made of the analysis thereof to the body or officer submitting the same as soon as practicable; such reports shall fully specify the results of the analysis and be signed by such commissioner; they shall be accepted in all courts and places as prima facie evidence of the properties or condition of the articles analyzed.

**Questions of evidence as to sealing and analysis.** If there is contradictory evidence concerning the sufficiency of the seal of a sample, and the credibility of the witnesses for the prosecution is submitted to the jury, the defendant is not injured. If there is evidence that a few drops of carbolic acid were added to a sample of milk, and it is submitted to the jury as a question of fact whether this would change the character of the milk, make the analysis impossible or difficult, or in any way injuriously affect the sample for the purpose of analysis, the defendant has no cause of complaint: *Commonwealth v. Spear*, 143 Mass., 172.

It is observed of a statute similar to this and the preceding paragraph that it is intended to secure a fair examination and analysis by providing the defendant with the means of making an analysis of a portion of the same specimen which the state has analyzed. If the sample is not saved, or not saved in proper condition, he has no means of showing that his evidence, if any he has as to the quality of the milk,

applies to that with reference to which the government witnesses have testified. It cannot be said that a portion reserved is sealed when wax is merely placed on the top of the cork and not extended over the mouth of the bottle, thus making it air-tight, if it is shown that the character of the milk will be affected by the air: *Commonwealth v. Lockhardt*, 144 Mass., 132.

Where the article analyzed has not been taken under the statute the competency of evidence is to be determined by the common law, and the testimony of any person who had sufficient skill to analyze it, and who has analyzed some which was proven to have been sold by the defendant, is admissible: *Commonwealth v. Holt*, 146 Mass., 38.

##### **5. Farmers' institutes; expense of analyses.**

[Section 1410*d*, Statutes of 1898.] The governor may authorize the commissioner or his assistants, when not engaged in the performance of other official duties, to give such aid in farmers' institutes, dairy and farmers' conventions and the agricultural department of the state university as may be deemed advisable. For the necessary expenses of making the analyses contemplated in the foregoing sections the commissioner may incur an annual expense of not to exceed six hundred dollars, the accounts for which, when verified and itemized, and approved by the governor shall be audited by the secretary of state.

##### **6. Obstructing performance of commissioner's duty.**

[Section 4607*h*, Statutes of 1898.] Any person who shall obstruct the dairy and food commissioner of this state or either of his assistants in the performance of their duty by refusing him entrance to any place he is authorized to enter or by refusing to deliver to him a sample of any article of food, drink or drug made, sold, offered or exposed for sale by the person to whom request therefor is made, if the value thereof is tendered, shall be punished for the first offense by fine not exceeding twenty-five dollars, and for each subsequent offense by fine not exceeding five hundred dollars nor less than fifty dollars.

## Sale of Impure Milk and Cream.

---

### 7. Penalty for.

[Section 4607, Statutes of 1898.] Any person who shall sell or offer for sale, furnish or deliver, or have in possession with intent to sell or offer for sale or furnish or deliver to any creamery, cheese factory, corporation or person as pure, wholesome and unskimmed any unmerchantable, adulterated, impure or unwholesome milk shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars.

**Validity.** A New York law (ch. 183, 1885, ch. 202, 1884,) providing that "no person or persons shall sell, supply or bring to be manufactured to any butter or cheese factory any milk diluted with water or any unclean, impure, unhealthy, adulterated or unwholesome milk," has been sustained as a valid exercise of legislative power: *People v. West*, 106 N. Y., 293.

**Construction.** The New York law does not make fraudulent intent a necessary ingredient of the offense and it would not be a reasonable construction of it to apply it to a dairyman who owns and conducts a butter or cheese factory for the manufacture of those articles from milk furnished exclusively by himself from his own cows. If the defendant is such a person, these facts are matter of defense, and their existence need not be negatived on the face of the indictment: *People v. West*, 106 N. Y., 293.

Under a Massachusetts law imposing a penalty for selling or offering to sell "adulterated milk, or milk to which any foreign substance has been added," it is immaterial whether the substance added is injurious or not. The indictment need not allege the quantity of such substance: *Commonwealth v. Schaffner*, 146 Mass., 512.

Under an act which prohibits the sale of milk which is not of a good standard quality, the fact that the milk was delivered under a contract to furnish the person who bought it with the milk of one dairy is not a defense if that furnished was not of such quality. The contract



would be held to contemplate milk which should be bought and sold: Commonwealth v. Holt, 146 Mass., 38.

**Sale, what is.** A hotel-keeper who sells milk to be drunk by his guests on his premises is liable if the milk so sold is not of the quality prescribed by the next section: Commonwealth v. Vieth, 155 Mass., 442.

The Massachusetts statute uses the language "whoever by himself, or by his servant or agent," etc. Held to include a hotel-keeper's servant who made a sale to a guest, though the master was not present and did not consent to or know of the particular sale: Commonwealth v. Vieth, 155 Mass., 442.

Milk bought by a guest and delivered to him as part of his meal is just as much a sale as if a specific price had been put upon it or it had been bought or paid for by itself: Commonwealth v. Warren, 160 Mass., 533.

**Intent to sell, evidence of.** Where one is charged with having in his possession, with intent to sell, milk which is not of a good, standard quality, the fact that he was upon a wagon which had his name painted on it, and that therein were cans of milk, and that a sample was given from one of them to one employed by the milk inspector for analysis, is competent evidence to go to the jury upon the question of his intent: Commonwealth v. Rowell, 146 Mass., 128.

## 8. Standard for pure; evidence.

[Section 4607a, Statutes of 1898.] In all prosecutions under the preceding section or any other section of these statutes for the sale of unmerchantable, adulterated, impure or unwholesome milk any milk which shall be proven to contain less than three per centum of pure butterfat, when subjected to chemical analysis or other satisfactory test, or that has been diluted, or any part of the cream of which has been abstracted, or that, or any part of it, was drawn from a cow known to the defendant to have been at the time it was drawn within fifteen days before or less than four days after parturition, or which was so known to have any disease, ulcers or other running sores, then and in either such case the milk sold or offered for sale, furnished or delivered or had in possession with intent to sell it, offer it for sale or furnish or deliver it as pure, wholesome and unskimmed shall be held or found to be un-

merchantable, adulterated, impure or unwholesome, as the fact may be. Proof of adulteration or skimming may be made with such standard tests and lactometers as are used to determine the quality of milk or by chemical analysis.

**Validity.** The supreme court of New York has ruled that a statute which provides that milk which contains less than three percentum of fat shall be declared adulterated is unconstitutional. The ground upon which this was held was that the statute deprived the defendant of his liberty and property without due process of law, in that it barred him of the right upon the trial of the accusation against him to have the issue determined according to what might be the proof, and compelled him to submit to the statutory declaration thereof, without regard to the truth: *People v. Cipperly*, 37 Hun, 317. This decision was not unanimous, and on appeal was reversed by the court of appeals, without opinion, and on the grounds given by the dissenting judge of the supreme court: *People v. Cipperly*, 101 N. Y., 634.

A law of New Hampshire (ch. 42, laws of 1883) prohibited the sale of adulterated milk, or milk to which water or any foreign substance has been added, or, as pure, milk from which the cream or a part thereof has been removed. It authorized inspectors of milk to take samples and cause the same to be analyzed, and expressed that in all prosecutions under it if the milk is shown by analysis to contain more than eighty-seven per cent. of watery fluid, or less than thirteen per cent. of milk solids, it shall be deemed for the purposes of the statute to be adulterated. It was contended that the clause fixing the standard was unconstitutional. In answer the court said: "The statute tends to discourage the breeding of a certain class of cattle for the supply of the milk market. The difficulty of guarding against the adulteration of milk may have influenced the legislature in fixing a standard of richness. Practically it makes no difference whether milk is diluted after it is drawn from the cow, or whether it is made watery by giving her such food as will produce milk of an inferior quality, or whether the dilution regarded by the legislature as excessive, arises from the nature of a particular animal or a particular breed of cattle. The sale of such milk to unsuspecting consumers, for a price in excess of its value, is a fraud which the statute was designed to suppress. It is a valid exercise by the legislature of the police power for the prevention of fraud, and protection of the public health, and as such is constitutional:" *State v. Campbell*, 64 N. H., 402.

In Rhode Island a similar provision has been sustained against an objection to its validity on the ground that it virtually confined the testimony to the analysis of the samples taken by the inspector, which

samples were destroyed in making the analysis, so that the testimony could not be controverted. The court was of opinion "that the testimony, though it may not always be practicable to controvert it directly by another analysis, can be controverted by evidence of collateral facts going to prove that the analysis is incorrect, and therefore that the act is not unconstitutional for the reason alleged." *State v. Groves*, 1 Atl. Rep., 384. *Shivers v. Newton*, 45 N. J. L., 469, is to much the same effect.

**Intent immaterial.** The doing of the act condemned by the law constitutes the offense, if it is silent as to the knowledge or intent of the person who is charged with violating it. *People v. Kibler*, 106 N. Y., 321, 12 N. E. Rep., 795.

**9. Milk of diseased cows, of cows kept in an unsanitary condition or fed on slops from a distillery or a vinegar factory.**

[Section 1, chapter, 313, laws of 1899.] No person by himself or agent shall offer for sale, furnish or deliver, or have in possession with the intent to sell, or offer for sale, or furnish or deliver, milk or cream drawn from sick or diseased cow or cows kept in filthy and unsanitary condition, or cows fed on refuse or slops from distilleries or vinegar factories, unless such refuse or slop be mixed with other dry sanitary grain or food to a consistency of a thick mush.

**10. Foreign substance not to be added to milk or cream not pasteurized.**

[Section 2, chapter 313, laws of 1899.] No person by himself or agent shall offer for sale or furnish or deliver or have in possession with the intent to sell, offer for sale, or furnish or deliver, any milk or cream having therein or containing in any amount any foreign substance or coloring matter or any chemical or preservative, whether for the purpose of increasing the quantity of milk or cream or for improving its appearance, or for preserving the condition of sweetness thereof, or for any purpose whatever,

provided that nothing in this act shall be construed to prohibit the sale of pasteurized milk or cream, to which viscogen or sucrate of lime has been added solely for the purpose of restoring the viscosity, if the same be distinctly labeled in such manner as to advise the purchaser of its true character.

The foregoing section probably repeals in part sec. 4607b, Statutes of 1898, which reads as follows: "Any person who shall sell or offer for sale, consign or have in possession with intent to sell any milk, cream, butter, cheese or other dairy products, or who shall deliver to any creamery or cheese factory milk or cream to be manufactured into butter or cheese to which milk, cream, butter, cheese or other dairy products, boracic acid, salicylic acid or compounds containing them, or other antiseptics injurious to health have been added, shall be punished by fine not exceeding one hundred dollars nor less than twenty-five dollars."

#### **11. Penalty for violating either of the two preceding sections.**

[Section 3, chapter 313, laws of 1899.] Any person violating any of the provisions of this act shall, upon conviction, be fined not less than twenty-five nor more than one hundred dollars for each and every offense.

## Sale of Imitation Cheese and Butter.

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### 12. Penalty; size of skimmed milk cheese.

[Section 4607c, Statutes of 1898.] Any person who shall, by himself, his agent or servant, manufacture, buy, sell, offer, ship, consign, expose or have in possession for sale any cheese manufactured from or by the use of skim milk to which there has been added any fat which is foreign to such milk, or who shall by himself, his agent or servant, manufacture, buy, sell, offer, ship, consign, expose or have in possession for sale, within this state, any skimmed-milk cheese, or cheese manufactured from milk from which any of the fat originally contained therein has been removed, except such last mentioned cheese is ten inches in diameter and nine inches in height, or who shall, by himself, his agent or servant, render or manufacture, sell, ship, consign, offer or expose for sale or have in possession with intent to sell, any article, product or compound made wholly or partly out of any fat, oil or oleaginous substance or compound thereof, not produced from unadulterated milk or cream from the same, and without the admixture or addition of any fat foreign to said milk or cream, which shall be in imitation of yellow butter produced from such milk or cream, with or without coloring matter, shall, for the first offense, be punished by fine of not more than five hundred dollars nor less than fifty dollars, and for each subsequent offense by imprisonment in the county jail not to exceed sixty days nor less than ten days, or by fine of not more than five hundred dollars nor less than one hundred dollars, or by both such fine and imprisonment. Nothing in

this section shall be construed to prohibit the manufacture or sale of oleomargarine in a separate and distinct form and in such manner as will advise the consumer of its real character, and free from coloration or ingredient that causes it to look like butter.

**Origin.** So much of the foregoing as relates to butter is almost an exact copy of sec. 1, ch. 5, acts of Mass., 1891. The words "ship, consign," "and without the admixture or addition of any fat foreign to said milk or cream," found in the section, are not in the Massachusetts act.

**Validity.** A state may lawfully prohibit the manufacture out of oleaginous substances, or out of any of its compounds other than that produced from unadulterated milk or cream from such milk, of an article designed to take the place of butter or cheese produced from unadulterated milk: *People v. Arensberg*, 105 N. Y. 123; *Commonwealth v. Huntley*, 156 Mass. 236; *State v. Marshall*, 64 N. H. 549; *State v. Addington*, 77 Mo. 110; *Butler v. Chambers*, 36 Minn. 69; *McAllister v. State*, 72 Md. 390; *Weideman v. State*, 56 N. W. Rep. 688; *State v. Horgan*, 55 Minn. 133. It may also prohibit the manufacture or sale, or the offering for sale, of any imitation or adulterated butter or cheese, or the having of it in possession with intent to sell the same as an article of food: *Powell v. Pennsylvania*, 127 U. S. 678.

Though it may be severe to punish those who unintentionally sell the article prohibited, the legislature has power to so provide in order that the much larger number may be protected: *State v. Newton*, 14 Atl. Rep. 604.

Such an act is not void though the oleomargarine sold was brought into the state where the sale was made from another state and was sold in the original package: *Commonwealth v. Huntley*, 156 Mass. 236; *State v. Newton*, 14 Atl. Rep. 604. The power of the state to enact such a law is not affected by the legislation of congress imposing special taxes upon manufacturers and wholesale and retail dealers in oleomargarine: *Plumley v. Massachusetts*, 155 U. S. 461.

**The ruling of the United States supreme court.** The validity of the Massachusetts statute, so far as it was affected by the clause of the federal constitution giving congress power over commerce, came before the supreme court of the United States in *Plumley v. Massachusetts*, 155 U. S., 461. It was there held, by a majority of the judges (three dissenting), that the federal statute imposing special taxes upon manufacturers and wholesale and retail dealers in oleomargarine does not restrict the power of the states over the manufacture and sale thereof within their respective limits. "The taxes prescribed by that act were

Imposed for national purposes, and their imposition did not give authority to those who paid them to engage in the manufacture or sale of oleomargarine in any state which lawfully forbade such manufacture or sale, or to disregard any regulation which a state might lawfully prescribe in reference to that article. . . . Nor was the act of congress relating to oleomargarine intended as a regulation of commerce among the states. Its provisions do not have special application to the transfer of oleomargarine from one state of the union to another. They relieve the manufacturer or seller, if he conforms to the regulations prescribed by congress or by the commissioner of internal revenue, under the authority conferred upon him in that regard, from penalty or punishment so far as the general government is concerned, but they do not interfere with the exercise by the states of any authority they possess of preventing deception or fraud in the sales of property within their respective limits."

The opinion of the court then proceeds to discuss the validity of the statute of Massachusetts as affected by the commerce clause of the federal constitution. "It will be observed," said Justice Harlan, "that the statute of Massachusetts which is alleged to be repugnant to" that clause "does not prohibit the manufacture or sale of all oleomargarine, but only such as is colored in imitation of yellow butter produced from pure unadulterated milk or cream of such milk. If free from coloration or ingredient that causes it to look like butter, the right to sell it 'in a separate and distinct form, and in such manner as will advise the consumer of its real character,' is neither restricted nor prohibited. It appears, in this case, that oleomargarine, in its natural condition, is of a 'light yellowish color,' and that the article sold by the accused was artificially colored 'in imitation of yellow butter.' Now the real object of coloring oleomargarine so as to make it look like genuine butter is that it may appear to be what it is not, and thus induce unwary purchasers, who do not closely scrutinize the label upon the package in which it is contained, to buy it as and for butter produced from unadulterated milk or cream from such milk. The suggestion that oleomargarine is artificially colored so as to render it more palatable and attractive can only mean that customers are deluded, by such coloration, into believing that they are getting genuine butter. If any one thinks that oleomargarine, not artificially colored so as to cause it to look like butter, is as palatable or wholesome for purposes of food as pure butter, he is, as already observed, at liberty under the statute of Massachusetts to manufacture it in that state or to sell it there in such manner as to inform the customer of its real character. He is only forbidden to practice, in such matters, a fraud upon the general public. The statute seeks to suppress false pretenses and to promote fair

dealing in the sale of an article of food. It compels the sale of oleo-margarine for what it really is, by preventing its sale for what it is not."

After reviewing many of the cases cited by the supreme court of the United States and relied upon by counsel for the defendant to support his contention that the statute was void, the opinion uses this language: "In none of the above cases is there to be found a suggestion or intimation that the constitution of the United States took from the states the power of preventing deception and fraud in the sale, within their respective limits, of articles in whatever state manufactured, or that that instrument secured to any one the privilege of committing a wrong against society. . . . If there be any subject over which it would seem the states ought to have plenary control, and the power to legislate in respect to which it ought not to be supposed was intended to be surrendered to the general government, it is the protection of the people against fraud and deception in the sale of food products. Such legislation may, indeed, indirectly or incidentally affect trade in such products transported from one state to another state. But that circumstance does not show that laws of the character alluded to are inconsistent with the power of congress to regulate commerce among the states. For, as said by this court in *Sherlock v. Alling*, 93 U. S. 99, 103: 'In conferring upon congress the regulation of commerce, it was never intended to cut the states off from legislating on all subjects relating to the health, life and safety of their citizens, though the legislation might indirectly affect the commerce of the country. Legislation, in a great variety of ways, may affect commerce and persons engaged in it without constituting a regulation of it within the meaning of the constitution. . . . And it may be said generally, that the legislation of a state, not directed against commerce or any of its regulations, but relating to the rights, duties, and liabilities of citizens, and only indirectly and remotely affecting the operations of commerce, is of obligatory force upon citizens within its territorial jurisdiction, whether on land or water, or engaged in commerce, foreign or interstate, or in any other pursuits.'

The opinion of the court then proceeds to point out that the case of *Leisy v. Hardin*, 135 U. S. 100, in which it was held that ardent spirits, distilled liquors, ale and beer, were subjects of exchange, barter and traffic, and, being articles of commerce, their sale while in the original packages in which they are carried from one state to another, could not, without the assent of congress, be forbidden by the state into which they were transported, was not conclusive of the case before it, because the articles sold in that case were what they purported to be. The opinion of the majority of the court on the Massachusetts statute



concluded thus: "We are of opinion that it is within the power of a state to exclude from its markets any compound manufactured in another state, which has been artificially colored or adulterated so as to cause it to look like an article of food in general use, and the sale of which may, by reason of such coloration or adulteration, cheat the general public into purchasing that which they may not intend to buy. The constitution of the United States does not secure to any one the privilege of defrauding the public. The deception against which the statute of Massachusetts is aimed is an offense against society; and the states are as competent to protect their people against such offenses or wrongs as they are to protect them against crimes or wrongs of more serious character. And this protection may be given without violating any right secured by the national constitution, and without infringing the authority of the general government. A state enactment forbidding the sale of deceitful imitations of articles of food in general use among the people does not abridge any privilege secured to citizens of the United States, nor, in any just sense, interfere with the freedom of commerce among the several states."

**Expose for sale.** Under the English statute regulating the sale of margarine it has been held that margarine kept for sale upon the counter of a shop, but behind a screen hiding it from the view of customers, is not exposed for sale (*Crane v. Lawrence*, 25 Queen's B. Div., 152), and that parcels of margarine placed upon a counter or shelf, in view of customers, are exposed for sale, although so wrapped in paper that the margarine cannot be seen. *Wheat v. Brown*, [1892] 1 Queen's B., 418.

In Massachusetts, from whence this section was borrowed (see first sentence of note), the court has said, in a case decided in 1893, that whenever goods are placed for convenient delivery upon expected sales they are put out and in one sense exposed for sale. But in our opinion, the words are not so used in the statute under consideration. The prohibited articles are designed and adapted to deceive the eye, and because their appearance is likely to induce those who see them to buy them as the genuine of butter of which they are in imitation, there is special reason for prohibiting their exposure to view. It was held that oleomargarine colored in imitation of yellow butter and kept for sale in a shop, so long as it was in a closed and covered refrigerator and could not be seen by customers, was not exposed for sale, notwithstanding there was a sign in the shop to the effect that oleomargarine was sold there. *Commonwealth v. Byrnes*, 158 Mass. 172.

**Sale, what is.** A restaurant keeper who furnishes oleomargarine to a customer, as part of a meal ordered by the latter, sells the same, notwithstanding the meal is paid for as a whole and the oleomargarine is

not eaten, but carried away. *Commonwealth v. Miller*, 131 Pa., 118. See note to paragraph 13.

A foreign manufacturer who puts up oleomargarine in packages evidently adapted for and intended to meet the requirements of an unlawful retail trade in another state, sending them to an agent there for sale to consumers, is not engaged in interstate commerce, but in an effort to carry on a forbidden business. *Commonwealth v. Paul*, 170 Pa., 284.

### 13. Notice of sale of imitation butter.

[Section 4607*d*, Statutes of 1898.] Any person who shall sell or offer for sale to any person who asks, sends or inquires for butter, any oleomargarine, butterine or any similar substance made in imitation or semblance of pure butter, not made entirely from the milk of cows, with or without coloring matter, or who shall expose for sale oleomargarine, butterine, or any similar substance not marked and distinguished on the outside of each tub, package or parcel thereof by a placard with the word "oleomargarine," and not having also upon every open tub, package or parcel thereof a placard with the word "oleomargarine," such placard in each case to be printed in plain, uncondensed gothic letters not less than one inch long, and not containing any other words thereon, or who shall sell oleomargarine, butterine or any similar substance from any dwelling, store, office or public mart, without having conspicuously posted thereon the placard or sign, in letters not less than four inches in length, "oleomargarine sold here," or "butterine sold here," which placard or sign shall be approved by the dairy and food commissioner of this state, or who shall sell or deliver from any cart, wagon or other vehicle, upon the public streets or ways, oleomargarine, butterine or any similar substance, without having on the outside of both sides of said cart, wagon or other vehicle a placard, in uncondensed gothic letters not less than three inches in length, "licensed to sell oleomargarine," or who shall furnish or cause to be furnished in any hotel, boarding-house,

restaurant or at any lunch counter, oleomargarine, butterine or any similar substance to any guest or patron thereof, without first notifying such guest or patron that the substance so furnished is not butter, shall be punished as provided in the last preceding section.

**Validity.** See note to paragraph 24. It is "within the undoubted power of the legislature to prohibit the sale of substances having the semblance of butter or cheese, but not wholly made from pure cream or milk, unless each package of such substance should have printed, stamped or marked thereon, in the manner prescribed by the statute, the name of each article used in, or entering into, the composition of such substance, and this power is possessed by the legislature over the sale of articles protected by letters patent as well as of those not protected:" *Palmer v. State*, 39 Ohio St. 237.

**Expose for sale.** See note to paragraph 12.

**Notice.** The provisions requiring notice are much like the corresponding clauses in ch. 412, Mass. acts, 1891, and have been held not to be in conflict with the federal statute authorizing the sale of oleomargarine: *Commonwealth v. Crane*, 158 Mass. 218.

Notice given by printed signs and on the bills of fare satisfies the statute; it need not be given, either orally or in writing, to each guest on every occasion when he is furnished with oleomargarine or butterine in the stead of butter: *Commonwealth v. Stewart*, 159 Mass. 113.

**Sale by agent.** The Massachusetts statute in terms provides that the penalty imposed for the sale of oleomargarine which is not labeled as it prescribes shall be imposed whether the sale is made by the vendor or his agent. It is held not to be a defense to show that the sale by the agent of an unmarked package or quantity was made through inadvertence; a guilty intent is not an element in the offense: *Commonwealth v. Gray*, 150 Mass. 327.

**Oleomargarine.** The defendant in a prosecution for selling oleomargarine from a wagon without having the placard required cannot escape liability because that sold by him is usually known as oleomargarine, looks like pure butter and is not easily distinguished therefrom, and the other kind is dishonestly and designedly made in imitation of the best pure butter. The statute applies to all kinds: *Commonwealth v. Crane*, 162 Mass. 506.

#### 14. Imitation butter and cheese in state institutions.

[Section 4607e, Statutes of 1898.] Any person who shall knowingly or negligently buy or procure for use as food in

any of the charitable, correctional or penal institutions of this state any butter or cheese not made wholly and directly from pure milk or cream, salt and harmless coloring matter, shall be fined not exceeding fifty dollars nor less than twenty-five dollars for the first offense, and for each subsequent offense shall be punished by imprisonment in the county jail not more than ninety days nor less than ten days, or by fine not exceeding one hundred dollars nor less than fifty dollars, or by both fine and imprisonment.

### Renovated Butter.

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#### 15. How marked.

[Section 1, chapter 76, laws of 1899.] No person by himself or agent shall sell, exchange or deliver, or expose for sale, or offer for sale renovated butter, or butter which has been melted and its rancidity removed or masked, and which has been regranulated, colored and prepared in imitation or in semblance of genuine creamery butter, unless the substance be marked distinctly on the outside of each and every package or parcel thereof by a label printed with the words "Renovated Butter," and without having on each and every open tub, package or parcel thereof a placard with the words "Renovated Butter," such placard or brand in each case to be printed in plain, uncondensed gothic capitals not less than one inch long, and such placard shall contain no other words thereon.

#### 16. Penalty.

[Section 2, chapter 76, laws of 1899.] Any person who shall violate any of the provisions of this act [the preceding paragraph] shall be guilty of a misdemeanor, and upon conviction thereof, be fined not less than twenty-five nor more than one hundred dollars.

## Fraud in Labeling Cheese.

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### 17. Penalty for.

[Section 4438*g*, Statutes of 1898.] Any person who shall sell, offer for sale, ship or consign cheese labeled with a false brand or label as to the quality of the article, or shall use any stencil or label furnished by the dairy and food commissioner of this state and bearing the words "Wisconsin full cream cheese," otherwise than upon the bandage on the side of full cream cheese and upon the package containing the same, shall be punished by fine of not more than fifty dollars nor less than twenty-five dollars.

## Cleanliness of Dairy Cows and Utensils.

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### 18. Penalty for violating law.

[Section 4607*j*, Statutes of 1898.] Any person owning or managing a dairy, the product of which is sold for family use, who shall feed his cows upon unwholesome food or keep them in unclean stables or handle the milk with unclean utensils shall be deemed guilty of a misdemeanor and upon conviction thereof be fined not less than twenty-five dollars nor more than one hundred dollars for the first offense, and not less than one hundred dollars nor more than two hundred dollars for each subsequent offense.

## Fraud in Dairy Manufactories.

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### 19. Wrongful use of milk, etc.; fraudulent accounts.'

[Section 1494a, Statutes of 1898.] Any butter or cheese manufacturer who shall knowingly use or allow any other person to use for the benefit of himself or any other person than he who is entitled to the benefit thereof any milk or cream from the milk brought to him, without the consent of the owner thereof, or who shall refuse or neglect to keep or cause to be kept a correct account (which shall be open to the inspection of any person furnishing milk to him) of the amount of milk daily received, or of the number of pounds of butter, and the number and aggregate weight of cheese made by him each day, or of the number of cheese cut or otherwise disposed of and the weight of each, shall for each and every offense forfeit not less than twenty-five nor more than one hundred dollars, one-half of which shall be paid to the person upon whom any such fraud has been committed and who first made complaint thereof; the remainder shall be paid to the school fund.

## Adulteration of Food, Drugs, Liquers, etc.

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### 20. Sale of unwholesome provisions.

[Section 4599, Statutes of 1898.] Any person who shall knowingly sell any kind of diseased, corrupted or unwholesome provisions, whether for meat or drink, without making the same fully known to the buyer, shall be punished by imprisonment in the county jail not more than six months or by fine not exceeding one hundred dollars.

## 21. Sale of adulterated articles; definitions.

[Section 4600, Statutes of 1898.] Any person who shall, by himself, his servant or agent or as the servant or agent of any other person, sell, exchange, deliver or have in his possession with intent to sell, exchange, offer for sale or exchange any drug or article of food which is adulterated, shall be fined not less than twenty-five dollars nor more than one hundred dollars or be imprisoned in the county jail not less than thirty days nor more than four months. The term "drug," as used in this section, shall include all medicines for internal or external use, antiseptics, disinfectants and cosmetics. The term "food," as used herein, shall include all articles used for food or drink by man, whether simple, mixed or compound.

**Origin.** This and the next paragraph are modeled after paragraphs 8805-8807, R. S. of Ohio (6th ed.), first enacted in that state in 1884.

**Agent.** An agent who sells for a non-resident principal is within the statute: *Meyer v. State*, 54 Ohio St. 242.

**Pleading; ignorance.** It need not be alleged that the article sold was to be used as food. Ignorance of the adulteration is not a defense: *State v. Kelly*, 54 Ohio St., 166.

## 22. Adulteration, what is.

[Section 4601, Statutes of 1898.] An article shall be deemed to be adulterated within the meaning of the preceding section:

1. In the case of drugs: First, if, when sold under or by a name recognized in the United States pharmacopœia, it differs from the standard of strength, quality or purity laid down in the latest current edition thereof; second, if when sold under or by a name not recognized in said pharmacopœia, but which is found in the pharmacopœia of some other country, the national formulary or other standard work on materia medica, it differs materially from the standard of strength, quality or purity laid down in the latest current edition of such work; third, if its strength,

quality or purity falls below the professed standard under which it is sold.

2. In the case of food: First, if any substance or substances have been mixed with it, so as to lower or depreciate or injuriously affect its strength, quality or purity; second, if any inferior or cheaper substance or substances have been substituted wholly or in part for it; third, if any valuable or necessary ingredient has been wholly or in part abstracted from it; fourth, if it is an imitation of or sold under the name of another article; fifth, if it consists, wholly or in part, of a diseased, infected, decomposed, putrid, tainted or rotten animal or vegetable substance or article, whether manufactured or not; sixth, if it is colored, coated, polished or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is; seventh, if it contains any added substance or ingredient which is poisonous, injurious or deleterious to health, or any deleterious substance not a necessary ingredient in its manufacture; provided, that the provisions of this or the preceding section shall not apply to mixtures or compounds recognized as ordinary articles of food if the same be distinctly labeled as mixtures or compounds, and from which no necessary ingredient in their preparation is eliminated.

**Imitation.** The sale of liquid chicory and coffee as "liquid coffee" is within the statute: State v. Dreher, 55 Ohio St., 115.

**Pharmacopœia.** The reference is to the edition in use when statute enacted; a higher standard required by a later edition will not render a sale unlawful: State v. Emery, 55 Ohio St., 364.

**Scope of statute.** Whisky, being recognized as a drug in the pharmacopœia and its strength and purity being there given, is a drug within the meaning of the statute. The law is not limited in its application to the sale of drugs by druggists and pharmacists, nor to sales for medicinal or pharmaceutical use, but extends to all persons without regard to their vocations, and makes no distinctions on account of the use intended to be made of the article: State v. Hutchinson, 56 Ohio St. 82.

"A sale of beer, as food, containing salicylic acid, without a label on the package notifying the purchaser that it contains such an ingredient,



is, when found to be poisonous or deleterious to health by its continuous or indiscriminate use as a food," an offense against the law: *State v. Hutchinson*, 55 Ohio St. 573.

**Pleading.** The proviso in the preceding paragraph applies to it and the next preceding one, and is not limited to any particular offense defined in them. Hence, a negative averment of the facts within the proviso need not be made in charging an offense; the facts may be proven under a plea of not guilty: *State v. Hutchinson*, 55 Ohio St. 573.

### 23. Canned goods, labels on.

[Section 4601*a*, Statutes of 1898.] Any person who shall, by himself, his servant or agent or as the servant or agent of any other person, pack, can or preserve fruits, vegetables or other articles of food, or sell, exchange, deliver or have in his possession with the intent to sell or exchange, or expose or offer for sale or exchange such canned articles, with the exception of goods brought from foreign countries, unless such articles be distinctly labeled with the grade or quality of the same, together with the name and address of the person, firm or corporation packing, canning or preserving the same, or the dealer who sells the same, shall be fined not less than twenty-five dollars nor more than one hundred dollars, or be imprisoned in the county jail not less than thirty days nor more than four months.

**Expose for sale.** See note to paragraph 12.

### 24. Label on baking powder.

[Section 4601*b*, Statutes of 1898.] Any person who shall, by himself, his servant or agent or by the servant or agent of any other person, make or manufacture baking powder or any mixture or compound intended for use as a baking powder, or sell, exchange or deliver, or have in his possession with the intent to sell or exchange, or expose or offer for sale or exchange such baking powder, or any mixture or compound intended for use as a baking powder, which contains alum in any form or shape, unless the pres-

ence of the same be distinctly shown by a label on the outside and face of which is printed with black ink in legible type, not smaller than brevier heavy gothic caps, the name and residence of the manufacturer and the words:

**"THIS BAKING POWDER CONTAINS ALUM,"**

shall be punished as provided in the preceding section.

**Validity.** A statute which provides that no person shall sell any lard or any article intended for use as lard which contains any ingredient but the pure fat of healthy swine, under any label bearing the words "refined," "pure," "family," unless every package in which the article is sold is marked "compound lard," has been sustained as valid by the supreme court of Iowa: *State v. Snow*, 47 N. W. Rep., 777.

In Minnesota a statute which makes it a misdemeanor to manufacture for sale within that state, or to sell or offer to do so, baking powder containing alum, unless each package thereof is labeled, "This baking powder contains alum," has been sustained: *Stoltz v. Thompson*, 46 N. W. Rep. 410.

**Expose for sale.** See note to paragraph 12.

## 25. Label on poisonous medicine.

[Section 4601c, Statutes of 1898.] Any person who shall, by himself, his servant or agent or as the servant or agent of any other person, sell, exchange, deliver, or have in his possession with intent to sell or exchange, or expose or offer for sale or exchange any medicine known as patent or proprietary, or of which the formula is kept secret by the manufacturer, which contains morphine, strychnine, cocaine or poisonous or narcotic alkaloid or drug, in any quantities which the state board of health shall deem harmful to the life or health of the public, unless the presence of the same be distinctly shown by a label upon the bottle or package and upon the outer wrapper thereof, shall be punished as provided in section 4601a. [Paragraph 23.]

## 26. Sale of imitation honey.

[Section 4607f, Statutes of 1898.] Any person who shall sell or offer for sale honey or any imitation of honey which

is adulterated with glucose or any other substance, without marking the package or parcel containing the same with the words "adulterated honey" in letters of not less than one-half inch length and proportionate breadth, and placing said words on the upper portion of the package or parcel containing such honey or imitation thereof, shall be punished by fine not exceeding one hundred dollars nor less than ten dollars, or by imprisonment in the county jail not more than six months nor less than ten days.

**27. Sale of diseased apiary, honey therefrom or appliances used therein.**

[Section 4605*a*, Statutes of 1898.] Any owner of a diseased apiary, of honey made or taken from such an apiary or appliances taken from such an apiary who shall sell, barter or give away any such apiary, honey, appliances or bees from such apiary, expose other bees to the danger of contracting such disease or refuse to allow the inspector of apiaries to inspect such apiary, honey or appliances, shall be fined not less than fifty dollars nor more than one hundred dollars, or be imprisoned in the county jail not less than one month nor more than two months.

**28. Sale, etc., of diseased meat; killing diseased animal, etc.**

[Section 4607*g*, Statutes of 1898.] Any person who shall sell or expose for sale, or give away for use as food, or can or pack for the purpose of transportation to and sale in any market or place any unwholesome, stale, emaciated, blown, tainted, putrid or measly meat, or the flesh of any diseased animal or of any animal not slaughtered for the purpose of food, knowing or having good reason to believe that such meat is as above described, or that such flesh is the flesh of a diseased animal or of an animal not slaughtered for such purpose, and any person or corporation owning or operating any slaughter-house or packing establish-

ment in this state who shall receive for the purpose of killing, or kill, any diseased animal, or render the carcass of any animal that shall die by disease or in consequence of exposure, or that shall not have been slaughtered for food, knowing or having good reason to believe that such animal was diseased, or had died from disease or in consequence of exposure, or had not been slaughtered for food, such person shall be punished by imprisonment in the county jail not exceeding six months nor less than ten days, or by fine of not more than one hundred dollars nor less than ten dollars, or both, and such corporation shall be fined not more than five hundred dollars nor less than ten dollars.

### 29. Standard for vinegar; sale of impure.

[Section 4607*i*, Statutes of 1898.] Any person who manufactures for sale or offers or exposes for sale as cider vinegar any vinegar which is not the sole product of pure apple juice, known as apple cider, or vinegar not made exclusively of said cider, or vinegar into which foreign substances, drugs or acids have been introduced, or which contains any preparation of lead, copper, sulphuric acid, artificial coloring matter or other ingredient injurious to health, or who, by himself, his servant or agent, or as the servant or agent of any other person, shall sell, exchange, deliver or have in his custody or possession with intent so to do any adulterated vinegar, or who shall label, brand or sell as cider or apple vinegar any vinegar not the legitimate product of pure apple juice, or not made exclusively from apple cider, or any vinegar which shall not have an acidity equivalent to the presence of not less than four per centum by weight of absolute acetic acid, and in addition, in the case of cider vinegar, not less than two per centum by weight of cider vinegar solids upon full evaporation over boiling water at two hundred and twelve degrees fahrenheit, and any manufacturer of vinegar in this state, and any person who reduces or re-barrels vinegar therein or who

handles vinegar in quantities of one barrel or more who shall fail to stencil or otherwise mark in black figures, at least one inch in length, on the head of each barrel or package of vinegar manufactured, reduced, re-barreled, bought or sold by him, the standard strength of the vinegar contained in such barrel or package, which shall be denoted by the per centum of acetic acid therein, or who shall falsely mark such barrel or package shall be punished by fine not exceeding one hundred dollars nor less than ten dollars.

**Coloring matter.** It is competent for the legislature to make it a misdemeanor to add artificial coloring matter to vinegar, regardless of whether the matter added is injurious to the health of the consumer or not: *People v. Girard*, 73 Hun (N. Y.), 457.

Where, in the manufacture of vinegar, low wine, formed from fermented grain, is, previously to its acetification, passed through roasted malt, not for the purpose of adding any substantial ingredient to the vinegar, but for the purpose of giving it color as well as aroma and flavor, and without such treatment the vinegar would be colorless, the vinegar so produced contains artificial coloring matter: *Weller v. State*, 53 Ohio St. 77.

**Stamp the strength.** See note to paragraph 24.

**Validity.** It is provided by a Michigan law (Public Acts of 1897, No. 71), "that no person shall manufacture for sale, offer or expose for sale, sell or deliver, or have in his possession with intent to sell or deliver, any vinegar not in compliance with the provisions of this act. No vinegar shall be sold as apple, orchard or cider vinegar which is not the legitimate product of pure apple juice, known as apple cider or vinegar not made exclusively of said apple cider or vinegar into which foreign substance, drugs or acids have been introduced, as may appear upon proper tests, and upon said tests shall contain not less than one and three-fourths per cent., by weight, of cider vinegar solids upon full evaporation at the temperature of boiling water." That "all vinegar made by fermentation and oxidation without the intervention of distillation, shall be branded 'fermented vinegar,' with the name of the fruit or substance from which the same is made. And all vinegar made wholly or in part from distilled liquor shall be branded 'distilled vinegar,' and all of such distilled vinegar shall be free from coloring matter added during or after distillation, and from color other than imparted to it by distillation. And all fermented vinegar not distilled shall contain not less than one and three-fourths per cent., by weight, upon full evaporation (at the temperature of boiling water) of solids, contained in the fruit

or grain from which said vinegar is fermented, and said vinegar shall contain not less than two and a half-tenths of one per cent. ash or mineral matter, the same being the product of the material from which said vinegar is manufactured. And all vinegar shall be made wholly from the fruit or grain from which it purports to be or is represented to be made, and shall contain no foreign substance, and shall contain not less than four per cent., by weight, of absolute acetic acid."

Under that law it was held, 1. That cider vinegar must contain the required quantity of ash or mineral matter as well as the stated per cent. of cider vinegar solids. 2. That the act could not be declared void as beyond the police power of the state because it imposed an unreasonable and arbitrary test, that being a question for the legislature. 3. That it was not for the jury or the court to determine from expert chemical testimony whether the act was unreasonable. 4. That a person convicted of violating the act was not deprived of property without due process of law because he could not obtain a sample of the vinegar in question for analysis, he not being so prevented by any person connected with the prosecution, and the law not requiring that the accused be furnished with a sample. 5. That the law was violated by the sale of vinegar below the standard, though the seller was not aware of the fact that the vinegar sold was of that character: *People v. Worden Grocer Co.*, 77 N. W. Rep. 315.

### 30. Sale of impure ice; notice of place where ice was cut.

[Section 4607k, Statutes of 1898.] No person or corporation shall sell or offer for sale or cause the same to be done within this state, for domestic, culinary or drinking purposes, any ice which contains mud, decayed vegetation, animal or foreign matter or malarial substance. Every person or corporation offering ice for sale shall have posted on his or its wagons, in a conspicuous manner, the name of the place from which the ice so offered for sale was cut, harvested or manufactured, and all persons or corporations dealing in or handling impure ice, to be used for cooling purposes only, shall have their wagon so labeled. Any person who or corporation which violates any of the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not less than fifty dollars or more than one hundred dollars.

**31. Coloring grain.**

[Section 4606, Statutes of 1898.] Any person who shall fumigate any barley, wheat or other grain by the use of sulphur or other substance, or shall in any way or by the use of any chemical, material or process affect the color or healthfulness of such grain, or who shall sell or offer for sale any such grain knowing that the same has been so fumigated or the color or the healthfulness thereof so affected shall be punished by imprisonment in the county jail not more than one month or by fine not exceeding fifty dollars.

**Adulteration of Flaxseed or Linseed Oil.**

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**32. Pure, standard of.**

[Section 1, chapter 234, laws of 1899.] No person, firm, association or corporation shall manufacture for sale, offer or expose for sale in this state, any flaxseed or linseed oil for other than food purposes, unless the same answers a chemical test for purity recognized in the United States pharmacopœia, or any flaxseed or linseed oil as "boiled linseed oil" unless the same shall have been put, in its manufacture, to a temperature of two hundred and twenty-five degrees Fahrenheit.

**33. Package containing oil to be stamped.**

[Section 2, chapter 234, laws of 1899.] No person, firm, association or corporation shall at any time, personally or by clerk or agent, sell, expose or offer for sale, dispose of or attempt to dispose of, any flaxseed or linseed oil unless

so done under the true name of such oil, and unless each tank car, tank, barrel, keg, can or other vessel containing such oil has, at such time, distinctly and durably painted, stamped, stenciled or marked thereon, in ordinary full-faced capital letters, not less than five line pica in size, the true name thereof in the words "pure linseed oil raw" or "pure linseed oil boiled," as the fact may be, and also the name and address of the manufacturer or dispenser thereof.

#### **34. Adulteration and false stamping.**

[Section 3, chapter 234, laws of 1899.] No person, firm, association or corporation shall, at any time, personally or by any clerk or agent, adulterate any "pure linseed oil raw" or "pure linseed oil boiled," by adding thereto any other oil or substance or thing whatever, for the purpose or with the intent to sell, expose or offer for sale, such mixture or compound as the pure article, nor shall any person, firm, association or corporation, personally or by any clerk or agent, paint, stamp, stencil or mark any tank car, tank, barrel, keg, can or other vessel so as to falsely represent that it contains either "pure linseed oil raw" or "pure linseed oil boiled," nor so as to falsely represent the manufacturer thereof, nor permit or suffer any such false painting, stamping, stenciling or marking.

#### **35. Penalty for violation of law.**

[Section 4, chapter 234, laws of 1899.] Any person, firm, association or corporation who shall violate any of the provisions of this act shall be punished by a fine of not less than fifty dollars, nor more than five hundred dollars, or by imprisonment in the county jail for not more than six months.

#### **36. Duty of dairy and food commissioner.**

[Section 5, chapter 234, laws of 1899.] It is hereby made the duty of the dairy and food commissioner to see that



the provisions of this act are enforced, and personally or by his assistants, to inspect any flaxseed or linseed oil, made or offered for sale in this state, and any tanks, barrels, kegs, cans or other vessels containing the same in this state which he may suspect or have reason to believe, fails to comply with the provisions of this act, and to prosecute or cause to be prosecuted, any person, firm, association or corporation, whom he may suspect or have reason to believe, has violated any of the provisions of this act, which prosecution shall be conducted by the district attorney in the same manner as is now provided in case of the violation of the laws relating to the sale of impure, adulterated or counterfeit articles of food, or drink, or drug.

## REPORT OF THE COMMISSIONER.

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The dairy industry in Wisconsin is steadily increasing in extent and constantly improving in the character of its products. The state not only contains fifty per cent. more cows than ten years ago, but they average better in breeding and in economic milk-producing quality. We have more cow barns and better ones. The problems of feeding are being carefully and profitably studied. Modern methods and new dairy appliances and machinery are cutting down the percentage of waste in the manufacture of butter and cheese. The old-fashioned "store butter" that filled the groceries of the state with unhallowed odors ten years ago has largely given place to first class creamery and dairy butter that has uniformity, good texture and flavor which will excite appetite rather than destroy it. The improved article is produced at less cost and sold for a higher price than the inferior product. Unprofitable cows are being weeded out, and the cow that can produce 300 pounds of butter per year is becoming a more familiar figure. The 1,000 creameries of the state are turning out annually 60,000,000 pounds of butter that averages good. Private dairies produce 20,000,000 pounds more, of which 30 per cent. or 6,000,000 pounds will grade with the average creamery product, leaving 14,000,000 pounds or something over 15 per cent. of inferior quality.

The total value of the butter product of Wisconsin for the year 1900, is at least \$16,000,000 in round numbers.

The 1,800 cheese factories of the state manufactured during the present year 60,000,000 pounds of cheese, of which 44,000,000 pounds were cheddar cheese and the remaining 16,000,000 pounds were Swiss, brick and Limberger. Wisconsin ranks

second in the list of cheese-producing states, New York being first, and no other state approximating the product of either. The output of our factories for the last twelve months was sold at an average of ten cents per pound, or \$6,000,000.

At least 800,000 people in the towns and cities of the state buy milk and cream. It is a conservative estimate, based upon the per capita consumption of Boston and New York, to assume that each person will consume annually 120 quarts of milk. The average cost to the city consumer is five cents per quart, \$6.00 for each individual per year, or \$4,800,000 for all the cities and towns of the state. Farm consumption averages much more, at least 150 quarts per annum for each person. Milk at the farm is worth at least 2 cents per quart, which would make the annual value of farm consumption \$3,600,000.

The value of the annual increase of the 1,000,000 cows of the state can fairly be estimated at \$2,500,000.

Grouping the various dairy products together with their values, we have the following statement for the year 1900:

Butter, 80,000,000 pounds, worth .....	\$16,000,000
Cheese, 60,000,000 pounds, worth .....	6,000,000
Milk and cream consumed by our 2,066,000 people, worth	8,400,000
Increase of stock value .....	2,500,000
	<hr/>
	\$32,900,000

In the statement no account is made of the skimmed milk of creameries and private dairies which is a large item, or of the manurial product of the cow, which is never estimated below \$10.00 per head. Cows are kept upon 160,000 farms in this state. The capitalization of the dairy business is enormous, but is so mixed with other farm industries that it cannot be definitely stated. The 2,800 creameries and factories of the state are worth \$7,000,000. Wisconsin butter goes to all the great markets of the country. It has found its way to the West Indies and into the English market.

Our exports of dairy products of the United States are not increasing. The following table gives the amount and value for five years ending 1899.

## REPORT OF THE WISCONSIN

1895.		Quantities.	Values.
Butter .....		5,598,812	\$915,533
Cheese .....		60,448,421	5,497,539
Milk .....			219,785
1896.		Quantities.	Values.
Butter .....		19,373,913	\$2,937,203
Cheese .....		36,777,291	3,091,914
Milk .....			270,453
1897.		Quantities.	Values.
Butter .....		31,345,229	\$4,493,364
Cheese .....		50,944,617	4,636,063
Milk .....			524,968
1898.		Quantities	Values.
Butter .....		25,690,025	\$3,864,765
Cheese .....		53,167,280	4,559,324
Milk .....			671,670
1899.		Quantities	Values.
Butter .....		20,247,997	\$3,263,951
Cheese .....		38,198,753	3,316,049
Milk .....			1,049,211

The shrinkage in exports of butter is due to the strong domestic demand and to the character of a considerable portion of the product exported. The consumption of butter per capita in the United States is much greater than in any other nation, and the widespread prosperity of recent years has greatly increased the use of this as well as all other staple food products.

Modern dairying, with its improved and more productive methods, has been favored with a rapidly growing domestic market. Secretary Wilson of the United States Department of Agriculture, who has been making a study of the foreign butter market and has made a number of shipments abroad, states that there is much and well-grounded prejudice against our American butter. American oleomargarine is not only sold in foreign markets as butter, but "process butter," melted and reworked, has been exported and sold as the best creamery butter.

It is further claimed that Danish butter has a firmer body and requires a higher temperature to melt it than the American product. The different foreign markets have each their peculiarity, some desiring no salt in butter, others no color, and others different gradations of salt and color. Size and form of packages also affect selling value.

The suggestion of the secretary that there should be governmental inspection of dairy products intended for export is a wise one and should be adopted and urged upon the attention of congress by all friends of the dairy interests and all interested in the extension of our American trade. Our meat inspection system has received the approval of all interests in this country. It has improved the character of our meat exports. It has strengthened and broadened the foreign demand. A similar system applied to dairy products would produce similar results.

Denmark, with an area one-fourth as great as Wisconsin, exports annually \$33,000,000 worth of butter. The government fosters and encourages this industry by inspection, instruction, and by all the aids which laws can give. The domestic demand in this country may not always keep pace with dairy production and it is the part of wisdom for this government through its agents to constantly study foreign markets and educate American producers in the character of the demands of these markets.

We congratulate ourselves, and properly, too, upon our rapid advance in dairy knowledge and methods. We have yet some lessons to learn. In Denmark ninety-five per cent. of the butter made is from milk or cream that has been pasteurized. Diseased dairy stock is relentlessly destroyed. The average Wisconsin cow is not yet good enough. Her average product, measured in butter is approximately 160 pounds per year. It should be at least 250 pounds. Every owner of a cow should test her. If she fails to reach a profitable standard, she should be slaughtered or sold to a beef producer.

The dairyman who guesses at the product of his individual cow is doing business in the dark. Testing is easy and cheap. There is no excuse for ignorance in this matter. Capital

punishment applied to twenty-five per cent. of the dairy cows of Wisconsin would be a Godsend to the dairy interest. Many dairymen are working hard and faithfully to support cows which would support them. Many a man who would laugh at the Mexican idea of ploughing with a forked stick is doing a less intelligent thing by feeding cows that eat more dollars' worth than they produce. The beef cow has no place in the dairy. The general purpose cow does not belong there. The wedge shaped cow with no surplus bone or flesh, with good lung power, strong and capacious digestive machinery, and great capacity for the elaboration of good milk, can be bought or bred.

#### DAIRY EDUCATION.

The agencies now at work to extend dairy knowledge in the United States are many and strong. The dairy schools are increasing in number and attendance. Forty-three states and territories give dairy instruction in their agricultural colleges or universities. Fourteen states have regular dairy courses or dairy schools. Wisconsin has one of the best schools of this class in the country. For three years it has been crowded to its full capacity. It is sending annually a well-trained body of young men into the farm neighborhoods and into the factories and creameries of the state. They go out equipped with the best modern knowledge of their business. Invention has changed and is constantly changing the manufacture of dairy products, as of all other manufactures. The dairy school keeps abreast of the times. It teaches the latest and best knowledge about soils, tillage, crops, breeding, rations, barns, care of milk, and all the details of making, shipping and selling butter and cheese. It teaches the boys to keep books, to be accurate in accounts, to be definite in their thinking, to be on the alert for new and valuable ideas; in other words, it gives them the equipment in their business which is demanded of men in the great mercantile and manufacturing enterprises of the country. Every student who goes out becomes an educator in the community into which he goes. He becomes a more productive

citizen and causes other citizens to become more productive. The state becomes richer not only in knowledge, but in material wealth, and is amply repaid for its moderate expenditure of money.

The present facilities of the Wisconsin dairy school are inadequate for the requirements of the increasing body of students. No expenditure of money on the part of the state can be more profitably made in behalf of our dairy interests than by giving to the school all of the buildings, appliances and instructive force needed to meet the demands made upon it.

#### CREAMERIES.

There are 1,000 creameries in Wisconsin. The number is not exceeded in any state in the Union except Iowa. A comparatively small number are proprietary, the owners purchasing milk upon some fixed basis, taking their own risks and profits. A great number are co-operative in part, the manager of the creamery owning it, making and selling the product, deducting a fixed charge for making with other expenses, and dividing the remainder among the patrons.

Complete co-operation means a creamery association, composed of patrons, which owns the creamery building, grounds and machinery, hires a butter maker to make butter for a fixed price per pound, or upon a salary, pays all expenses out of receipts, and divides profits in proportion to butter fat supplied as indicated by the Babcock test. There are grades of co-operation. An unqualified statement of the percentage of the creameries in the state run upon the co-operative plan would be misleading without a general agreement as to the meaning of the term.

It is undoubtedly true that ninety per cent. of our creameries are co-operative to a greater or less degree. The almost universal use of the separator and the Babcock test has given to the creamery patron an assurance that his milk will be paid for upon the basis of the butter fat which it contains, and that all of that butter fat will be extracted from the milk, except an insig-

nificant portion. Our creameries are not all perfect by any means. Some are models of cleanliness, good arrangements, equipment and good business management. Others are unclean and carelessly managed. There is no reason why any creamery should not be well drained and absolutely clean. The hunger of milk, cream and butter for bad odors is proverbial. It costs nothing to keep a creamery clean. It costs the producer heavily when his butter reaches the market lacking in flavor, or tinctured with flavors which do not belong there. The public taste grows more critical. It will pay for the delicate aroma which belongs to good butter. It will not pay for stock-yard odors in any butter. The creamery building may not be susceptible of much architectural beauty, but there is no reason why it should be, as in many cases, offensively ugly. In any event, it can be kept painted and not be a weather-beaten blight upon the landscape. Bits of well-kept lawn in the vicinity are as appropriate and pleasing as the cheerful spots of greenness that relieve the gloom of many railroad stations.

The creamery can be, in many cases it is, and in all it ought to be, an educational institution. It is the daily meeting place of many dairymen, where friendships are made, ideas exchanged, knowledge gained, the dairy business discussed along with all those general questions that interest our people, and it should be made wholesome and attractive in every way.

The creamery business is seriously injured in some localities by the establishment of more creameries than the milk supply will warrant. As a rule, the larger the creamery, the smaller the cost of manufacture. Where competition is close and keen, a form of dishonesty is engendered and encouraged, which consists in making unduly high readings of oil tests for the purpose of drawing patronage from competitors. No punishment is too severe for the creamery manager who does this. The law relating to fraudulent accounts of butter and cheese manufacturers should be amended and the false reading of the oil tests made an offense under heavy penalties. Violations of the law might be difficult to prove, but proof would not be impossible.



Such a statute would make dishonest statements dangerous and rare.

The assistant dairy and food commissioner is largely employed in visiting factories and creameries in response to calls for an official test of their milk supply. Since the last report of this department was issued, he has traveled 25,000 miles, visited 100 factories and creameries, made an examination, in some instances once, in others twice, of the milk and cream supply of thirteen cities, and made, with the assistance of the chemist, a test of 3,900 samples. In addition to this, as time and opportunity allowed, he has taken samples of oleomargarine and other food products.

There is a marked diminution in the amount of milk adulteration. Cities are adopting and enforcing more stringent milk ordinances. Local boards of health are exercising more vigilant supervision over the milk supply of their communities. These causes and the work of this department have combined to give the people a larger proportion of pure milk and cream.

#### CHEESE.

This state has nearly twice as many cheese factories as creameries. They average much less in cost and in patronage. All that can be said about cleanliness, attractiveness and business methods, as well as competition, of creameries, applies to factories. The cheese industry of the state is being greatly helped by the work of instruction done by the State Dairymen's Association, which has two expert instructors in the field during the cheese-making season. The industry has been greatly stimulated by the high prices of the last two years. The factories are rapidly coming into line in the matter of buying their milk upon the basis of the Babcock test. One great beneficial effect of this is to encourage the breeding of cows that give a maximum of butter fat in their milk and a minimum of water.

The cheese of Wisconsin is regaining its old reputation in the market that it had before the filled cheese blight fell upon it. Its best grade is not outclassed by either the cheese of New

York or Canada. When the cheese factories that are unclean and marked by slovenly management, that sell green cheese in idiotic eagerness for immediate returns, are wiped off the map of the state, Wisconsin cheese will be wanted in every domestic and foreign market.

The development of Swiss cheese, manufactured in the county of Green in particular and in adjoining counties has been remarkable. Green county sold last year \$1,200,000 worth of Swiss, Limberger and other special forms of cheese. The growing reputation of this product has resulted in an almost unlimited demand. The Swiss immigrants who brought from their native mountains to southern Wisconsin little capital, but honesty, industry and a knowledge of agriculture as they knew it at home, laid solidly the foundations of one of the most profitably industries of the state.

There is no filled cheese manufactured in any state in the Union except Illinois. There are seven factories in that state. There are sixty-two retailers in the United States, Illinois having four, Indiana three, Louisiana twenty-nine, Maryland nineteen, Missouri two, New Jersey two, Virginia two, and West Virginia one. In the first six months of 1899 the government tax was paid upon 1,688,650 pounds. In 1898 the total product was 1,402,681 pounds. The national law crippled, but did not destroy the business. The presence of this counterfeit in the market is an injury to honest trade. It is unfortunate that Illinois permits its manufacture. It is probable that the growing sentiment of that state in behalf of pure foods will finally prohibit it.

#### OLEOMARGARINE.

The manufacturers of oleomargarine and the dealers continue to evade and defy the law of this state relative to counterfeit butter to the extent of their power. Their policy is the same in every state in the Union. Their contempt for public judgment as expressed in law is supreme. They claim to know more about the public interest than state legislatures and more about the constitutionality of laws than courts.

Prosecutions under the oleomargarine law in this state are usually successful, but not always. In one of the larger cities of this state a man was arrested for selling oleomargarine contrary to law. The chain of testimony was absolutely perfect. No witnesses were called for the defense. The attorney for the defendant, who happened to be the mayor of the city in question, stated to the jury that the defendant was a good man; that the law was not intended for enforcement any more than the Sunday closing law, and that for this reason acquittal should be prompt. It was. The jury rendered a verdict in five minutes of "Not guilty." Several cases dragged through the courts of Racine for a year, taken from one court to another upon motion of the defendants' counsel. Finally they landed in the circuit court. At the trial Circuit Judge Fish was not present. At his request his place had been filled by Judge Goodland of Outagamie county. He dismissed the case without trial upon the ground of defective complaints. The complaints were in the form used without objection in the state for six years, and commonly used in Ohio, New York and Massachusetts.

It is not the province of this department to criticise courts. It is its duty to state facts about the administration of the laws which it is charged to execute. The complaints were drawn by John M. Olin, the special counsel of this commission, who won the bitterly contested initial cases under the law of 1895. The complaints in question charged that a sale had been made upon a certain day, of oleomargarine colored in semblance of butter. It did not name the person to whom the sale was made. The judge held that this was required although there was undisputed proof of the sale as described in the complaint. The effect of continued arrests was to stop for a time at least the illegal traffic in Racine. The offending dealers were provided with an attorney by a Chicago oleomargarine firm, and agents of the firm in question offered to guarantee local dealers from any loss resulting from violations of the law.

There is no condemnation too severe for outside firms who send their agents into this state and deliberately conspire to in-

volve our own citizens in illegal business. The temptation to retail oleomargarine is great because the middleman receives much greater profits than in handling butter. The profits of the retailer range between two and eight cents per pound. Naturally he thinks any law which interferes with his business is unconstitutional.

In this state the retail dealer seldom sells oleomargarine for butter. When he violates the law it is usually in selling the colored article in violation of the anti-color clause.

The greatest fraud in oleomargarine sales in this state is the supplying of that article to the guests of hotels, boarding houses, restaurants and lunch counters, in response to calls for butter. In this way the final purchaser is defrauded and given that which he does not call for and does not want.

Oleomargarine sold under its own name and color has a place among legitimate food products. Its friends are not satisfied with this. They claim the right to make it a perfect counterfeit of butter in appearance, well knowing that when so made it will be unconsciously purchased by people who ask for butter. They claim further that the oleomargarine industry will be destroyed if butter color cannot be used. This is a confession that the entire business is based on fraud.

Oleomargarine can be sold uncolored. The uncolored article is now being sold in Racine, Oshkosh and Milwaukee in considerable quantities. It has precisely the same food value as the counterfeit product, and it sells from three to seven cents less. The poor consumers, whose woes are pictured with such graphic power by the able gentlemen representing the oleomargarine trust, get their uncolored substitute at an oleomargarine price, and pay much nearer, and many times quite, a butter price for the colored imitation.

Thirty-two states prohibit the manufacture and sale of oleomargarine colored like butter. If these states could all give stringent enforcement to this prohibition, oleomargarine would be sold in every one of them at a price bearing a proper relation to its cost and at a reduction from present prices of from 16 to 40 per cent.

Seven hundred thousand pounds of oleomargarine were consumed in this state last year. The greater portion was consumed in the lumber camps and mining regions. There is comparatively little sold in central and southern Wisconsin. Orders were taken by agents and the goods shipped direct to the consumer. This is a violation of the spirit but not the letter of present law.

The law should be amended and, like the New York statute, provide that an agent shall be deemed a seller within the meaning of the oleomargarine act.

#### NATIONAL LEGISLATION.

The need of more stringent national legislation relating to butter counterfeits has been very apparent. At the last session of congress Mr. Grout of Vermont introduced a bill reducing the tax on uncolored oleomargarine from two cents to one-fourth of one cent per pound, and increasing it to ten cents per pound upon the colored article. The bill also provided that when oleomargarine came into a state in original packages it should immediately become subject to the laws of that state. This measure received the endorsement of the entire dairy, and nearly all the farming interests of the nation.

Its purpose was to use the undisputed taxing power of congress to stop a fraud of great magnitude.

The production of oleomargarine last year was 107,000,000 pounds, as shown by the report of the internal revenue department. Over sixty million pounds of this enormous amount were sold in violation of the laws of the states into which they entered. Illinois prohibits the sale of imitation butter, and bought 18,600,000 pounds; Ohio has the same law and took nearly 9,000,000 pounds; Pennsylvania has a prohibitive law, yet 11,000,000 pounds slipped through its meshes.

In the course of the discussion a resolution was introduced into the house of representatives, calling upon the secretary of the treasury to report a statement of the amount of oleomargarine manufactured in a year and the ingredients of such amount,

The resolution passed the house after an adverse report from the powerful committee on ways and means, and after a bitter fight upon the part of the oleomargarine people. The secretary promptly reported as follows:

Treasury Department,  
Office of the Commissioner of Internal Revenue,  
Washington, D. C., May 14, 1900.

Sir: In compliance with your instructions in responding to House resolution of May 8, 1900, I have the honor to submit herewith data therein called for.

The original forms in which this information is submitted to this office are not only very large in bulk, but voluminous in number, and cannot very well be transmitted; besides they are a part of the records of the Internal Revenue Bureau, and should not, therefore, leave the custody of the Treasury Department.

The data submitted disclose the kind of material used, the amount of each ingredient, and the per cent that each bears to the total amount of oleomargarine produced in the country for the periods named, and it is believed furnishes all the information intended to be called for in the resolution.

Very respectfully,

G. W. WILSON, Commissioner.

The Secretary of the Treasury.

Quantities and kinds of ingredients used in the production of oleomargarine in the United States for the fiscal year ending June 30, 1899; also the percentage each ingredient bears to the whole quantity.

Material.	Pounds.	Percent- age each ingredient bears to the whole.
Neutral lard .....	31,297,251	34.27
Oleo oil .....	24,491,769	26.82
Cotton-seed oil .....	4,357,514	4.77
Sesame .....	486,310	.53
Coloring matter .....	148,970	.16
Sugar .....	110,164	.12
Glycerin .....	8,963	.01
Stearin .....	5,890	.007
Glucose .....	2,550	.003
Milk .....	14,200,576	15.55
Salt .....	6,773,670	7.42
Butter oil .....	4,342,904	4.76
Butter .....	1,563,319	1.72
Cream .....	3,527,410	3.86
Total .....	91,322,260	100

This statement was a final and conclusive answer to the claim that the cottonseed oil interests in the south would be seriously injured by any legislation designed to limit the manufacture of counterfeit butter.

Cottonseed oil was shown to form only 4.77% of oleomargarine, and that amount has an annual value of less than \$500,000.

In response to a request from the National Dairy Union, the dairy and food commissioner of this state visited Washington three times, and appeared before the committee on agriculture to testify as to the administration of the oleomargarine law in this state, and generally as to the nature of the oleomargarine business, and the need of further national legislation.

The argument of the oleomargarine attorneys that the coloring of butter and of oleomargarine stood upon the same ethical ground, was met by the reply that butter was not colored to represent another and more valuable article, while oleomargarine is colored exactly for that purpose.

The charge that the Grout bill was class legislation was refuted by reference to the decisions of state supreme courts and the supreme court of the United States which, passing upon the prohibitory color laws of the states, declared that they were constitutional enactments because they were a proper exercise of police powers to prevent fraud upon consumers.

The protection to honest producers of honest products was unquestioned, but incidental.

If the Grout bill shall become a law, the enforcement of the oleomargarine law of this state will be easy and sure.

The following statement of the secretary of the treasury shows the location of manufacturers, wholesalers and retailers, as well as the distribution of the oleomargarine product.

#### OLEOMARGARINE PRODUCT.

Letter from the secretary of the treasury, transmitting a reply to the resolution of the house of representatives relating to the shipment, distribution, etc., of the oleomargarine product.

January 27, 1900.—Referred to the committee on Ways and Means and ordered to be printed.

Treasury Department, Office of the Secretary,  
Washington, D. C., January 26, 1900.

Sir: I have the honor to acknowledge the receipt of resolution of House of Representatives requesting information as to the particular

states in which oleomargarine is shipped and distributed by the producers, the amount in pounds shipped or distributed in each state, and also the number of licenses issued to persons in the several states for the manufacture and sale, either by wholesale or retail, of oleomargarine, stating the number of such licenses issued to persons in each state.

In response to the resolution, I have the honor to transmit herewith the information requested, prepared by the Commissioner of Internal Revenue, who reports that—

The number of licenses issued, of all kinds, and the state in which issued, will be found on page 199 of annual report of commissioner of internal revenue for fiscal year ended June 30, 1899, and a copy of the page is inclosed.

I also transmit copy of a letter of the commissioner, showing the vast amount of labor performed by his bureau in preparing the information.

Respectfully,

L. J. GAGE, Secretary.

The speaker of the House of Representatives.

Treasury Department,  
Office Commissioner of Internal Revenue,  
Washington, D. C., January 25, 1900.

SIR: I have the honor to submit herewith statement showing the amount of oleomargarine shipped into the several states during the fiscal year ended June 30, 1899, as called for in the House resolution of January 10, 1900, on that subject, transmitted to this office.

In this connection I desire to state that the preparation of the data called for involved a vast amount of work, and that in order to expedite the same and avoid delay in the transaction of the regular business of the office I called for volunteers who would serve an extra hour each until the completion of the work, and had an average of 100 volunteers daily for that purpose, the extra work amounting to about 500 hours, which was performed by the volunteers willingly and cheerfully, thus enabling this office to make a prompt response to the resolution, with the information called for, without delaying the regular business of the bureau in any manner.

Respectfully,

G. W. WILSON, COMMISSIONER.

The Secretary of the Treasury.



Statement, by States and Territories, showing number of establishments for which special tax was paid to carry on, during the fiscal year ended June 30, 1899, the business of manufacturing and dealing in oleomargarine.

States and Territories.	Manu- factories	Wholesale establish- ments.	Retail establish- ments.	Total.
Alabama .....		2	19	21
Alaska .....			6	6
Arizona .....		1	4	5
Arkansas .....		1	134	35
California .....				
Colorado .....		6	89	95
Connecticut .....			5	5
Delaware .....		1	47	48
District of Columbia .....	1	2	58	61
Florida .....		5	77	82
Georgia .....		7	54	61
Idaho .....		1	2	3
Illinois .....	4	10	2,006	2,020
Indiana .....	3	5	298	306
Indian Territory .....			21	21
Iowa .....			3	3
Kansas .....	2	1	183	186
Kentucky .....		1	216	217
Louisiana .....		46	134	140
Maine .....		1	16	17
Maryland .....		57	51	58
Massachusetts .....		11	97	108
Michigan .....		4	165	169
Minnesota .....		6	24	30
Mississippi .....		5	12	17
Missouri .....	1	1	229	231
Montana .....			1	1
Nebraska .....		1	72	73
Nevada .....				
New Hampshire .....		6	13	19
New Jersey .....	1	7	288	296
New Mexico .....			12	12
New York .....			14	14
North Carolina .....			9	9
North Dakota .....			18	18
Ohio .....	2	8	995	1,005
Oklahoma .....			10	10
Oregon .....			3	3
Pennsylvania .....		21	696	717
Rhode Island .....	3	4	326	333
South Carolina .....		2	22	24
South Dakota .....			4	4
Tennessee .....		3	80	83
Texas .....		15	147	162
Utah .....				
Vermont .....		1	1	1
Virginia .....		1	120	121
Washington .....			5	5
West Virginia .....		5	167	172
Wisconsin .....		5	18	23
Wyoming .....			5	5
Total for 12 months ended June 30, 1899 .....	17	163	6,875	7,055
Total for 12 months ended June 30, 1898 .....	15	105	4,289	4,409

<sup>1</sup>Includes 1 establishment which was transferred to Kansas.

<sup>2</sup>Includes 1 establishment which was transferred to Michigan.

<sup>3</sup>Includes 1 establishment which was transferred to Illinois.

<sup>4</sup>Includes 1 establishment which was transferred to Pennsylvania.

<sup>5</sup>Includes 1 establishment which was transferred to Virginia.

<sup>6</sup>Includes 1 establishment which was transferred to Georgia.

Increase in manufactories, 2; increase in wholesale dealers, 58; increase in retail dealers, 2,586.

## REPORT OF THE WISCONSIN

Statement as to the particular States in which oleomargarine is shipped and distributed by the producers and the quantity shipped to each State.

	Pounds.		Pounds.
Alabama .....	226,063	Nebraska .....	1,024,985
Alaska .....	18,080	New Hampshire .....	455,583
Arkansas .....	380,389	New Jersey .....	5,875,975
Arizona .....	78,767	New Mexico .....	115,850
California .....	74,923	New York .....	222,788
Colorado .....	1,123,531	Nevada .....	625
Connecticut .....	134,255	North Carolina .....	110,244
Delaware .....	40,476	North Dakota .....	7,710
District of Columbia .....	816,848	Ohio .....	8,830,969
Florida .....	590,225	Oklahoma .....	117,398
Georgia .....	495,004	Oregon .....	41,250
Illinois .....	18,638,921	Pennsylvania .....	11,433,341
Idaho .....	58,224	Rhode Island .....	3,594,984
Indiana .....	3,923,228	South Carolina .....	258,159
Indian Territory .....	152,278	South Dakota .....	55,432
Iowa .....	79,922	Tennessee .....	714,640
Kansas .....	1,658,544	Texas .....	1,518,264
Kentucky .....	1,490,577	Utah .....	8,450
Louisiana .....	1,043,502	Vermont .....	2,990
Maine .....	102,274	Virginia .....	1,159,400
Maryland .....	1,791,950	Washington .....	63,345
Massachusetts .....	2,083,889	West Virginia .....	1,206,865
Michigan .....	2,092,521	Wisconsin .....	714,742
Minnesota .....	1,343,865	Wyoming .....	39,547
Missouri .....	3,133,313		
Mississippi .....	104,622	Total .....	79,695,744
Montana .....	446,022		

## ADULTERATION OF FOODS, DRUGS AND LIQUORS.

The general pure food law of 1897 was the first effort upon the part of the state to stop the adulteration of drugs, liquors and food products, other than those of the dairy.

Nothing of moment has been done by this department in the line of investigating and stopping drug adulteration. The commission is limited to one assistant, one chemist, and one inspector. The numerous and rather imperative demands of factories and creameries and the plain necessity of frequent inspection of city milk supplies, in which the entire population is vitally interested, makes it impossible for this commission with the force at its disposal, to do all of the work which should be done.

No attention has been given to liquors for this reason, and for the additional reason that reports of liquor adulteration are greatly exaggerated, and, furthermore, they can hardly be numbered among the necessities of life.

So far as possible the groceries of the larger cities of the state have been inspected to ascertain whether or not the pure food law is being complied with. There is steady improvement in

this direction. The great majority of the retail merchants want to sell honest goods. A great number of inquiries come to this office from dealers and manufacturers relating to the law and the interpretation of it given by this department.

But few dealers have been prosecuted. A multitude have been warned or instructed and, as a rule, have conformed to the law. An additional inspector, to visit the smaller towns, would be of great value.

The national law has stopped the adulteration of flour. The adulteration of buckwheat flour, which has been common, is diminishing, as shown by the examination of numerous samples by our chemist.

The sale of spirit vinegar for cider vinegar has very generally been stopped.

The demand of this department that lemon extracts shall contain at least 5% of lemon oil is being generally complied with.

There is more fraud in the sale of vanilla extracts, the value of which is not easy to measure and a standard difficult to establish.

The coloring of artificial jellies has been prohibited and none is sold in the leading markets.

The alum baking powder people brand their goods as required by law.

Horse meat is made into sausage in Milwaukee, but there is no law to prevent it, and its sale is not an offense, if not sold under a false or misleading name. The Milwaukee product, however, is made for export.

Absolute standards for all food products should be fixed by specific law. The time may not have arrived when these standards can be wisely determined, but we are not far from it.

#### PRESERVATIVES.

The addition of preservatives, or any other foreign substance, to milk is a violation of law. There is no reason why any but harmless and natural methods should be used for the preservation of milk. It is the food of infants and invalids, and any

adulteration, whether poisonous like antiseptics or not, may diminish its digestibility.

The law has been effective. Hundreds of tests have been made for the purpose of detecting it in suspected milk supplies, and its presence discovered in only a few cases, which have been promptly and successfully prosecuted.

The use of chemical preservatives in fruit, meat and vegetables has a dangerous tendency. Scientific judgment is not united in condemnation of all preservatives under all circumstances. Whether or not small quantities of the least injurious preservatives are in themselves deleterious, their effect is to diminish the digestibility of the food in which they are used.

This subject, which is of great and increasing importance, and to a considerable degree technical, will be treated more fully in the report herewith submitted by Mr. Mitchell, chemist of the department.

#### ADDITIONAL LEGISLATION.

The following suggestions are respectfully submitted:

1. The report of the department should be annual instead of biennial. It loses its value when too long delayed. The department deals with important trade interests, with a great number of manufacturers and thousands of grocers, factorymen and farmers. They should have at least an annual statement of its work in prosecuting laws and in interpreting them.

The law now provides for the biennial publication of 20,000 copies of the report, 5,000 to be found in cloth and 15,000 in paper. Paper bound reports are almost worthless. They usually land in some place where they cannot be found, or in a junk shop. The number of dairy and food commissioner's reports should be limited to an annual issue of 10,000 bound in cloth.

2. The factories and creameries of the state should be required by law to report to this commission their names, post office addresses, valuation, number of patrons, number of cows contribu-

tory, pounds of milk received, pounds of butter or cheese made, cost of manufacture and receipts for product.

A compilation of such reports would be of great value to factories, creameries and their patrons, as well as giving a correct statement of Wisconsin dairy production.

3. There should be an additional inspector of dairy and food products. It is an impossibility to cover the state with proper inspection with the present force. Another inspector would entail little expense upon the state in comparison with the valuable work which he could do.

The chemist of this department is also the state chemist. In the latter capacity he is required to make a great number of water analyses. The necessary work of the department compels him to work over time. He is flooded with requests for analyses of various food products by dealers who want to know what they are selling. He is unable to do all that can be properly required, without an assistant.

A high salaried assistant is not required. One could be obtained at small cost who could do plain detail work and leave the chemist to do many important things which must now be neglected. This is not a plea for additional jobs, but a most earnest request for such assistance in this commission as will greatly increase its value to the state.

4. A forfeiture law should be passed, making violators of the oleomargarine law liable in a civil action for damages. New York, the greatest state in the Union, under the operation of a law of this kind, has practically destroyed illegal oleomargarine business within her limits.

5. The pure food law of the state, after defining the word "food" as used in the act and prohibiting adulteration, with a series of particulars determining in what adulteration shall consist, makes an exception to the law in the following proviso: "Provided, that the provisions of this or the preceding section shall not apply to mixtures or compounds recognized as ordinary articles of food, if the same be distinctly labeled as mixtures or compounds, and from which no necessary ingredient in their preparation has been eliminated."

The question is constantly recurring—"What is recognized as ordinary article of food?" If a commonly adulterated food is "an ordinary article of food," adulteration can go on unchecked when protected by the label "compound." The law should name specifically all of the mixtures and compounds to which this provision is intended to apply.

6. The last legislature passed an act prohibiting the adulteration of linseed oil. This department was charged with its enforcement. As linseed oil is neither a food, drug nor liquor, it would seem as if the state oil inspector should be charged with the administration of the law regulating its manufacture and sale.

The expenses of this commission have been increased during the last two years by transportation charges, which are now paid by the state, and which were formerly a gift of the railroad companies.

Special counsel has been employed in only one case during the last two years.

The dairy inspector, Mr. Field, reports a marked improvement in the condition of dairies supplying milk to Milwaukee and the larger cities.

The assistant dairy and food commissioner, Mr. Chadwick, who retired at the beginning of the present year, did most faithful and efficient work during his entire service. His successor, Mr. Sweeting, has labored zealously in the performance of every duty which has devolved upon him.

Respectfully submitted,

H. C. ADAMS.

## REPORT OF ASSISTANT COMMISSIONER.

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To the Hon. H. C. ADAMS, Dairy and Food Commissioner of the State of Wisconsin.

*Dear Sir:*—I herewith present my report as assistant dairy and food commissioner for the year beginning at the date of my appointment, December 1st, 1899, and ending September 30th, 1900.

The greater part of my time has been devoted to securing samples of milk and oleomargarine. These samples have been obtained from nearly every county in the state. It has necessitated traveling over 27,000 miles by rail and over 2,000 by team.

Of milk I obtained a little over 2,000 different samples, which were found above standard, with the exception of a very few cases, who were complained against for adulteration, and all but two of them plead guilty and paid the fine and costs.

I found a few cases where oleomargarine was being sold contrary to the statute, and in very few instances the parties, upon being complained against, plead guilty and paid the fine and costs.

In nearly every instance I found the cheese factories and creameries in excellent condition as regards cleanliness and equipment. The exceptions in the matter of cleanliness arose partly from poor buildings, and partly from the location where the factories were placed, being on low ground, where the whey settled and accumulated about the premises.

In many sections of the state I found factories so closely grouped that a strong competition arose, often to the injury of all parties concerned. This condition would suggest that there is sufficient room for factories in the northern portion of the state, which promises to be an excellent dairy country.

At an estimate, based upon my visits during the year, I would say that not more than ten per cent. of the factories are paying their patrons by the Babcock test. There is need of improvement in this matter, which can best come from the patrons themselves. It does not seem just that the patron with three per cent. milk receive as much for the same as one with five per cent. milk.

I found a number of cities wherein milk inspectors are appointed by the city, who apply the Babcock test sometimes weekly, and sometimes once a month. And I have noticed that the milk in these cities is better in quality than the milk in cities wherein no such officials are appointed. It would seem a feasible and practical plan for other cities to follow.

All of which is respectfully submitted.

C. W. SWEETING,  
*Assistant Dairy and Food Commissioner.*



## REPORT OF THE CHEMIST.

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### PRESERVATIVES.

Chemical préservation of food products has increased so rapidly and in so many directions of late that no form of adulteration now practiced is so much in need of control.

Milk is preserved with borax, boric acid and formaldehyde; butter and cream cheese with boric acid and borax; sausage, Hamburger steak and chopped meats with borax, boric acid, nitre, sodium sulphite and bi-sulphite, and the fluorides; fruit juices, cider and non-alcoholic beverages with salicylic acid; soda water syrups and crushed fruit with salicylic and benzoic acid; beer with salicylic acid, sulphites and fluorides; hams and bacon with borax and boric acid, used both in the brine and in a dry state for packing; oysters, clams and fresh, dry and smoked fish, with boric acid and compounds containing it. Game is dressed with similar preservatives before shipment. Catsups and meat dressings commonly contain salicylic acid; and canned goods, such as corn and tomatoes, are similarly dosed with formaldehyde and sulphites. Moreover, in non-alcoholic beverages sugar is frequently substituted by coal tar products, saccharine and dulcol, substances which have an intense sweetening power but no food value.

It would seem that no perishable food product has escaped. Honest methods of food preserving, by use of sugar, salt and vinegar, by drying with or without smoking, sterilizing by heat and preserving by refrigeraton, are as feasible now as ever and the methods of artificial refrigeration and sterilization are much improved.

Perishable fruit is carried across the continent and from the tropics. Dressed meats are sent abroad and milk into the southern states by refrigeration. Buffalo meat might be obtained in Chicago where it was held frozen for nearly five years after the slaughter of the herd in that city at the close of the World's Fair. These facts show that actual necessity for the use of chemicals seldom exists.

The claim that the use of chemicals has been sanctioned by precedent in the use of salt and vinegar is not valid.

Salt, though a mineral, differs from other chemicals such as borax. It is present in the blood and vital fluids of all animals and, though it does not add to the bodily energy, it is as necessary to life as are oxidizable foods. Borax, on the contrary, is an element foreign to our system.

Vinegar is utilized and oxidized in the body as a food, adding to the sum total of vital energy.

Borax: Borax and boracic acids are perhaps more generally used than other chemicals, and are possibly less objectionable, but are still far from inert.

Upon the subject of deleteriousness we have the following direct evidence concerning boracic acid: Dr. M. K. Robinson, Medical Health Officer, Kent, England, has investigated the sudden illness of five out of seven persons. Milk and other foods were examined. The milk contained boracic acid. The cook had added some upon receiving the milk. The milk furnished by the dairyman was also found to be dosed with the same drug. Thus, the preservative had been added twice, resulting in an overdose. All recovered. Nine fowls were given the remaining blanc mange made from the milk, and five died; the remaining four suffered badly, but recovered. Br. F. J., '99, p. 17.

An infant in Madison, Wis., was treated for a digestive disorder by the local health officer, Dr. Fox. Finally, the milk was sent to me and was found to contain boracic acid. The milk was changed and the child recovered.

In experiments made on men and animals by Forster &

Schlenken, Mattern and Novy, it has been shown that smaller or larger doses interferes with digestion.

C. A. Mitchell in "Flesh Foods" states: "Micherlich has described the toxic effects of boric acid. It is a cumulative poison, and, according to LeFrere, is eliminated from the system but slowly, having been detected in the urine forty or fifty days after it had been taken."

Professor Wing, of Cornell, in his treatise on milk, says, referring to formalin, boracic and salicylic acids: "But all of these without exception, are more or less injurious to the human system, particularly if used continuously, even though in small quantities."

Numerous successful prosecutions have been obtained for the use of boracic acid in milk in England, and Dr. Otto Hehner, P. S. P., Analyst, England, said in 1890: "We should work for the entire prohibition of all kinds of preservatives. It is time we went back to natural food. I object to being physicked indiscriminately by persons not qualified to administer medicine, while I am in health. I object still more when I am ill. I object still more strongly to have my children physicked in their milk or their bread and butter. It is no consolation to me to know that the physie is not immediately fatal or even violently injurious. The practice is utterly unjustifiable, except from the point of view of the dealer, who wants to palm off a stale or ill-prepared article upon the public."

Dr. Alfred Hill, F. I. C., Health Officer, Birmingham, read a lengthy letter protesting against the use of these preservatives at the April meeting of the British Society of Health Officers. As a result the following resolutions were passed (Anal. May, p. 140): "That the incorporated Society of Medical Officers of Health strongly disapproves of the practice of adding preservative chemicals to foods. (2) That if preservative chemicals are added to any food a full disclosure as to the nature and amount thereof should be made to the purchaser." The prominent British analysts, Dr. Otto Hehner and Mr. Cassel have endorsed this stand,

Dr. Wiley, Chief Chemist, United States Department of Agriculture, takes a similar stand, and Drs. V. C. Vaughan and A. B. Prescott, of Ann Arbor, have testified that in their belief preservatives were deleterious and should only be used under proper labels.

The use of borax is prohibited in France, Germany, Austria, Holland, Spain and Italy. The medical authorities of France are strongly opposed to the use of all preservatives, and France prevents the importation of bacon preserved with the use of borax. Still, France, Germany and Holland permit the use of this substance in goods for export. Here they take exactly the stand of the vendors. The vendors are the only ones deriving benefit from the use of preservatives.

The Commissioner-in-Chief of Sanitation of Austria, Dr. M. Gruber, has recommended to the effect that it shall be made unlawful to introduce or sell as food preservatives salicylic, boric, sulphurous, fluoric, and benzoic acids, or any of their salts, as well as formaldehyde. As to the latter, its employment for preserving food should be absolutely prohibited.

**Sulphuro's Acid and Sulphites:** The evidence at hand upon their physiological action is meagre. Polli found that from eight to twelve grams were not injurious to adults. On the other hand, one gram of magnesium sulphite has caused disorders of digestion (Bernatzik and Braun). (B. F. J., Vol. 1, p. 94.)

Dr. Bernard Fischer, Director Municipal Laboratory, Breslau, Annual Report for 1897, reports two samples of meats as containing over 0.1 per cent. of sulphur dioxide. With reference to the use of sulphurous acid and its compound for "preserving" purposes for meat and meat preparations, Dr. Fischer remarks that the maximum amount of sulphur dioxide to be allowed is fixed at 0.1 per cent., and that this limit was laid down in 1894 upon medical authority. The researches of Kionka have demonstrated that sulphurous acid is not by any means to be regarded as an innocuous substance for food preservation, inasmuch as it acts as a blood poison. Relatively small quantities may be injurious to the human organism, in that it induces

bleeding of the capillaries. Dr. Jacobi limits 0.06 sulphur dioxide or 1.2 gm. sodium sulphite to a pound of meat.

Another phase of meat preservation is shown upon the cuts of the makers' circulars. Meat trimmings are sprinkled and thrown aside by butchers until a batch is secured. Then all is ground to sausage or Hamburger steak. The user only is benefited by using meat which otherwise must have been sold fresh. The chemist countenancing these methods will say preserved meat is better than tainted meat, containing possibly poisonous ptomains, but they must admit that it is not to be preferred to sound, fresh meat. The only possible exception might be in case of such pickled or dried fish as are very prone to produce these poisonous decomposition products—mackerel and codfish, for example—and here labeling could do no harm.

Formaldehyde: F. D. Simons, England, states that in his experiments it retards pancreatic digestion. (Br. F. J., p. 141.) Weigle and Merkel have reported that it rendered the albuminoids of milk less digestible, one part in 500, rendering casein insoluble in pepsin and hydrochloric acid. Hence, it retards digestion of both starch and proteids. Attempts to preserve fish with formalin have failed because of its hardening effect. This effect is well known to histologists who use it constantly for hardening specimens.

The coagulation of the albuminoids of milk by minute amounts of formalin has been so marked as to attract the attention of analysts to the abnormal action of their reagents on such milk. Mr. Leo Taylor (Analyst, '99, p. 87) states that when formalin has been added to milk which was being tested by the Leffmann-Beam process, or the Werner-Schmid process, the casein was always found to be difficult to dissolve. Mr. A. E. Ekins corroborated Mr. Taylor with regard to the insoluble condition of milk preserved with formalin.

Dr. Henry Leffmann, of Philadelphia, who is inclined to look leniently upon the use of borax in meat, says: "Formaldehyde possesses the power of rendering nitrogenous matters insoluble and more or less indigestible."

Dr. F. A. Morrison, of Indianapolis, has made an exhaustive

series of experiments upon the effect of formalin in milk, of which he writes as follows: "Our law provides that anything added to milk which shall affect it injuriously as an article of diet shall be considered an adulteration within the meaning of the law. So far as we could discover no one was using a sufficient amount to absolutely poison the consumer, but it occurred to me to examine into the digestibility of milk to which formalin had been added. I made ninety-six experiments with artificial gastric juice upon fresh milk and upon that containing formalin varying from three drops to one-half drop to the pint, and found without exception that it had decreased the action of pepsin; in fact, in some instances, stopped it. These experiments were conducted as regard temperature, etc., in the manner usual in physiological laboratories. My animal experiments, not yet concluded, show that young animals fed upon this milk will not thrive and are subject to intestinal troubles. No longer ago than yesterday the 'laboratory cat' was made quite sick by being fed upon milk which had been collected by our inspectors and on sale in this city. Formalin was present."

Halliburton, the noted English physiological chemist, finds that formalin prevents or retards both gastric and pancreatic digestion and retards the curdling of milk by rennet. He states that it disintegrates blood, is irritating to the skin and can hardly be less so to the much more tender mucous membranes of the alimentary canal.

G. Bruni (Chem. Cent. Bl.) has found that the administration for a few days of non-toxic doses of formaldehyde causes hardening of the tissues with which it comes in contact.

Formaldehyde has failed as a meat preservative because its hardening action, meat, upon standing after its use, becoming unfit to eat and fish growing so hard as to be unsaleable after treatment with a solution as dilute as 1 to 5000 (Bloxam).

Dr. Charles T. McClintock, Physiological Chemist, has testified, basing his knowledge upon his own experiments, that the use of formaldehyde in milk was injurious to health.

Salicylic Acid: The injuriousness of salicylic acid and its salts has been proven beyond debate. The Paris Academy of

Science has forbidden even the smallest addition of salicylic acid or salicylates to food as liable to cause injury where weakness of the kidneys or digestive organs exist.

Sleeplessness, head-ache and palpitation of the heart are some of the minor symptoms resulting from its administration in small amounts, as in cider. (Dr. F. C. Smith, Br. F. J., p. 105.)

By far the greatest injury from its use follows the addition to bottled grape juice, intended solely for invalids having digestive disorders and searching for a delicate food, thus being unwittingly fed a poison that will in a week's time derange a healthy stomach.

The claim that food is sterilized by preservatives as commonly used, is not borne out. The object of antiseptics so added is simply to retard decomposition and the statement that disease germs are thereby destroyed has no foundation in fact.

Numerous cases have been reported from Switzerland where poisoning from meat has occurred when borates were used. The borates not only failed to preserve the meat but served to mask incipient putrefaction.

Antiseptics, when added to milk in small amounts, merely retard the growth of bacteria and, upon being received in favorable soil, there is nothing to prevent their growth, as would be the case with sterilized and even Pasteurized milk.

With the exception of tuberculosis, diseases rarely gain access to the body through milk, unless it be through impure water which has been added to the milk. Hence the argument of preventing typhoid fever and kindred diseases by the use of preservatives should have no weight with honest milkmen.

The stand so well taken by Dr. Whittaker that a food preservative should be presumed guilty until proven innocent, seems to voice the opinion of authorities and courts both in this country and in Great Britain.\*

In England, while a special investigating committee appointed

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\*In another part of this report will be found the decision of the supreme court of Iowa upon the subject of preservatives, a copy of which was furnished by Hon. B. P. Norton, Commissioner.

by parliament, is receiving evidence, prosecutions for the use of borax and formaldehyde are regularly occurring.

The fact is that the presence of preservatives will not bear disclosure to the consumer.

### MILK.

The milk delivered at creameries and cheese factories has shown a steady improvement in quality. This is due both to the fact that offenders are more frequently brought to account and to the growing use of the Babcock tester by factorymen. It is easier to refuse a patron's milk at the factory because of its quality, or to pay only its exact value as determined by the fat test, than to accuse him of wilful adulteration.

While the milk at factories, and even in cities, is improving steadily in quality, adulteration of city milk by the addition of preservatives has been rapidly on the increase. As a result, most of the prosecutions in cities for the adulteration of milk have been for this offense.

Agents selling the preservatives argue that "All of the other milkmen use them;" that "they are perfectly harmless;" that "they go off as a gas;" "cannot be detected," "act the same as ice," and worst of all, give circulars purporting to come from mothers advising their use in infants' milk.

Even physicians, the licensed guardians of health, are always to be found who will testify as experts that borax, boric acid and even formalin are given medicinally in much larger doses than used in milk and without serious effect. They argue that they are therefore harmless when so used, ignoring the fact that a medicinal dose is one which will produce a physiological effect.

The question is not whether the substance is poisonous in the dose given, but whether the food so dosed is thereby adulterated to the possible prejudice of the consumer.

"The deleteriousness of preservatives depends upon many factors, the principal of which are:

- 1st. The chemicals may be poisonous to living protoplasmic cells, thus directly affecting the lining of the alimentary canal.



2nd. The chemicals may act by precipitating the enzymes through the agency of which the digestion of food occurs.

3rd. The chemicals may produce either an acid or an alkaline condition of the digestive juices which is unfavorable to the action of specific enzymes.

4th. They may act upon the albuminoids or starches or fats so as to render them insoluble and indigestible by the enzymes.

For example, formaldehyde in milk may be deleterious in several ways. It may kill the cells of the mucus membrane. It may precipitate the nitrogenous digestive ferments and it may and does so act upon the albuminoids and caseinogen of milk as to make those substances so indigestible that rennet will fail to curdle the milk after its use.

#### METHODS OF ANALYSIS.

Specific gravity is taken at 60 degrees C. by means of a Westphal balance.

Solids: 5cc are evaporated in flat-bottomed platinum dish upon the water bath and finally in the water oven at 100 degrees C.

Ash is obtained by ignition of the solids.

Fat is determined with the Babcock tester.

Borax may be detected by acidulating the ash with a few drops of concentrated sulphuric acid, thoroughly mixing with 5cc of alcohol. On igniting, the flame will be distinctly green when borax is present. Or, borax may frequently be detected directly in the milk by acidulating slightly with hydrochloric acid. Turmeric paper is moistened with the acid milk and dried over boiling water. Boracic acid produces a red coloration changing to blue with ammonia. The addition of too much acid destroys the bright red color, producing a brown.

Formic aldehyde: This substance may be frequently recognized when concentrated commercial sulphuric acid is added to milk in the Babcock test bottle, a blue coloration forming at the line of contact. (Hegner's test.)

The Massachusetts modification of this test is more sensitive,

the violet color formed being from the charring due to use of sulphuric acid.

In this test 10cc of milk are warmed in a white capsule with 10cc of hydrochloric acid and a few drops of a dilute solution of ferric chloride. The violet color forms before the mixture comes to a boil and is quite permanent. In using this test upon cream long heating or boiling will give suspicious indications in the absence of formaldehyde. Hence, the mixture should not be permitted to boil.

Phloroglucin test: This may also be applied directly to the milk, but is less sensitive than the previous test. .500 gm. of phloroglucin and 10 gms. of caustic potash are each dissolved in a small amount of water, mixed and diluted to 50cc. 10cc of milk is placed in a white capsule and 2cc of the reagent added. Upon mixing, a pink color rapidly develops in the presence of formalin. A strong reaction is given when 1 dram of 40 per cent. formalin is added to 8 gallons of milk.

Several other satisfactory tests may be made upon the distillates from milk and other food products. In the case of milk 100 to 200cc are acidulated with a concentrated solution of citric acid, adding paraffine to control frothing. Phosphoric acid is generally used for the acidulation of canned goods and other food products previous to their distillation. To the distillate

(a) Lieberman's reaction may be applied as follows:

Two or three drops 1 per cent. phenol solution in water are added to 10cc of the distillate and the whole overlaid upon concentrated sulphuric acid. A crimson zone results when formalin is present, delicate to 1 part in 100,000.

(b) 1 gm. of phenol hydrazine hydrochloride and 1.5 gms. sodium acetate are dissolved in 10cc of water. When 4 drops of the reagent and 4 drops of sulphuric acid are added to 1cc of the distillate a green coloration results in the presence of formalin.

(c) Rimini uses 2 drops of the phenol hydrazine solution with 2 drops of a sodium nitro-prusside solution with 1cc of the distillate overlaying upon 1cc of caustic soda solution. A deep blue coloration results, changing quickly to green, yellow and red.

MILK ANALYSES.

May 12, 1899.

	Per cent.
No. 7. Total solids .....	11.78
Fat .....	3.20
Solids not fat .....	8.58
No. 11. Total solids .....	10.78
Fat .....	2.8
Solids not fat .....	7.98
Ash .....	.65
Watered.	

May 12, 1899. Samples taken at Reeseville, May 5th.

	Per cent.
No. 17. Total solids .....	12.15
Fat .....	3.2
Solids not fat .....	8.95
Ash .....	....
No. 19. Total solids .....	11.36
Fat .....	2.9
Solids not fat .....	8.46
Ash .....	.64
No. 20. Total solids .....	12.61
Fat .....	3.7
Solids not fat .....	8.91
Ash .....	....
No. 35. Total solids .....	10.70
Fat .....	3.00
Solids not fat .....	7.70
Ash .....	.47
No. 32. Total solids .....	11.60
Fat .....	2.80
Solids not fat .....	8.80
Ash .....	....

No. 19 probably watered. No. 35 watered.

May 19. Samples taken by W. W. Chadwick, May 16. Sold by L. Meisner, Lake Mills.

	Per cent.
Total solids .....	11.13
Fat .....	2.8
Solids not fat .....	8.33
Ash .....	.67

## REPORT OF THE WISCONSIN

June 21, 1899. Samples milk taken at Albany.

	S. G.
No. 8 .....	1.0315
No. 17 .....	1.031
No. 22 .....	1.030

June 21, 1899. Samples taken at Seymour.

	S. G.
No. 3 .....	1.031
No. 6 .....	1.031
No. 18 .....	1.0325
No. 26 .....	1.031
No. 32 .....	1.031
No. 36 .....	1.034

July 7, 1899. Sample of milk sent by Col. C. Wheeler, Governor, Soldiers' Home, Milwaukee. Said to have been sold by C. L. Dana.

	Per cent.
Specific gravity .....	1.014
Total solids .....	10.48
Fat .....	6.00
Solids not fat .....	4.48
Ash .....	.35

This sample consisted of cream, to which was added a little more than twice its volume of water.

July 9, 1899. Sample purchased by W. W. Chadwick of Will Hughes, Janesville.

	Per cent.
Specific gravity .....	1.030
Fat .....	2.7

August 16, sample taken by W. W. Chadwick, Aug. 14, delivered by G. Wackholz, Branch, Wis.

Total solids .....	10.33
Fat .....	2.6
Solids not fat .....	7.73
Ash .....	.56
S. G. 1.027.	
Watered.	

August 30, 1899. Samples taken by W. W. Chadwick at Branch, Wis.

	Per cent. fat.	S. G.
No. 20. J. Gruber .....	2.6	1.031
No. 30. J. Goedert .....	3.0	1.305
No. 31. J. Goedert .....	3.0	1.030
No. 37. J. Hrudke .....	3.0	1.0305

Aug. 30. Sold by Chas. Eckert, Racine. Bought by W. W. Chadwick.

	Per cent.
Total solids .....	10.07
Fat .....	2.80
Solids not fat .....	7.27
Ash .....	.65

Watered and preserved with borax.

Sept. 12. Sample delivered by Hushold, Kenosha.

	Per cent.
No. 15. Total solids .....	11.54
Fat .....	2.90
Solids not fat .....	8.64

Sept. 27. Delivered by Capt. Pinhalo, Waucousta.

	Per cent. fat.	S. G.
No. 4 .....	2.65	1.0305

April 1, 1900. Sample bought by C. W. Sweeting.

	Per cent.
Total solids .....	10.55
Fat .....	2.60
Solids not fat .....	7.95
Ash .....	.68

Watered.

\*April 13, 1900. Delivered by I. Burges, Hustisford.

	S. G.	Per cent. fat.
No. 13 .....	1.029	2.7

April 13. Delivered by Wm. Lange, Hustisford.

	S. G.	Per cent. fat.
No. 17 .....	1.029	2.6

April 13. Delivered by Wm. Schwantes, Hustisford.

	S. G.	Per cent. fat.
No. 8 .....	1.0285	3.0

May 18. Delivered by B. Summerfelt, Juneau.

	S. G.	Per cent. fat.
No. 2 .....	1.023	2.8

Watered.

	S. G.	Per cent. fat.
No. 3. F. Butterbrod .....	1.032	3.0

May 3. Delivered by R. Mules, Oak Hill.

	S. G.	Per cent. fat.
No. 6 .....	1.0348	2.7

Skimmed.

## REPORT OF THE WISCONSIN

June 26, 1900. Delivered by P. Thom, Farris Corners.		
	S. G.	Per cent. fat.
No. 10 .....	1.034	2.6
June 26, 1900. Delivered by W. Pegnes, Farris Corners.		
	S. G.	Per cent. fat.
No. 15 .....	1.031	2.8
July 9. Delivered by J. Koci, Francis Creek		
	S. G.	Per cent. fat.
July 9. Delivered by J. Koci, Francis Creek	1.035	2.15
July 9. Delivered by A. Smelik, Francis Creek		
	S. G.	Per cent. fat.
July 9. Delivered by A. Smelik, Francis Creek .....	1.032	2.6
July, 9. Delivered by F. Streuber, Francis Creek		
	S. G.	Per cent. fat.
July, 9. Delivered by F. Streuber, Francis Creek .....	1.033	2.3
July 9. Delivered by A. Marik, Francis Creek (Sample churned.)		
	S. G.	Per cent. fat.
July 9. Delivered by A. Marik, Francis Creek	1.034	2.7
July 19. Delivered by F. Hallada, Mishicott..		
	S. G.	Per cent. fat.
July 19. Delivered by F. Hallada, Mishicott..	1.030	2.6
July 19. Delivered by J. Hallada, Mishicott		
	S. G.	Per cent. fat.
July 19. Delivered by J. Hallada, Mishicott	1.030	2.6
July 19. Delivered by Wm. Kracht, Mishicott (Watered.)		
	S. G.	Per cent. fat.
July 19. Delivered by Wm. Kracht, Mishicott (Watered.)	1.0235	2.2
July 24. Delivered by L. J. Taffry, Milwaukee (Skimmed.)		
	S. G.	Per cent. fat.
July 24. Delivered by L. J. Taffry, Milwaukee (Skimmed.)	1.0335	2.7
July 24. Delivered by F. Krahn, Milwaukee, No. 52 .....		
	S. G.	Per cent. fat.
July 24. Delivered by F. Krahn, Milwaukee, No. 52 .....	1.028	2.7
Aug. 16. Delivered by J. Teucher, Monroe, No. 4 .....		
	S. G.	Per cent. fat.
Aug. 16. Delivered by J. Teucher, Monroe, No. 4 .....	1.031	3.0
Aug. 28. Delivered by J. Jarck, Hofa Park, No. 4 .....		
	S. G.	Per cent. fat.
Aug. 28. Delivered by J. Jarck, Hofa Park, No. 4 .....	1.024	2.4
(Watered.)		

	S. G.	Per cent. fat.
Aug. 28. Delivered by A. Meikle; Hofa Park, No. 27 ..... (Watered.)	1.0225	2.6
Sept. 11. Delivered by Wm. Pagel, Potters, No. 24 .....	1.034	2.8
Sept. 20. Delivered by Mrs. Zemlock, Neenah	1.027	3.3
Sept. 21. Delivered by M. Kennon, Fond du Lac .....	1.030	3.0
Sept. 21. Delivered by D. Kennon, Fond du Lac .....	1.030	2.8
Sept. 21. Delivered by H. Erke, Fond du Lac	1.031	3.2

MILKS EXAMINED FOR PRESERVATIVES.

- July 6, 1899.—Three samples sent from Beloit. Two proved to be pure. Sample of evening's milk, sold by John Yost, Beloit, July 5th, to W. W. Chadwick, contained formalin.
- July 9, 1899.—Janesville city supply.  
Sold by R. W. Scott to W. W. Chadwick, contained formalin.
- July 9, 1899.—Sold by Chas. Barnes to W. W. Chadwick, contained formalin.
- July 18, 1899.—Beloit city milk. Two samples found free from preservatives.
- July 26, 1899.—Sent by W. A. Jackson, District Attorney, Janesville. Purchased from H. D. McKinney. Free from preservatives.
- Aug. 29, 1899.—Racine city supply.  
Taken by W. W. Chadwick:
  - Wm. Benkert, owner and driver, evening milk No. 4, contained formalin.
  - W. H. Lehnery, owner (Geo. Jackson, driver), evening's milk No. 5, contained formalin.
  - Mrs. M. Pfeiffer, milk contained boracic acid,

- Dec. 14, 1899.—Sample milk sent by H. Halvorsen. Examined for coloring and blood. Free from both.
- June 22, 1900.—Three samples taken at Sheboygan Falls. Free from preservatives.
- July 3, 1900.—Plymouth city milk. Free from preservatives.
- July 24, 1900.—Thinnes Bros., Milwaukee. Milk contained formalin.
- July 24, 1900.—Sample sent from Antigo. No preservatives found.
- July 25, 1900.—Thirty-four samples city milk sent from Milwaukee. Found free from preservatives.
- Aug. 1, 1900.—Thirty samples city milk sent from Milwaukee. Found free from preservatives.
- Aug. 2, 1900.—Eleven samples city milk, Milwaukee. Found free from preservatives.
- Aug. 3, 1900.—Nine samples city milk sent from Milwaukee. Eight found free from preservatives. Sample sold by Champenny Milk & Cream Co. contained formalin.
- Sept. 15, 1900.—Five samples milk taken at Sheboygan Falls. All pure.

#### PRESERVATIVES AND MILK ADULTERANTS.

- Oct. 25, 1898.—“B” Preservaline, bought by N. J. Field of Dreyfoos & Sandles, Milwaukee. Composed of salt, nitre, boracic acid, and magenta coal tar color.
- Feb. 1, 1899.—“New Method Meat Preserver”, purchased by N. J. Field of Dreyfoos & Sandles, Milwaukee. Composed of sodium sulphite.
- Sept. 13, 1899.—Special “M” Preservaline, Preservaline Manufacturing Co. Consists of formic aldehyde.
- Oct. 13, 1899.—“Laktone Coloring for Milk or Cream.” Sold by Preservaline Manufacturing Co. Coloring matter found to be aniline dye, apparently sulphonated aniline yellow.



## CREAM.

The adulteration of cream has consisted in the addition of chemical preservatives such as formaldehyde, boracic acid and borax, and in the addition of compounds intended for thickening and preserving, such as are sold under the term "Cream Albuminoid" and similar titles. These compounds contain gelatin, borax or boracic acid. Artificial coloring is also resorted to and butter colors or a special milk color sold under the title "Laktone" have been used. Annatto has not been met with during the past two years.

## EXAMINATIONS OF CREAM.

1899.

- Mar. 25 Purchased of — Gear, Menasha. Aniline color.  
 Mar. 6 Taken by W. W. Chadwick at Sheboygan. Not preserved.  
 July 6 Taken by W. W. Chadwick, of Wm. Krueger, Beloit. Contained formalin.  
 July 5 Bought by W. W. Chadwick of T. P. Witte. Contained formalin.  
     Bought of C. H. Hanson, Beloit. Contained formalin.  
     Bought of Beloit Creamery Co. Contained formalin.  
     One sample examined and found to be pure.  
 July 12 Bought by W. W. Chadwick of Melrose Creamery, Fond du Lac. Contained formalin.  
 July 14 Bought by W. W. Chadwick of T. P. Witte, Beloit. Contained formalin.  
 Aug. 29 Bought of Wm. Leonard, Racine, by W. W. Chadwick. Contained boracic acid.  
     Bought by W. W. Chadwick of Wm. M. Phelps. Contained boracic acid.  
     Bought by W. W. Chadwick of W. R. Taylor, Racine. Contained boracic acid.  
     Ten samples sent from Racine examined and found pure.  
 Sept. 12 Three samples of cream, taken at Kenosha. Examined for preservatives. Found to be pure.  
 Nov. 26 Sent by Hon. L. H. Parker, Beloit. Said to be colored. No color found.

1900.

- July 24 Seven samples sent by N. J. Field from Milwaukee. Pure.  
     Bought by N. J. Field of A. Kern, Milwaukee. Pure.  
 July 25 Sent by N. J. Field. Bought of Jos. Nowatny, Milwaukee.  
     Two samples taken by N. J. Field. Free from preservatives.  
 July 31 Two samples purchased by N. J. Field, Milwaukee. Pure.  
 July 21 One sample purchased by C. W. Sweeting, Milwaukee.  
 Aug. 2 Nine samples purchased by N. J. Field, Milwaukee. Pure.  
 Aug. 3 Bought by C. W. Sweeting of Milwaukee Cream Co., Milwaukee. Contained formalin.  
 Aug. 3 Four samples taken by C. W. Sweeting, Milwaukee. Pure.

## BUTTER AND OLEOMARGARINE.

For the examination of butter and oleomargarine, official methods have been largely used. The butyro-refractometer and polariscope, with and without the use of selenite, have also been of much assistance in the detection of renovated butter and oleomargarine. For the separation of the azo color generally used in oleomargarine the following process has been employed:

From 15 to 25 grams of the melted and filtered fat have been shaken with alcohol which has been previously saturated with carbon-disulphide. The alcoholic layer containing the coloring matter and a portion of the fat and fatty acids is then evaporated with from 1 to 2cc of strong caustic soda solution (1:1). In this manner the coloring matter is precipitated and the fats and fatty acids saponified at once with the removal of the alcohol. The resultant, soap, is dissolved in water and the coloring matter extracted with ether. Upon evaporation of the ether the coloring matter will be in sufficiently concentrated form to be presentable as evidence and, if desirable, a portion of the ether extract can be evaporated with very dilute sulphuric acid, giving the red coloration characteristic of that color.

Analyses of butter and butter substitutes.

Date.	Name.	Address.	Character of field with polarized light.	BUTYRO-REFRACTOMETER.		Reichert No. (cc. of $\frac{N}{10}$ NaOH.)	Remarks.
				Critical angle.	Butter scale.		
1898.							
Nov. 15	Swift & Co.	Ashland	Prismatic	51.	45.3	.6	Oleomargarine, azo color.
Nov. 15	Armour & Co.	Ashland	Monochromatic	45.5	46.1	29.5	Butter branded oleomargarine.
Nov. 6	Leo. A. Peil	Racine	Prismatic	51.5	45.7	1.8	Oleomargarine, azo color.
Nov. 6	Slot & Wiederbach Co.	Racine	Prismatic	50.0	44.8	.95	Oleomargarine, azo color.
Nov. 6	Christian Slot	Racine	Prismatic	50.5	45.	.75	Oleomargarine, azo color.
Nov. 14	Welsted (sent by)	Brampton, Mch	Prismatic	49.5	41.2	.....	Oleomargarine.
Nov. 30	Hotel Stolte	Reedsburg	Monochromatic	45.	41.5	.....	Butter.
Nov. 16	Ac'mour & Co.	West Superior	Prismatic	52.5	45.8	.6	Oleomargarine, azo color.
Nov. 23	John Meehan	Beloit	Prismatic	51.	45.8	.85	Oleomargarine, colored.
Nov. 23	J. B. Smith	Janesville	Prismatic	52.5	45.9	.5	Oleomargarine, colored.
Nov. 23	McGavock Bros	Beloit	Prismatic	54.	45.5	.....	Oleomargarine, uncolored
Nov. 15	Knight Hotel	Ashland	Monochromatic	45.	46.	.....	Butter.
Nov. 22	The Hub Restaurant	Milwaukee	Monochromatic	45.5	47.2	.....	Butter.
Dec. 21	Jones House	Oconomowoc	Monochromatic	46.5	48.	.....	Butter.
Nov. 30	W. A. Stolte	Reedsburg	Prismatic	51.	45.8	1.9	Oleomargarine, colored.
1899.							
Jan. 10	Asbury Restaurant	Milwaukee	Prismatic	45.	45.6	.....	Butter.
Jan. 18	Railway Restaurant	Spooner	Prismatic	45.5	47.3	.....	Butter.
Jan. 18	Columbia Restaurant	West Superior	Prismatic	42.5	46.2	.....	Butter.
Jan. 17	Columbia Restaurant	Ashland	Prismatic	43.5	46.8	.....	Butter.
Jan. 17	Knight Hotel	Ashland	Prismatic	46.	47.5	.....	Butter.
Jan. 16	Boston Restaurant	Ashland	Prismatic	46.6	47.6	.....	Butter.
Jan. 16	Q. P. Restaurant	Ashland	Prismatic	46.0	47.7	.....	Butter.
Jan. 14	New Clarendon Hotel	West Superior	Prismatic	46.0	47.4	.....	Butter.
Jan. 16	Hotel Northern	West Superior	Prismatic	45.	47.1	.....	Butter.
Jan. 16	Arlington Restaurant	West Superior	Prismatic	47.	47.1	.....	Butter.
Jan. 16	Royal Bakery Restaurant	West Superior	Prismatic	44.8	45.5	.....	Butter.
Jan. 16	Hopkins Restaurant	West Superior	Prismatic	45.	46.5	.....	Butter.
Jan. 19	G. W. Carpenter (sent by)	Reedsburg	Prismatic	43.5	45.	.....	Butter.
Jan. 18	Hotel Metropolitan	West Superior	Prismatic	53.	45.2	.....	Oleomargarine, colored.
Jan. 18	Hotel Occidental	West Superior	Prismatic	54.5	46.7	.....	Oleomargarine, colored.
Jan. 14	Belt Line Restaurant	West Superior	Prismatic	56.	47.5	.....	Oleomargarine, colored.

Analyses of butter and butter substitutes.—Continued.

Date.	Name.	Address.	Character of field with polarized light.	BUTYRO-REFRACTOMETER.		Reichert No. (cc. of $\frac{N}{10}$ NaOH.)	Remarks.
				Critical angle.	Butter scale.		
1899.							
Jan. 14	Commercial Hotel.....	West Superior.	Prismatic.....	56.5	48.4	.45	Oleomargarine, azo color.
Jan. 14	Kommers Hotel.....	West Superior.	Prismatic.....	57.	49.1	.....	Oleomargarine, colored.
Jan. 13	Hopkins Restaurant.....	West Superior.	Monochromatic..	45.	45.2	.....	Butter.
Jan. 13	New Empire Restaurant.....	West Superior.	Mottled field....	46.5	45.4	25.2	Renovated butter.
Jan. 14	Land & Riv. Co. Restaurant.....	West Superior.	Monochromatic..	45.	46.	.....	Butter.
Jan. 13	Delmonico Restaurant.....	West Superior.	Monochromatic..	46.3	46.5	.....	Butter.
Jan. 20	Geo. A. Fell & Co.....	Racine.	Prismatic.....	52.	46.7	.....	Oleomargarine, colored.
Jan. 20	Swift & Co.....	West Superior.	Prismatic.....	52.2	47.3	.6	Oleomargarine, azo color.
Jan. 26	Mr. Straubel (sent by).....	Madison	Prismatic.....	50.	44.8	.....	Oleomargarine.
Jan. 26	John Meehan.....	Beloit	Prismatic.....	51.	46.	.9	Oleomargarine, colored.
Jan. 31	Mrs. L. Neindorf.....	Madison	Prismatic.....	51.5	46.3	1.3	Oleomargarine.
Feb. 8	Hotel Van.....	Phillips	Monochromatic..	43.	44.1	.....	Butter.
Feb. 8	R. Breitengross.....	Phillips	Monochromatic..	43.	44.2	.....	Butter.
Feb. 8	F. L. Hunt.....	Phillips	Monochromatic..	43.	44.	.....	Butter.
Feb. 10	Clarendon Hotel.....	West Superior	Monochromatic..	43.5	45.1	.....	Butter.
Mch. ..	Mr. Burmeister (sent by).....	Madison	Monochromatic..	44.	45.6	.....	Butter.
Mch. 1	F. N. Larson.....	Eau Claire.	Prismatic.....	49.5	45.	.....	Oleomargarine, colored.
Mch. 9	Peter P. Roland.....	Milwaukee.	Monochromatic..	45.5	46.7	.....	Butter.
Mch. 9	A. H. Grier.....	Milwaukee.	Monochromatic..	44.5	44.	.....	Butter.
Apr. 12	Phelan House.....	Haywood	Monochromatic..	55.	46.9	.5	Oleomargarine, colored.
Apr. 22	R. R. Lunch House.....	Watertown Jet.	Monochromatic..	45.	45.5	.....	Oleomargarine, colored.
Apr. 11	Carter & Emmons.....	Eagle River	Prismatic.....	44.	45.6	.....	Butter.
Mch. 31	Burmeister (sent by).....	Madison	Monochromatic..	44.5	45.	.....	Butter.
Mch. 10	Watertown Junct. Hotel.....	Watertown Jet.	Monochromatic..	45.5	45.	.....	Butter.
Apr. 24	Brewster House.....	Shullsburg.	Monochromatic..	45.5	47.2	28.5	Butter.
Aug. 3	U. S. Hotel.....	Waupaca	Mottled field....	49.	44.4	2.45	Oleomargarine.
Oct. 16	Edgerton.....	Edgerton	Prismatic.....	44.5	45.	.....	Butter.
Oct. 17	Wm. Steinmeyer.....	Milwaukee	Monochromatic..	49.3	44.5	3.3	Oleomargarine.
Oct. 27	Hotel Warren.....	Baraboo.	Prismatic.....	44.5	44.5	.....	Oleomargarine.
Nov. 17	John L. Daley.....	Milwaukee	Prismatic.....	51.	46.	1.5	Oleomargarine.
Nov. 20	Ry. Branch Y. M. C. A. Rest.....	Milwaukee	Prismatic.....	51.	46.	1.0	Oleomargarine.
Nov. 22	John L. Daley.....	Milwaukee	Prismatic.....	44.5	44.4	.....	Oleomargarine, azo color.
Nov. 8	A. M. Bailey, Restaurant.....	Oshkosh	Monochromatic..	45.	45.7	.....	Butter.
Dec. 13	D. C. Adams.....	Milwaukee	Monochromatic..	45.	45.7	.....	Butter.

Dec. 13	D. C. Adams .....	Milwaukee .....	Monochromatic..	48.	47.8	.....	Butter.
Dec. 13	D. C. Adams .....	Milwaukee .....	Prismatic .....	51.	45.7	.....	Oleomargarine, uncol'r'd,
Dec. 14	Sargent's Restaurant..	Milwaukee .....	Monochromatic..	45.5	46.2	.....	Butter.
Dec. 13	Plankinton House Lunch Room	Milwaukee .....	Monochromatic..	45.	46.5	.....	Butter.
Dec. 14	G. P. Gilpatrick, Restaurant...	Milwaukee .....	Monochromatic..	44.5	46.	.....	Butter.
Nov. 21	Grant Hotel .....	Kenosha .....	Monochromatic..	45.5	46.4	.....	Butter.
Dec. 28	Williams House .....	Manitowoc .....	Monochromatic..	44.5	46.3	.....	Butter.
Dec. 27	Washington House .....	Sheboygan .....	Monochromatic..	46.5	46.5	.....	Butter.
Dec. 27	City Hotel .....	Sheboygan Fls	Monochromatic..	46	46.7	.....	Butter.
Dec. 12	Milwaukee Health Department.	Milwaukee .....	Prismatic .....	50.	45.2	.....	Oleomargarine
Dec. 20	A. Wuelff .....	Kenosha .....	Monochromatic..	43.	44.5	.....	Butter.
1900.							
Jan. 2	Wisconsin House .....	Madison .....	Monochromatic..	43.5	45.8	.....	Butter.
Jan. 5	One Minute Lunch House..	Madison .....	Monochromatic..	44.	45.3	.....	Butter.
Jan. 5	W. S. Davis .....	Williams Bay ..	Monochromatic..	44.5	46.5	.....	Butter.
Jan. 5	W. S. Davis .....	Williams Bay ..	Monochromatic..	44.	45.	.....	Butter.
Jan. 5	O. P. Southwick .....	Williams Bay ..	Monochromatic..	44.	45.	.....	Butter.
Jan. 5	The Hoernig Co. ....	Oshkosh .....	Prismatic .....	43.	50.	.....	Oleomargarine, slightly colored.
Jan. 25	Chas. A. Hoernig .....	Oshkosh .....	Prismatic .....	57.	43.7	32	Oleomargarine, azo color.
Jan. 18	Arthur Smith .....	Eau Claire .....	Mottled field .....	44.	45.6	26.5	Renovated butter.
Jan. 19	J. G. End .....	Sheboygan .....	Prismatic .....	52.	45.7	1.0	Oleomargarine, azo color.
Jan. 24	W. J. Ennison (sent by) .....	La Crosse .....	Monochromatic..	43.5	45.1	.....	Butter.
Jan. 16	F. Bailey .....	Racine .....	Mottled field .....	.....	.....	23.6	Renovated butter.
Jan. 22	Chris. Slot .....	Racine Junct..	Prismatic .....	.....	.....	1.1	Oleomargarine, azo color.
Jan. 26	Geo. Dabold .....	La Crosse .....	.....	43.	44.7	.....	Butter.
Jan. 26	Justin Lukwitz (Ferguson)	La Crosse .....	.....	44.	44.8	.....	Butter.
Jan. 26	Justin Lukwitz (Dabold)	La Crosse .....	.....	43.5	45.	.....	Butter.
Jan. 16	C. A. Rickeman (Est.) .....	Racine .....	Monochromatic..	44.7	44.3	.....	Butter.
Jan. 16	Leo. A. Peil Co. ....	Racine .....	Prismatic .....	50.	44.4	1.0	Oleomargarine, azo color.
Jan. 16	Slot & Wiederback Co	Racine .....	Prismatic .....	49.5	44.4	1.3	Oleomargarine, ozo color.
Jan. 16	Leo. A. Peil Co. ....	Racine .....	Monochromatic..	44.	46.	.....	Oleomargarine, colored.
Jan. 26	.....	.....	.....	.....	.....	.....	Oleomargarine, slightly colored.
Jan. 6	W. T. Barkow .....	Milwaukee .....	Prismatic .....	50.	45.5	.....	Oleomargarine, azo color.
Jan. 6	Ed. P. Goetz .....	Milwaukee .....	Prismatic .....	.....	.....	1.3	Butter.
Jan. 6	Ed. P. Goetz .....	Milwaukee .....	Monochromatic..	45.	46.	.....	Butter.
Jan. 26	Russell House .....	Neenah .....	Prismatic .....	49.	44.6	1.7	Oleomargarine, colored.
Jan. 25	Neenah Hotel .....	Neenah .....	Monochromatic..	43.8	44.3	.....	Butter.
Jan. 25	Hotel Gehring .....	Neenah .....	Monochromatic..	44.5	44.5	.....	Butter.
Jan. 25	Landgraf's Hotel .....	Menasha .....	Monochromatic..	43.5	44.7	.....	Butter.
Jan. 25	Windsor Hotel (Thos. W. Lacy)	Milwaukee .....	Prismatic .....	49.	44.5	1.2	Oleomargarine, azo color.
Feb. 12	W. S. Davis .....	Williams Bay ..	Prismatic .....	49.	41.5	1.6	Oleomargarine, colored.
Feb. 9	K. Mikkleson .....	Stoughton .....	Monochromatic..	43.2	41.2	.....	Butter.
Feb. 13	N. T. Hanson .....	Stoughton .....	Monochromatic..	45.	44.5	.....	Butter.
Feb. 13	.....	.....	.....	44.5	46.	.....	Butter.
Feb. 14	John Berg (sent by) .....	Ashland .....	Monochromatic..	45.	46.3	.....	Butter.
Fe. 14	John Berg (sent by) .....	Ashland .....	Monochromatic..	45.	46.3	.....	Butter.
Feb. 19	Frank Raumd (sent by) .....	Milwaukee .....	Monochromatic..	46.	47.7	.....	Butter.

*Analyses of butter and butter substitutes.—Continued.*

Date.	Name.	Address.	Character of field with polarized light.	BUTYRO-REFRACTOMETER.		Reichert No. (cc. of $\frac{N}{10}$ -NaOH.)	Remarks.
				Critical angle.	Butter scale.		
1900.							
Feb. 19	M. Currie .....	Milwaukee.....	Monochromatic..	48.	49.2	.....	Butter.
Feb. 16	H. Weber's Restaurant.....	Milwaukee.....	Monochromatic..	45.	46.4	.....	Butter.
Feb. 22	John Linahan .....	Milwaukee.....	Monochromatic..	43.	44.4	.....	Butter.
Mch. 6	Waukesha Butter Co.....	Waukesha.....	Mottled field....	47.	47.7	.....	Renovated butter.
Mch. 6	Waukesha Butter Co.....	Waukesha.....	Mottled field....	46.	47.3	.....	Renovated butter.
Mch. 12	Hotel Meehan.....	Darlington.....	Prismatic.....	50 5	45.9	2.3	Oleomargarine.
Mch. 13	Central Hotel.....	Albany.....	Monochromatic..	46.	46.3	.....	Butter.
Mch. 22	Swift & Co.....	Ashland.....	Prismatic.....	56.	48.	.5	Oleomargarine, colored.

## RENOVATED BUTTER.

The identification of renovated butter has been largely through the use of the microscope, with and without the selenite, by the examination of the physical properties of the material during melting, and by the comparatively low Reichert number generally yielded. It is almost invariably the case that when a small portion of renovated butter is melted in a capsule, the fat will separate sufficiently clear to be examined at once in the refractometer without previous filtration. Upon comparing the sample with genuine butter, the relatively small amount of flocculence due to curd will be readily noticed.

As suggested by Doolittle and Hess, the percentage of nitrogen, showing the relative amount of casein present, is of value.

## CHEESE.

For the examination of cheese official methods have been used. For the quantitative determination of the fat, the use of anhydrous copper sulphate for a desiccating agent as suggested by Short, has been adhered to. The fat for qualitative examination may usually be obtained by melting a few ounces of the chopped cheese enclosed in muslin over a water bath. Sufficient dry fat may readily be obtained for this purpose.

1899.

Mar. 8 Two samples manufactured by Waukesha Butter & Cheese Co. were examined for foreign fats and found to be normal.

1900.

Mar. 31 Sent by Udell & Co., Sheboygan. "Young America" cheese, suspected of being skimmed.

No. 1 contained 33.3 per cent. fat.

No. 2 contained 34.2 per cent. fat.

June 6 Sample left at office, said to contain potato starch. Found to be pure and free from all starch.

## LARD.

In the examination of lard, only the detection of the addition of vegetable oil, such as cottonseed and corn oil, and of paraffine has been attempted. The Zeiss butyro-refractometer has proved

of great assistance in sorting the pure products from the compounds.

For the detection of cottonseed oil, Bacchi's test and Halphen's test have been relied upon. The most satisfactory solutions have been found to be as follows:

**Bacchi's test:** 10cc of oil were boiled for at least fifteen minutes in a test tube in boiling water with 2cc of a reagent prepared as follows: 1 gm. of silver nitrate dissolved in 100cc of 95 per cent. of alcohol and 20cc of ether, to which one drop of concentrated nitric acid was added.

**Halphen's test:** 5cc of oil were mixed with an equal amount each of amyl alcohol and a 2 per cent. solution of sulphur in carbon-di-sulphide, finally heating in brine bath at approximately 110 degrees centigrade for fifteen minutes.

By means of Bacchi's test less than 5 per cent. of cottonseed oil can be detected in a mixture; and by means of Halphen's test less than 1 per cent. can be detected. Bacchi's test also responds to a less degree with corn oil, the presence of which may be confirmed by the following color reaction: 10 drops of oil are dissolved in 10 cubic centimeters of carbon-di-sulphide and one drop of concentrated sulphuric acid added. A violet color will develop after an interval of twenty-four hours.

Nine samples examined and found to be pure.

#### VINEGAR.

##### *Methods of Examination:*

**Acetic Acid:** 20cc are diluted according to color and titrated with normal caustic soda solution, using phenolphthaline as an end reagent.

**Solids and Ash:** 10cc are weighed in platinum and dried upon the water bath and oven at 100° C. Ash is determined by careful ignition of the solids.

**Coloring Matter:** Coal tar colors may be detected by boiling white, washed wool directly in the vinegar, generally without a mordant.

**Caramel:** The residue from 10cc is dissolved in 5cc of water



and 10cc of paraldehyde is added with enough alcohol, drop by drop, to complete solution. The caramel is deposited after standing twelve hours as a brownish, sticky mass, bitter in taste and reducing in reaction.

A more thorough removal of caramel from vinegar, beverages and similar organic mixtures may be made as follows:

Evaporate to dryness, adding methyl alcohol. Extract under a reflux condenser for two hours with methyl alcohol, removing the caramel (or boil out with methyl alcohol where the residue is small). Mix the filtered extract with an excess of amyl alcohol precipitating the caramel. (Fradiss, Analyst 1899, p. 13.)

*Characteristics of Cider Vinegar:* Upon neutralization with caustic soda cider vinegar darkens deeply. A voluminous flocculent precipitate is produced by the addition of a solution of subacetate of lead. The solids of cider vinegar are dark in color and dry in bubbles. Malt solids generally dry smooth and are lighter in color.

Cider extract is optically inactive, but boiled cider extract is levo-rotatory. Glucose-containing substances are readily shown by dextro-rotation. (Doolittle and Hess.)

Analyses of Vinegar

Date.	Sample sent by —	Postoffice.	Sold by —	Sold as —	Acetic acid per ct.	Solids per ct.	Malic acid.	Comments.
1898.								
Oct. 27	J. E. Hankey .....	Trempealeau.	Red Cross V. Co., St. Louis	"Stand'rd Family"	3.81	.33	.....	Col'd dist. con'd.
Oct. 27	J. E. Hankey .....	Trempealeau.	Red Cross V. Co., St. Louis	White wine .....	3.34		.....	Condemned.
Oct. 28	O. W. Lloyd .....	Randolph.		Cider .....	4.35	.26	None .....	Condemned.
1899.								
Jan. 3	C. H. Kinneke .....	Milwaukee...		White distilled .....	6.19		.....	Passed.
Jan. 19	J. B. Smith .....	Janesville.	Barrett & Barrett, Chicago	Cider .....	4.89	1.94	Present .....	Passed
Jan. 19	J. B. Smith .....	Janesville.	H. J. Heinz & Co., Pittsbg	Cider .....	5.25	2.63	Large amt. (Ash .064) .....	Phos. acid abse't.
Apr. 19	B't by N. J. Field .....		Freundenfeldt & Co., Mil.	"Wine vinegar"	8.59		None .....	Condemned.
Apr. 19	H. M. Johnson & Co. ....	Glenwood .....		Cider .....	4.30	1.59	None .....	Condemned.
May 12	C. Snoeyenboo & Son. ....	Baldwin .....	Illinois V. Man. Co., Chic.	Cider .....	4.02	1.17	None .....	Condemned.
May 12	John Anderson .....	Elroy .....		Cider (preserved) .....	.72	3.31	Large amt. ....	Cont salicylic ac.
May 12	B't of Carter & Emm'ns .....	Eagle River. ....	Roundy-Peckham Co., Mil	Cider .....	4.86	2.15	Present .....	Passed
May 25	H. Peterson .....	Eau Claire .....	F. C. Johnson, Kishw'ukee	Cider .....	4.41	1.34	Small amt. ....	Foreign solids.
May 25	Callaghan Bros. ....	Green Bay .....		Cider .....	4.35	2.55	Present .....	Passed.
June 3	Milwaukee Vinegar Co .....	Milwaukee .....	Milwaukee Vin. Co.	Cider .....	4.15	4.11	Small amt. ....	Foreign solids.
July 5	McNulty Bros. ....	Spring Green. ....		Cider .....	3.09		Large amt. ....	Deficient in acid.
July 7	Eau Claire Grocer Co. ....	Eau Claire .....	Sprague, W. & Co., Chic.	Warner's cider .....	4.65	2.47	Present .....	Passed.
July 26	Benson & Williamson. ....	Racine .....		Cider .....	3.48		.....	Condemned.
Sept. 15	P. L. Munger .....	Waupaca .....		Cider .....	2.69	2.46	Slight amt. ....	Condemned.
Sept. 15	Wm. Steinmeyer Co. ....	Milwaukee .....	Genesee Fruit Co.	Cider .....	4.17	2.59	Present .....	Passed.
Sept. 21	Shepard & McFayden. ....	Beaver Dam .....		Cider .....	5.07	.56	None .....	Not cider.
Sept. 21	Shepard & McFayden. ....	Beaver Dam .....		Cider .....	4.77	.44	None .....	Not cider.
Sept. 21	Du Frenne Bros. & Co. ....	Middleton. ....		Distilled 80 grain .....	7.47		.....	75 grain.
Sept. 21	Du Frenne Bros. & Co. ....	Middleton. ....		Distilled 40 grain .....	3.96		.....	Low in acid.
Oct. 5	A. Deitl .....			Cider .....	7.83	.64	None .....	Colored distilled.
Oct. 5	A. Deitl .....			Distilled white .....	8.67		.....	
1899.								
May 20	Thos. Powell .....	Eau Claire...	Burlington Vin. Wks. .... Burlington, Ia.	Guar'nteed rye m't	4.14	.32	.....	Colored. Dis- tilled.
May 20	Felix Derounin .....	Eau Claire .....	Gedney & Co., St. P.	Cider .....	4.26	2.84	None .....	Foreign sugars.
Aug. 26	S. D. Seavey Co .....	W. Superior. ....	Chicago Vin. Wks. ....	Cider .....	8.07	.53	None .....	Caramel color.
Aug. 26	B. Lukwitz .....	La Crosse .....	Marked "A"	Cider .....	4.71	1.61	Present .....	Below standard.
Aug. 26	B. Lukwitz .....	La Crosse .....	Marked "B"	Cider .....	4.35	2.15	Present .....	Passed.
1900.								
Mch. 22	Wm. Steinmeyer Co. ....	Milwaukee .....		Clar'nd'n Pure Cid. ....	4.02	2.55	Present .....	(Ash .34). Passed
Mch. 31	Geo Frey .....	La Crosse .....		White distilled .....	3.57		.....	Below standard.
Mch. 31	State Board of Control .....	Madison .....		White distilled .....	7.51		.....	
Mch. 31	State Boare of Control .....	Madison .....		Cider .....	4.44	2.15	Present .....	Passed.
Apr. 13	Balch & Tragsdorf .....	Eau Claire .....		Cider .....	4.26	2.47	Present .....	(Ash .27).
July 11	Chippewa Val. Mer. Co .....	Chip. Falls .....	Mich. Cider Co., Chicago.	Cider .....	4.17	2.63	Moderate amt .....	C'nt'ins for. s'lids
Aug. 18	Ed. H. Schmidt .....	Menomonie .....		Cider .....	4.35	2.57	Present .....	Passed.
Aug. 18	Ed. H. Schmidt .....	Menomonie .....		Cider .....	4.32	2.00	Present .....	Passed.
Sept. 6	J. Lukwitz .....	La Crosse .....		White distilled .....	4.01		.....	Passed.
Sept. 6	W. & H. Wollschlager. ....	Wonewoc .....	S. A. Low & Co., Freeport.	Cider .....	4.41	2.42	Present .....	Passed.
Sept. 6	W. & H. Wollschlager. ....	Wonewoc .....	S. A. Low & Co., Freeport.	40 Gr. distilled .....	3.72		.....	Below standard.

## HONEY.

1900.

- Feb. 8 A. B. Bishop, Milwaukee. Polarization direct,  $-12.7$ ; after inversion,  $-21$ . Pure.
- Feb. 22 Sent by N. France, Platteville. Polarization direct,  $-10.2$ ; after inversion,  $-16.2$ . Pure.
- July 5 Sent by ———, Milwaukee. Polarization direct,  $-6.8$ ; after inversion,  $-21.6$ . Probably pure.

## MOLASSES.

1898.

- Dec. 12 Sent by McAlpin Grocery Co., Beloit. Adulterated with glucose.
- Dec. 20 Sent by Geo. M. Haire, Weyauwega. Consists almost wholly of glucose syrup.

## SYRUP.

1898.

- Dec. 27 Sample taken by N. J. Field from Nat. Ross, Jr., 263 South Water St., Milwaukee. Barrel branded "Crystal Drips." Consists largely of glucose syrup. Proved to be compound glucose syrup.

1898.

- Oct. Sent by A. H. Elliot, Beloit. Sold as glucose syrup. Polarization direct,  $+122.4$ ; after inversion,  $+109$ . This sample consists of glucose syrup approximating 10 per cent. of cane syrup.
- Sent by A. H. Elliot, Beloit. Sold as sorghum syrup. Polarization,  $+120.6$ ; after inversion,  $+106.8$ . This consists of compound glucose syrup.

1899.

- Feb. 22 Sent by M. S. Meacham, grocer, Beloit. Sold as "Sorghum syrup." Polarization direct,  $+119.2$ ; after inversion,  $+107.4$ . Largely glucose.
- Maple syrup, sent by Home Bros., Milwaukee. Purchased from P. R. Gale, Stowe, Vermont. Polarization direct,  $+1.7$ ; after inversion,  $-18.5$ . Consists largely of invert sugar.
- Same as above. Second lot. Polarization direct,  $+62.6$ ; after inversion,  $-24.2$ . Genuine.

1900.

- Sept. 28 Maple syrup, sample "A," sent by ———. Polarization direct,  $+64.0$ ; after inversion,  $-19.8$ . Pure.
- Maple syrup, sample "B," sent by ———. Polarization  $+36.4$ ; after inversion,  $-18.5$ . This is probably a manufactured imitation, composed in part of invert sugar.

## CANDY.

1900.

July 1 Five samples of candy bought of various retailers in Milwaukee, examined as to coloring matter and sulphites. All were colored with harmless colors.  
Sample purchased of Siebert, Good & Co. contained sulphites. Four were free from such compounds.

## LEMON FLAVORING EXTRACTS.

Date.	Brand.	Sent by	Rotation	Alcohol per cent. by weight.	Comments.
1898					
Oct. 15	"Dieter's Double"...	Bo't of J. Michelstetter.	+ 1.2	51.38	Condemned.
Nov. 23	"Acme".....	Bo't of Wellauer, Hoffman & Co. Mil.	+ 13.1	70.44	Oil 3.7 per ct. Condemned.
Nov. 23	"Standard".....	Bo't of A. Dahlman, Milwaukee.	+ 18.6	86.04	Passed.
Dec. 1	"Cream of Fruit"....	Bo't of Pruden & Son, Racine.	+ 19.2	.....	Oil 5.4 per ct. Tropoeolin color. Passed.
1899					
Jan. 14	"Rival".....	B. Jenks, Berg & W. Whitehall	+ 13.8	76.04	4.2 per ct. oil. Condemned.
Jan. 14	.....	Bo't of John Berg, Ashland.	+ 26.0	88.36	7.8 per ct. oil.
Jan. 19	Van Duzer's.....	Milwaukee Tea Co.	+ 13.7	85.	4.8 per ct. oil. Passed.
Jan. 19	Dieter & Co. "Straight"	.....	+ 14.2	74.8	5.6 per ct. oil. Passed.
May 5	White House, Manfg. by Gould, Wells & Blackburn.	Sold by Purcell Bros., Madison.	.....	76.88	5.6 per ct. oil.
May 5	Wilson Bros., Edgerton.	Bo't of Pat. Regan, Madison.	+ 10.5	70.6	2.9 per ct. oil. Colored.
May 5	Corbin, May & Co....	Bo't of E. W. Hawley & Son, Madison.	+ 10.7	68.35	3.2 per ct. oil. Colored.
May 5	Souder's Regular, (old)	Bo't of H. Breitenbach, Madison.	+ .5	39.8	Tropoeolin color.
May 5	Chapman's Rolling Pin.	Bo't of Aug. Haak, Madison.	.....	70.92	5.4 per ct. oil.
May 12	Cowles Manfg. Co....	Otto Lantz, M'rinette	+ .3	.....	Condemned.
May 4	C. R. Groff's Pure Concentrated.	.....	- 0.2	16.6	Oil none.
May 13	Roundy, Peckham & Co.'s "Pure."	.....	.....	.....	Condemn'd. Contains trace of oil only.
May 12	"Royal Crown".....	Mfg. by Lambert & Lowman.	.....	39.80	Oil tr. Color tropoeolin.
May 12	"Rolling Pin".....	Mfg. by Chapman, Smith & Co.	+ 9.6	79.32	3 per ct. oil. Condemn'd.
May 16	"Clearquill".....	Mfg. by Corbin, May & Co., Chicago.	+ 12.4	.....	Cont. much floating oil.
May 23	Gurnee's Concentrated.	Mfg. by Puhl, Webb & Co.	+ .1	32.25	Condemned.
May 26	"Standard of Excellence."	Mfg. by Mrs. M. A. Gilkey.	0.0	32.3	Oil none. Condemn'd.
May 23	Groff's Absolutely Pure	Everson & Co., Hudson.....	+ 13.3	86.42	4.4 per ct. oil.
May 26	"McMurray's Superfine."	Mfg by Wm. McMurray & Co.....	+ 9.5	69.6	Color tropoeolin. Below standard.
May 24	"Ivory".....	Twohy Mer. Co., West Superior.....	.....	.....	Oil traces only.
May 24	"Twohy's Pure".....	Twohy Mer. Co., West Superior.....	.....	39.	Oil traces only.
June 1	"Excelsior Triple," E. B. Miller & Co..	Williman, Hansen & Co., Ashland.....	+ 9.4	71 25	Oil 2.9 per ct.

## LEMON FLAVORING EXTRACTS—Continued.

Date.	Brand.	Sent by	Rotation	Alcohol per cent. by weight.	Comments.
1899.					
June 1	T. J. Anderson & Co., West Superior.	N. J. Field.....	- .3	37.67	Colored.
June 1	Dieter's Double (old)	J. B. Matthews & Co., Ashland. ....	+ 1.6	57.42	Contained citral.
June 1	Dieter's Double (new).....	O. Jorgensen, Ashland. ....	+ 15.2	86.42	5.7 per ct. oil precipitated
June 1	Gurney's Concentrated.	Moen & Petersen, Chippewa Falls....	+ 3.3	17.92	Contains citral.
June 1	Ivory—Twohy Mercantile Co.	M. J. Fiebelkorn, Ashland.....	+ .1	.....	Traces of oil.
June 1	Pedro - Wright-Clarkson Mer. Co., Duluth, Minn.	Geo. H. Sheldon, West Superior.....	+ .1	22.92	Traces of oil.
June 1	Harold's Cowles Mfg Co.	Geo. J. Neher, Eau Claire.	+ .3	41.7	Traces of oil.
June 1	Dr. Little's Cowles Manfg. Co.	P. P. Mullman, Green Bay.	.....	75.40	3.9 per ct. oil.
June 3	Steele Wedeles Co. Chicago	Paul Findlay.	.....	83.7	5.9 per ct. oil. Tr'poelin col.
June 3	Seneca Chemical Works.	.....	+ .2	19.2	Traces of oil.
June 3	McMurray's Honest Bottle. Wm. McMurray & Co., St. Paul.	.....	- .3	32.0	C'tained citral. Colored.
June 3	Hatch's Honest Bottle. Wm. M'Murray & Co., St. Paul.	.....	- .3	32.0	C'tained citral. Colored.
June 3	Wyborg's Honest Bottle. Wm. McMurray & Co., St. Paul.	.....	- .3	32.0	C'tained citral. Colored.
June 3	Revolution. Wm. Hoyt & Co.	Osceola Merc. Co. Osceola, Wis.	- .1	53.5	Colored. Contained citral
June 3	Standard.....	.....	.0	34.3	Oil, none.
June 3	Bengal.....	.....	+ 11.3	82.73	3.3 per ct. oil.
June 12	National Pure Fruit. National Extract Works, Milwaukee.	Schuller Bros., Milwaukee.	+ 3.7	.....	3.0 per ct. oil.
June 12	National Pure Fruit.	Bo't of National Extract Works.	5.3	72.0	1.8 per ct. Colored.
June 13	Livesay's.....	Bo't of G. Wagner, Milwaukee.	+ 13.7	.....	4.3 per ct. Colored.
June 13	Economy (old). Durand-Casper Co.	.....	.0	37.1	Trace of oil. Colored.
June 13	Special. Schorndorfer & Eberhard.	Bo't of C. Krouse....	.0	37.67	Traces of oil. Colored.
June 13	Pure Perfection. Schorndorf & Eberhard.	Bo't of Hensel Bros. Milwaukee.	+ 10.3	79.7	2.2 per ct. oil.
June 19	L. Adler's.....	Bought of F. Fischer Milwaukee.	+ 13.7	92.4	4.4 per ct. oil.
June 19	Triple.....	Amsterdam Kaffee Co., Milwaukee.	+ 24.2	94.3	7.7 per ct. oil.
June 19	Ware's. C. F. Ware & Co.	Bo't of W. I. Lelselle, Milwaukee.	+ .1	30.4	Trace of oil.
June 19	Economy. A. J. Hilbert & Co.	Bo't of N. Y. Tea Co. Milwaukee.	+ 18.2	89.2	5.9 per ct. oil.
June 19	Mfg. Roundy, Peckham & Co.	Bought of C. Rostad, Milwaukee.	+ 16.7	83.4	5.2 per ct. oil.
June 19	Our Own Lemon.....	Bought of Savage & Sons, Milwaukee.	+ 6.3	65.8	1.4 per ct. oil.
July 7	Purity. Thompson, Taylor & Co.	Eau Claire Grocer Co	+ 20.4	79.7	5.3 per ct. oil. Sugar.
July 8	Ivory.....	Twohy Mer. Co., West Superior.	+ 20.4	75.2	5.6 per ct. oil.
Aug. 4	J. A. Tolman Co.....	Foster Lumber Co....	+ .1	30.5	Oil trace.

## LEMON FLAVORING EXTRACTS—Continued.

Date.	Brand.	Sent by	Rotation	Alcohol per cent. by weight.	Comments.
Aug. 22	Seely's .....	T. H. Johnson, Milwaukee.	+ 3.9	65.4	1.2 per ct. oil. Colored.
Aug. 30	Harrold's. Cowles Manfg. Co.	Rezek Bros., Antigo.	— .2	42.8	Oil trace. Colored.
Aug. 30	Seely's .....	F. H. Johnson, Milwaukee.	+ 3.9	62.8	1.2 per ct. oil.
Aug. 30	Manufg. by J. A. Tolman & Co.	.....	— .2	30.6	Contains citral.
1900.					
Jan. 2	Made by Mrs. Titchener, Racine.	E. Bergwell, Milwaukee.	+ 1.8	.....	Oil traces.
Jan. 2	.....	Bought at Clark's Bazaar, Eau Claire	+ .3	.....	Oil, none.
Mch. 17	Bengal .....	McMurray & Co., St. Paul.	+ .2	34.3	Oil traces.
Apr. 25	Bengal. Manfg. by Griggs, Cooper & Co	.....	+ .4	34.1	Oil traces. Colored.
Sept. 1	Mfg. by E. D. Wilde.	Bought of D. C. Adams, Milwaukee	+ .5	41.1	2 per ct. oil.
Sept. 25	.....	State Board of Control .....	+ 13.2	67.5	3.7 per ct. oil. Naphthol yellow.

## EXTRACTS OF VANILLA.

1899.

- May 24 Sent by Twohy Mercantile Co., West Superior. "Ivory Extract of Vanilla." Contains cumarin. Falsely labeled.
- June 1 Sent in by N. J. Field. Bought of T. J. Anderson Co., West Superior. Cumarin absent. Pure, but weak. "Pure Concentrated Extract Vanilla," manufactured by N. Hosmer, Chicago. Sent by E. P. Curry, Ashland. Contains cumarin. Adulterated.
- June 2 "McMurray Honest Bottle. True Extract Vanilla Compound." Contains cumarin. Not properly labeled. One sample vanilla examined. Pure.

## FRUIT SYRUPS.

The following fruit syrups were intended for use in soda water and purchased of retail druggists.

	Color.	Flavor.	Preservative.
French's Pineapple.....	Natural.....	Natural.....	Benzoic acid.
French's Raspberry.....	Natural.....	Natural.....	Benzoic acid.
French's Orange.....	Natural.....	Natural.....	None.
J. Hungerford Smith's Raspberry.....	Aniline.....	Natural.....	Salicylic acid.
(Made by druggist) Raspberry.....	Natural.....	Natural.....	None.
(Made by druggist) Strawberry.....	Natural.....	Natural.....	None.
Hance Bros. & White Grape.....	Natural.....	Natural.....	Salicylic acid.
Hance Bros. & White Cherry Ripe.....	Natural.....	Natural.....	Salicylic acid.
Hance Bros. & White L. A. W. (Mint).....	Aniline.....	Natural.....	None.

## CREAM OF TARTAR.

1898

- Nov. 22 Sent by Johannes Bros., Green Bay. Manufactured by Santa Clara Manufacturing Co., Omaha, Neb. "Guaranteed Pure." Contains calcium acid phosphate.

1899.

- Sept. 21 Sent by American Candy & Biscuit Co., Green Bay. Purchased at Omaha. Contains calcium acid phosphate and corn starch.

Thirteen other samples of cream of tartar purchased principally from retail druggists have been examined and found to be pure.

## BAKING POWDER.

1898.

- Dec. 1 Tolman's Baking Powder, sent in by Inspector N. J. Field. Alum phosphate powder, improperly labeled.

1899.

- Jan. 3 Eagle Brand Baking Powder. No firm name. Grand Rapids, Mich. Alum phosphate powder, improperly labeled.

- Sept. 21 Sent by E. Blakeslee. "Pure Food Baking Powder." Alum phosphate, not properly labeled.

- Nov. 22 "Pure Food Baking Powder." Sent by Geo. Kroncke, attorney for J. A. Koltcs, Dane, Wis. Alum baking powder, not properly labeled. Suit was commenced by the company to recover payment for this powder, which was returned. At time of trial suit was withdrawn under threat of prosecution.

Four samples examined and found to be pure.

## BUCKWHEAT.

Fifteen samples of buckwheat flour have been examined. Four of these proved to be pure. The adulterated samples are reported below in detail:

- Dec. 28 Sent by M. B. Burlingame, New London. No. 1, pure. No. 2, adulterated with wheat flour.

1899.

- Jan. 10 Sent by John Mahar, Belleville, Wis. Pure.

- Feb. 8 Sent by ———. Contains small amount of wheat flour; probably accidental.

- Mar. 6 Sent by G. L. Miller, Madison. Pure.

- Nov. 1 Sent by Oshkosh Spice Co. Large amount of wheat flour.

- Dec. 14 Washington Milling Co., Eau Claire. Contains wheat middlings.

1900.

- Jan. 3 J. Lammers, Gibbsville, Wis. Contains wheat starch and middlings.

- Jan. 4 Husin Bros. & Timm Co., Plymouth. Contains wheat flour.

## REPORT OF THE WISCONSIN

- Jan. 4 Onino River Mills, Waldo, Wis., "Warranted pure." Contains wheat middlings.
- Jan. 11 Said to be sold by N. J. McIntyre, Eau Claire. Contains wheat flour.

## FLOURS.

- 1899.
- Apr. 19 Corn meal, sent by Mr. Fleming, Madison. Supposed to have caused illness. Found to be pure and normal.
- July 5 Rye flour, sent by J. A. Reick, Hartford, supposed to have caused illness. Found to be pure.
- July 8 Wheat flour, sent by Dr. F. B. Doherty, Crivitz, Wisconsin. Reported to contain arsenic or Paris green. Arsenic was absent. It contained a small amount of a green aniline dye, probably an accidental impurity.
- Oct. 10 Rye flour, sent by C. W. Pinkham, Fond du Lac. Found to be pure.
- 1900.
- Feb. 22 Wheat flour, sent by C. W. Sweeting. Proved to be a low grade wheat flour, but pure.  
Four samples examined and found to be pure.

## MUSTARD.

- 1898.
- Oct. 13 Sent by Johannes Bros., Green Bay. Pure, but colored.
- 1899.
- May 3 Sent by G. A. Kitzman, Rice Lake. Said to be sold by Eau Claire Grocer Co. Adulterated with wheat flour and turmeric.
- July 26 Prepared mustard, sent by Chas. Grasse, Sheboygan. Said to be manufactured by Columbia Mustard Mills, Chicago. Contains starch.  
Four other samples of mustard have been examined and found to be pure.

## PEPPERS.

- 1898.
- Sept. 5 Back Pepper, labeled "Chicago Mills Perfectly Pure Spices," "Best Quality Guaranteed." Contains wheat starch in form of middlings, and charred matter.
- Sept. 5 White Pepper. Same brand as above. Contains wheat starch or middlings.
- 1899.
- Nov. 18 Bought of J. E. Donnelly & Co., Oshkosh. Contained coconut shells.

## ALSPICE.

Sent by C. E. Lewis, Fond du Lac. Adulterated with wheat flour.  
Eight samples of pepper examined and found to be pure.



## CATSUPS.

1898.

Sept. 5 "Sunnyside" Catsup, sent by D. C. Adams, Milwaukee. Salicylic acid absent. Aniline color found.

1900.

June 6 Tomato Catsup, purchased at Fair Store, Madison. Curtis Bros.' "Blue Label." Preserved with salicylic acid.

## GINGER.

Two samples examined and found to be pure.

## LINSEED OILS.

1899.

Sept. 21 Sent by Aug. Schmidt & Co., Madison. Pure.

1900.

June 6 Sent by E. B. Heimstreet, Janesville. No. 1, pure linseed oil. No. 2, contained 31 per cent. paraffine oil.

July 1 Sent by S. Bordwell, Plainfield, Wis. Pure.

Aug. 20 Sent by Oshkosh Paint Co. Passed as pure.

Aug. 21 Sent by I. F. Leppere, Green Bay. Passed as pure.

July 3 Sent by E. B. Heimstreet, Janesville. Sold by American Linseed Oil Co., Cleveland, to Getchell-Lubeck Co., Grand Rapids. Contains 34.2 per cent. mineral oil.

## SUGAR.

1899.

Sept. 23 Sent by Murrish & Sons, Mazomanie, Wis. Sack branded "New York Sugar Refinery." Strongly tinted with ultramarine blue. Otherwise pure.

## GRANULATED SUGAR.

1900.

Jan. 3 Sent by H. J. Grell Butter & Egg Co., Johnson's Creek. Contained 95.5 per cent. sucrose and approximately 4 per cent. of wheat flour. Contamination probably occurred through accident.

Jan. 3 Sent by P. Burbach, Milwaukee. Contained 99.6 per cent. sucrose. Pure.

## MISCELLANEOUS.

- 1899.
- Mar. 25 Yeast, two samples, sent by F. H. Johannes, Green Bay. Manufactured by Fleischman & Co., and A. Bergenthal Co., Milwaukee. Examined for preservatives, none found.
- Mar. 28 G. R. Groff & Co.'s Powdered Lemon Extract. Starch, slightly flavored with oil of lemon. Claimed to be twice as strong as liquid.
- May 4 "Cream Malto," manufactured by Fauerbach Brewing Co. Sent by M. S. Dudgeon, District Attorney, Dane Co. Guaranteed less than 2 per cent. alcohol. Contained 3.86 per cent. by weight.
- June 7 Peil's Cornstarch. Pure.
- June 7 "Natronia" bi-carbonate of soda. Commercially pure.
- July 7 Ice cream, bought by N. J. Field of C. S. Holt, Milwaukee. Preservatives absent.
- Oct. 23 Sample cocoa. Passed.
- 1900.
- Jan. 3 "Diamond" Baking powder. Pure.
- Jan. 3 "Arm and Hammer" saleratus. Pure bi-carbonate of soda.
- Jan. 6 Two samples rice flour, purchased Birkel & Clark, Milwaukee. Both pure.
- Jan. 6 Marunta arrow root starch, purchased of Birkel & Clark, Milwaukee. Pure.
- Feb. 13 Churned lump of fat found in milk by J. E. Amend, Ripon. Proved to be pure fat.
- March 17 Brewster's Royal sweet chocolate. Contained dextrinized wheat starch.
- Apr. 6 Beef, Wine and Iron, manufactured by Spencer Manfg. Co. Bought of Espenhain Dry Goods Co., Nov. 15, 1899. Contained no iron or beef extract.
- Apr. 6 Sample Beef, Wine and Iron. Passed as pure.
- Apr. 21 Beef, Wine and Iron. Bought of Gimbel Bros., Milwaukee. Passed as pure.

## WATER ANALYSES.

Sent by Dr. C. A. Boorman, Health Officer, Centralia, Wis.,  
said to be the tap water of the city supply:

	Parts per 100,000.
Total residue .....	8.70
Mineral residue .....	3.90
Volatile residue .....	4.80
Chlorine .....	.175
N as Nitrates .....	.005
N as Nitrites .....	.0000
Saline ammonia .....	.001
Albuminoid ammonia .....	.015
Residue darkened deeply upon ignition.	

The large amount of volatile mater and albuminoid ammonia shows the water to contain considerable organic matter, but it seems to be a harmless kind, and the water is free from sewage pollution.

Sent from Centralia by C. A. Boorman, M. D., Health Officer;  
source Wisconsin river; collected October 12:

	Parts per 100,000.
Total residue .....	9.50
Mineral residue .....	5.30
Volatile residue .....	4.20
Chlorine .....	.175
Ammonia, saline .....	.0015
Ammonia, albuminoid .....	.015
Nitrites .....	.0000
Nitrates .....	.010
Residue blackened on ignition.	

Unusually pure for river water.

Sent from Arbor Vitae, by H. B. Rosenberry, Health Officer;  
 "driven well, 100 feet from outhouse;" collected October 13:

	Parts per 100,000.
Total residue .....	12.20
Mineral residue .....	6.60
Volatile residue .....	5.60
Chlorine .....	1.050
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.006
Nitrites .....	.0000
Nitrates .....	.140

While the ammonias are low in this water, still the large amount of chlorine and nitrates are sufficient to characterize the water as suspicious. I should, however, hesitate to condemn it on this analysis.

Sent by U. P. Stair, marked "Driven well, 26 feet deep, Fort Atkinson:"

	Parts per 100,000.
Total residue .....	60.00
Mineral residue .....	35.90
Volatile residue .....	24.10
Chlorine .....	2.800
Ammonia, saline .....	.003
Ammonia, albuminoid .....	.009
Nitrites .....	trace
Nitrates .....	.455

Water darkened considerably upon ignition.  
 Exceedingly conspicuous.

While most of the impurity is in an oxidized condition, still I would consider this water dangerous.

Sent by P. G. Gebhard, Stettin, Wis., Marathon county, received Nov. 16, 1898:

	Parts per 100,000.
Total residue .....	34.60
Mineral residue .....	21.80
Volatile residue .....	12.80
Chlorine .....	6.250
Saline ammonia .....	.003
Albuminoid ammonia .....	.017
Nitrogen as nitrates .....	very large amount
Nitrites .....	none

Water darkened slightly upon ignition.

The nitrates were too high to estimate by usual method.

Oct. 28, 1898. Sent by C. P. Bunsen, Health Officer, Galesville:

	Parts per 100,000.
Total residue .....	22.80
Mineral residue .....	18.70
Volatile residue .....	4.10
Chlorine .....	.200
Ammonia, saline .....	.048
Ammonia, albumioid ..	.003
Nitrites .....	.0000
Nitrates .....	.005

I am at loss to account for the large amount of free ammonia shown in this water. The very low chlorine nitrites and nitrates seem to preclude the possibility of the presence of sewage contamination, and I should consider the water pure. Possibly ammonia was previously contained in the bottle.

Sent by Dr. R. C. Merriman, Marinette, Nov. 16, 1898:

	Parts per 100,000.
Total residue .....	86.10
Mineral residue .....	69.60
Volatile residue .....	16.50
Chlorine .....	4.400
Ammonia, saline .....	.026
Albuminoid ammonia .....	.001
Nitrites .....	.0002
Nitrates .....	.010

The free ammonia and chlorine are unusually high. The presence of nitrites is also suspicious. I believe this water to be considerably polluted.

Sent by Dr. Rosenberry, Arbor Vitae, Nov. 18, 1898:

	Parts per 100,000.
Chlorine .....	1.150
Saline ammonia .....	.0015
Albuminoid ammonia .....	.004
Nitrates .....	large amount
Nitrites .....	trace

Impure,

Nov. 18, 1898. Water sent by Dr. F. B. Bentley, Portage, Wis.:

	Parts per 100,000.
Total residue .....	31.80
Mineral residue .....	21.0
Volatile residue .....	10.80
Chlorine .....	1.650
Saline ammonia .....	.006
Albuminoid ammonia .....	.020
Nitrates .....	.070
Nitrites .....	.0005

My opinion is that this water is unfit for use.

Nov. 23, 1898. Water sent from Platteville, marked "City Supply Well No. 1:"

	Parts per 100,000.
Total residue .....	74.30
Mineral residue .....	39.90
Volatile residue .....	34.40
Chlorine .....	5.70
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.006
N. as nitrites .....	.0000
N. as nitrates .....	1.050

Sample No. 2, Hayden's well:

	Parts per 100,000.
Total residue .....	86.00
Mineral residue .....	44.50
Volatile residue .....	41.50
Chlorine .....	5.50
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.005
Nitrates .....	faint trace
Nitrites .....	1.450

The nitrates and chlorine are unusually high in both of these waters. There is not much difference in their purity, both showing much "past pollution," but chemical analysis does not prove them dangerous.

Dec. 9, 1898. Sent by Dr. J. C. Reynolds, Lake Geneva:

	Parts per 100,000.
Total residue .....	52.30
Mineral residue .....	25.10
Volatile residue .....	27.20
Chlorine .....	2.200
Saline ammonia .....	.014
Albuminoid ammonia .....	.006
Nitrites .....	.0005
Nitrates .....	large amount

This water has received considerable contamination in the past, but much of it is completely oxidized. The free ammonia and nitrites will stamp this water as dangerous, however. This together with the least suspicion of its being the cause of trouble should be sufficient to condemn it.

Dec. 23, 1898. Sent by R. S. Pelton, Waupaca. Water No. 1 (white bottle):

	Parts per 100,000.
Total residue .....	22.70
Mineral residue .....	14.40
Volatile residue .....	8.30
Chlorine ..	.200
Ammonia, saline .....	.001
• Ammonia, albuminoid .....	.002
Nitrogen, as nitrites .....	none
Nitrogen, as nitrates .....	.015

This water is usually pure.

Water No. 2: (blue bottle).

	Parts per 100,000.
Total residue .....	23.76
Mineral residue .....	12.80
Volatile residue .....	10.96
Chlorine ..	.175
Ammonia, saline .....	.003
Ammonia, albuminoid .....	.005
Nitrites ..	traces
Nitrates .....	.030

This water shows a slight amount of organic matter, but it does not seem to be from sewage.

Sent by C. A. Caswell, Fort Atkinson, December 23, 1898:

No. 1. Water from 50 ft. well:

	Parts per 100,000.
Chlorine ....	1.250
Ammonia, saline .....	.000
Albuminoid ammonia .....	.002
Nitrites ..	none
Nitrates .....	large amount

No. 2. Water from flowing well:

	Parts per 100,000.
Chlorine .....	.200
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.000
Nitrites ..	.000
• Nitrates .....	.010

Sediment consists mostly of iron oxide in the form of ochre with carbonates of lime and magnesia. The sludge and probably also the water, when it is first drawn, contains sulphureted hydrogen, a gas having a strong and disagreeable odor somewhat like rotten eggs. This is deemed rather beneficial than otherwise, when present in pure water, owing to its contained sulphur.

Sent by F. E. Shaykett, Brandon, collected January 5, 1899, from well ten rods from barnyard:

	Parts per 100,000.
Total residue .....	38.10
Mineral residue .....	30.10
Volatile residue .....	8.00
Chlorine . . . . .	.500
Ammonia, saline .....	.005
Ammonia, albuminoid .....	.004
Nitrates . . . . .	.025
Nitrites .....	.0000

While this water shows a small amount of seepage, I do not consider it dangerously polluted.

April 10, 1899. Three samples of water from A. J. Kreitzer, Sturgeon Bay:

Well No. 1, 120 ft. deep.

	Parts per 100,000.
Total residue .....	29.00
Mineral residue .....	21.40
Volatile residue .....	7.60
Chlorine . . . . .	.250
Ammonia, saline .....	.002
Ammonia, all minoid .....	.005
Nitrates .....	.025
Nitrites . . . . .	.0000

Well No. 2, 125 feet deep.

	Parts per 100,000.
Total residue .....	41.80
Mineral residue .....	25.90
Volatile residue .....	15.90
Chlorine . . . . .	2.325
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.010
Nitrates . . . . .	.025
Nitrites . . . . .	none



Well No. 3, 65 feet deep.

	Parts per 100,000.
Total residue .....	42.40
Mineral residue .....	32.70
Volatile residue .....	9.70
Chlorine . . . . .	2.275
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.009
Nitrates . . . . .	.150
Nitrites . . . . .	none

Water No. 1 seems to be quite pure. Numbers 2 and 3 seem to be slightly polluted with sewage, as shown by the increase in albuminoid ammonia and the large amount of resultant mineral matter, as chlorine and nitrates.

April 25, 1899. Samples of water sent by Dr. F. B. Dodson, Berlin, have been examined with results as follows:

Well Water Polish Par. School.

	Parts per 100,000.
Total residue .....	62.70
Mineral residue .....	41.20
Volatile residue .....	21.50
Chlorine . . . . .	1.450
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.018
Nitrites . . . . .	.0002
Nitrates . . . . .	large amount

Dr. Dodson's Well.

	Parts per 100,000.
Total residue .....	43.70
Mineral residue .....	25.90
Volatile residue .....	17.80
Chlorine . . . . .	3.550
Ammonia, saline .....	.0025
Ammonia, albuminoid .....	.007
Nitrites . . . . .	.0001
Nitrates . . . . .	moderate amount

The water from Dr. Dodson's well is undoubtedly contaminated and dangerous.

The Parochial School well should evidently be condemned.

April 25, 1899. Emil Maurer, Arcadia:

	Parts per 100,000.
Total residue .....	62.70
Mineral residue .....	33.50
Volatile residue .....	29.20
Ammonia, saline .....	.....
Ammonia, albuminoid .....	.....
Chlorine .....	9.400
Nitrites .....	.0004
Nitrates .....	very large amount

Oxides of nitrogen given off upon ignition. This water is badly polluted.

May 5, 1899. Water from well of Chris. Matzke, Juda, Wis.:

	Parts per 100,000.
Total residue .....	31.40
Mineral residue .....	20.20
Volatile residue .....	11.20
Chlorine .....	.225
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.001
N. as nitrites .....	none
N. as nitrates .....	.050

I consider this water pure.

Water from well of C. S. Youngs, Monroe, Wis.:

	Parts per 100,000.
Total residue .....	73.00
Mineral residue .....	38.00
Volatile residue .....	35.00
Chlorine .....	3.450
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.010
N. as nitrites .....	none
N. as nitrates .....	large amount

This water is undoubtedly contaminated.

May 19, 1899. Sample of water sent by Dr. T. J. Redelings, Marinette, Wis., said to be from city water during epidemic of typhoid, and which is derived from Green Bay, the intake being 1200 feet from shore:

	Parts per 100,000.
Total residue .....	16.30
Mineral residue .....	10.50
Volatile residue .....	5.80
Chlorine .....	.450
Saline ammonia .....	.003
Albuminoid ammonia .....	.019
N. as nitrates .....	.050
N. as nitrites .....	none

For Lake Michigan water, this sample shows considerable contamination. The chlorine is nearly double that of the normal Lake Michigan water. The albuminoid ammonia may come from other sources than sewage, but as it distills over rapidly, it probably comes from easily decomposed matter. This, with the chlorine, indicates undoubted contamination.

May 26, 1899. Sample of water sent by Dr. H. B. Johnson, from Tomah, marked "Tap," collected May 23; source unknown:

	Parts per 100,000.
Total residue .....	9.80
Mineral residue .....	6.20
Volatile residue .....	6.30
Chlorine .....	3.25
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.006
Nitrites .....	.0000
Nitrates .....	moderate amount

The water did not darken or emit odor upon ignition. From a chemical standpoint, this water must be considered pure.

June 1, 1899. Samples of water sent by Dr. Chas. Gorst, Health Officer, Baraboo:

No. 1.

	Parts per 100,000.
Total residue .....	31.10
Mineral residue .....	24.10
Volatile residue .....	7.00
Chlorine .....	.250
Ammonia, saline .....	.006
Ammonia, albuminoid .....	.009
N. as nitrites .....	.0001
N. as nitrates .....	.150

## No. 2.

	Parts per 100,000.
Total residue .....	31.30
Mineral residue .....	23.20
Volatile residue .....	8.10
Chlorine . . . . .	.225
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.002
N. as nitrites .....	faint trace
N. as nitrates .....	.050

Water No. 1 shows considerable more organic matter than No. 2, but insufficient to warrant condemnation from a chemical standpoint. The chlorines are usually low in both waters, indicating comparative freedom from sewage.

June 2, 1899. Sent by W. H. Decker, Superior, Wis.:

	Parts per 100,000.
Total residue .....	27.50
Mineral residue .....	20.40
Volatile residue .....	7.10
Chlorine . . . . .	.575
Ammonia, saline .....	.009
Ammonia, albuminoid .....	.009
Nitrites . . . . .	.0000
Nitrates . . . . .	.010

The exceedingly high discoloration and slime are due to deposition of iron, probably caused by a low form of plant life frequently growing in pipes. While this water cannot be considered pure, it is probably not sufficiently impure to be actually dangerous.

June 2, 1899. Samples of water sent by Dr. T. J. Redeling, Marinette:

No. 1, 20 ft. from largest sewer outfall.

	Parts per 100,000.
Total residue .....	18.00
Mineral residue .....	8.80
Volatile residue .....	9.20
Chlorine . . . . .	.475
Ammonia, saline .....	.0015
Ammonia, albuminoid .....	.050
N. as nitrites .....	.0003
N. as nitrates .....	.010

No. 2, near mouth of river, main channel, half way between sewer and intake.

	Parts per 100,000.
Total residue .....	13.70
Mineral residue .....	5.80
Volatile residue .....	7.90
Chlorine . . . . .	.400
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.036
N. as nitrites .....	none
N. as nitrates .....	.015

No. 3, Green Bay, near intake pipe. (Winds favorable for best possible specimen.)

	Parts per 100,000.
Total residue .....	14.70
Mineral residue .....	7.50
Volatile residue .....	7.20
Chlorine . . . . .	.275
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.0185
N. as nitrites .....	trace
N. as nitrates .....	.010

No. 1 is very highly colored and darkened deeply. No. 2, highly colored and darkened deeply. No. 3, light colored and darkened deeply upon ignition. The variation in the chlorine and nitrates shows much current action, but all samples show much pollution.

June 3, 1899. Sample of well water sent by Wm. Wilber, Monroe:

	Parts per 100,000.
Total residue .....	80.50
Mineral residue .....	42.40
Volatile residue .....	38.10
Chlorine . . . . .	1.700
Ammonia, saline .....	.005
Ammonia, albuminoid .....	.004
Nitrites .....	.0002
Nitrates .....	large amount

This water shows considerable oxidized soil leaching, but does not seem to contain much sewage of a dangerous character.

June 17, 1899. Sample of water sent by Dr. Louis Falge, Reedsville, June 8, from well 35 feet deep, 100 feet from privy, 200 feet from barn:

	Parts per 100,000.
Total residue .....	47.20
Mineral residue .....	31.20
Volatile residue .....	16.00
Chlorine .....	2.350
Ammonia, saline .....	.015
Ammonia, albuminoid .....	.019
Nitrites . . . . .	trace only
Nitrates . . . . .	.250

This water shows considerable contamination, apparently from soil leaching, and I consider it dangerous.

June 17, 1899. Sample of water sent by Dr. L. E. Spencer, Wausau:

## No. 1.

	Parts per 100,000.
Chlorine ..	.175
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.019
Nitrites . . . . .	none
Nitrates .....	.070

## No. 2.

Chlorine . . . . .	.200
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.014
Nitrites . . . . .	none
Nitrates . . . . .	.075

## No. 3.

Chlorine ..	.175
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.015
Nitrites . . . . .	none
Nitrates . . . . .	.075

## No. 4.

Total residue .....	9.00
Mineral residue .....	5.80
Volatile residue .....	3.20
Chlorine ..	.150
Ammonia, saline .....	.0015
Ammonia, albuminoid .....	.014
Nitrites . . . . .	faint trace
Nitrates .....	.070

This water is entirely free from sewage contamination, and the bad taste and odor is due to the growth of long vegetable filaments which live upon the iron present in the water.

June 24, 1899. The sample of water sent by Dr. H. M. Morgenroth, of Berlin, taken from well 60 feet from outhouse:

	Parts per 100,000.
Total residue .....	152.10
Mineral residue .....	77.60
Volatile residue .....	74.50
Chlorine .....	16.300
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.016
Nitrites .....	.0002
Nitrates .....	very high

This is such water as might be drawn from a well near a slaughter house or packing house, or where the soil was saturated with salt, nitre and organic matter. The water is unusually impure from a chemical standpoint.

June 24, 1899. Sample of water sent by Dr. T. J. Redelings, Marinette, and marked "No. 1;" collected June 15th:

	Parts per 100,000.
Total residue .....	14.30
Mineral residue .....	7.90
Volatile residue .....	6.40
Chlorine .....	.300
Ammonia, saline .....	.005
Ammonia, albuminoid .....	.011
Nitrites .....	none
Nitrates .....	.030

June 24, 1899. The sample of water sent by Jesse A. Clasen, M. D., from well at Neosho:

	Parts per 100,000.
Total residue .....	30.60
Mineral residue .....	21.20
Volatile residue .....	9.40
Chlorine .....	.450
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.006
Nitrites .....	none
Nitrates .....	moderate amount

This water shows considerable soil leaching, but does not show sufficient pollution from a chemical standpoint to warrant condemnation.

August 3, 1899. Sent by Edgar Colman, Milwaukee:

	Parts per 100,000.
Total residue .....	67.00
Mineral residue .....	51.10
Volatile residue .....	15.90
Chlorine . . . . .	1.200
Ammonia, saline .....	.005
Ammonia, albuminoid .....	.004
Nitrites . . . . .	none
Nitrates. . . . .	.030

This water appears free from sewage contamination.

August 4, 1899. Sample sent by Dr. L. B. Collier, Health Officer, Merrill, Wis., from Merrill waterworks:

	Parts per 100,000.
Total residue .....	13.70
Mineral residue .....	8.00
Volatile residue .....	5.70
Chlorine . . . . .	.250
Ammonia, saline or free .....	.003
Ammonia, albuminoid .....	.019
Nitrogen as nitrates .....	.040
Nitrogen as nitrites .....	none

Backened slightly upon ignition. The water seems to contain vegetable matter but I do not believe it to be polluted with sewage.

August 11, 1899. Two samples of water from Green Bay:

No. 1.

	Parts per 100,000.
Total residue .....	32.70
Mineral residue .....	24.00
Volatile residue .....	8.70
Chlorine . . . . .	1.600
Ammonia, saline .....	.006
Ammonia, albuminoid .....	.003
Nitrates . . . . .	.020
Nitrites . . . . .	none



## No. 2.

	Parts per 100,000.
Total residue .....	30.00
Mineral residue .....	21.00
Volatile residue .....	9.00
Chlorine .....	1.600
Ammonia, saline .....	.004
Ammonia, albuminoid .....	.003
Nitrates .....	.020
Nitrites .....	none

The chlorine is quite high showing the land water but otherwise the waters are quite pure from a chemical standpoint.

August 11, 1899. A bottle of water without label, mark or comment but put up as ordered, apparently, has been tested with results as follows:

	Parts per 100,000.
Total residue .....	42.50
Mineral residue .....	31.80
Volatile residue .....	10.70
Chlorine .....	3.300
Ammonia, saline .....	.114
Ammonia, albuminoid .....	.052
Nitrites .....	.0002
Nitrates .....	very large amount

(Sewage after treatment.)

August 18, 1899. Sample sent from Medford, by E. Le-Sage, M. D. No. 1, 400 feet below sewer inlet. No 2, taken below tannery:

## No. 1.

	Parts per 100,000.
Total residue .....	13.30
Mineral residue .....	7.00
Volatile residue .....	6.30
Chlorine .....	.650
Ammonia, saline .....	.021
Ammonia, albuminoid .....	.023
Nitrogen as nitrites .....	.0008
Nitrogen as nitrates .....	.040

## No. 2.

Total residue .....	17.70
Mineral residue .....	9.90
Volatile residue .....	7.80

	Parts per 100,000.
Chlorine .....	2.050
Ammonia, saline .....	.182
Ammonia, albuminoid .....	.066
Nitrogen at nitrites .....	none
Nitrogen as nitrates .....	.035

No. 1 shows considerable sewage and is not fit to drink. No. 2 is very badly contaminated, and wholly unoxidized. It is certainly dangerous.

Sept. 29, 1899. Sent by Mrs. Mary E. Griffin, Oshkosh, Wisconsin:

	Parts per 100,000.
Total residue .....	41.00
Mineral residue .....	30.30
Volatile residue .....	10.70
Chlorine .....	1.100
Ammonia, saline .....	.002
Ammonia, albuminoid .....	.022
Nitrates very low, less than .....	.050
Nitrites .....	none

I do not believe this water to be unwholesome. It is such water as is frequently found where the gathering area is a semi-fossilized peat body or where there is much peat-like material in the soil. The oil probably comes from the same source.

Sept. 29, 1899. Well water of Kilbourn City, sent by Dr. C. H. Phillips:

	Parts per 100,000.
Total residue .....	8.00
Mineral residue .....	5.40
Volatile residue .....	2.60
Chlorine .....	.150
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.003
Nitrates .....	.100
Nitrites .....	.0001

I believe this water to be fairly safe.

Four samples of water sent by Dr. E. H. Townsend of New Lisbon, all of which were sent in pint, cork-stoppered bottles, leaving insufficient for chemical analysis after the removal of the bacteriological samples. Qualitative tests were made of these waters, with the following results:

J. H. Marsh's well, New Lisbon:

	Parts per 100,000.
Nitrites .....	.0001
Nitrates .....	very heavy
Chlorine .....	large amount

Clark's well, New Lisbon:

Nitrites .....	none
Nitrates .....	very low
Chlorine .....	lowest of samples sent

Gave a precipitate of ferric oxide.

Town well, New Lisbon:

Nitrites .....	.0004
Nitrates .....	very large amount
Chlorine .....	very large amount

School well, New Lisbon:

Nitrites .....	none
Nitrates .....	very large amount
Chlorine .....	large amount

Town well is evidently polluted, and Marsh's well dangerous.

Oct. 7, 1899. Sent by Dr. E. H. Townsend, New Lisbon, Wis.:

Town well:

	Parts per 100,000
Total residue .....	40.00
Mineral residue .....	19.10
Volatile residue .....	20.90
Chlorine .....	3.600
Saline ammonia .....	.006
Albuminoid ammonia .....	.009
N. as Nitrites .....	.0002
N. as Nitrates .....	large amount

This water shows considerable sewage pollution and I believe it to be dangerous

School well:

	Parts per 100,000.
Total residue .....	40.50
Mineral residue .....	27.90
Volatile residue .....	12.60
Chlorine .....	3.350

	Parts per 100,000.
Saline ammonia .....	.001
Albuminoid ammonia .....	.002
N. as Nitrites .....	none
N. as Nitrates .....	large amount

This water shows considerable soil washings but no sewage.

October 26, 1899. Sent by Edgar Colman, Milwaukee:

	Parts per 100,000.
Total residue .....	67.20
Mineral residue .....	57.20
Volatile residue .....	1.150
Saline ammonia .....	.0005
Albuminoid ammonia .....	.0015
Oxygen consumed .....	.060
Nitrites .....	none
Nitrates .....	.030

This water seems to be free from sewage pollution. The growth which probably causes the disagreeable odor and taste is *Crenothrix Kuehniana*.

October 26, 1899. Sent by Robert H. Moth, Supt. Water Works, Kenosha, Wis.:

	Parts per 100,000.
Total residue .....	18.00
Mineral residue .....	14.80
Volatile residue .....	3.20
Chlorine .....	.350
Ammonia, saline .....	.0015
Ammonia, albuminoid .....	.009
Oxygen consumed .....	.155
N. as Nitrates .....	.020
N. as Nitrites .....	.0000

The residue darkened slightly on ignition. Shows slight pollution.

Nov. 10, 1899. Sent by Dr. S. S. Craig, East Troy, Wisconsin:

	Parts per 100,000.
Total residue .....	48.90
Mineral residue .....	33.90
Volatile residue .....	15.00
Chlorine .....	.850
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.004
Nitrates .....	moderate amount
Nitrites .....	faint trace

This water shows a small amount of pollution.

Nov. 10, 1899. Sent by Mr. Florian Lampert, Oshkosh, Wisconsin:

	Parts per 100,000.
Total residue .....	39.90
Mineral residue .....	32.40
Volatile residue .....	7.50
Chlorine .....	1.025
Saline ammonia .....	.009
Albuminoid ammonia .....	.001
Nitrates .....	.020
Nitrites .....	none

I believe this water to be entirely free from any contamination.

Nov. 10, 1899. Samples of water sent by Dr. F. E. Stevens, Bristol, Wis.:

	Parts per 100,000.		
	No. 1.	No. 2.	No. 3.
Total residue .....	62.40	89.40	90.80
Mineral residue .....	37.40	69.10	60.60
Volatile residue .....	25.00	20.30	30.20
Chlorine .....	5.500	3.675	8.275
Ammonia, saline. ....	.0015	.0005	.0005
Ammonia, albuminoid. ..	.008	.019	.007
Nitrates .....	large am't	very large am't	large am't
Nitrites .....	.0002	.0007	.0001

All of these waters are badly polluted with sewage. No. 2 is much the worst.

November 16, 1899. Sent by Joseph Hammel, Medford:

	Parts per 100,000.
Total residue .....	15.10
Mineral residue .....	11.10
Volatile residue .....	4.00
Chlorine .....	.150
Saline ammonia .....	.002
Albuminoid ammonia .....	.004
Nitrites .....	none
Nitrates .....	.060

Pure.

Nov. 25, 1899. Sent by Dr. William Reimer, Health Officer, St. Francis P. O., Milwaukee, Wis. Sample said to be from well on the property of Mr. Bucholz;

	Parts per 100,000.
Total residue .....	54.00
Mineral residue .....	33.40
Volatile residue .....	20.60
Chlorine .....	3.100
Saline ammonia .....	.004
Albuminoid ammonia .....	.0175
Nitrites .....	.0003
Nitrates .....	large amount

In my opinion this water shows considerable sewage contamination, and its use should be discontinued.

Dec. 14, 1899. Samples sent from Horicon. Sample said to be from the well at the schoolhouse; open well, 39 ft. deep, 60 ft. from outhouse; collected by P. F. Klahr:

	Parts per 100,000.
Total residue .....	54.50
Mineral residue .....	34.30
Volatile residue .....	20.20
Chlorine .....	2.150
Ammonia, saline .....	.000
Ammonia, albuminoid .....	.006
Nitrates .....	large amount
Nitrites .....	trace

Sample said to be from drilled well; outhouse 40 ft. distant:

	Parts per 100,000.
Total residue .....	56.00
Mineral residue .....	38.80
Volatile residue .....	17.20
Chlorine .....	3.450
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.007
Nitrates, less than .....	.050
Nitrites .....	none

Neither of these waters seem to be seriously polluted. The one from school house shows considerable soil leaching (past pollution).

Dec. 14, 1899. Sent by Mr. M. F. Fugina, city attorney, Fountain City, Buffalo Co., Wis. The sample of water left with me was insufficient for complete examination. The water contained:

	Parts per 100,000.
Chlorine .....	.150
Nitrates, less than .....	.050
Nitrites .....	none

In an impure water all of these substances would have been present in a larger amount. This is evidently pure.

Dec. 15, 1899. Sample of water from the well of C. Schwarz of Green Bay:

	Parts per 100,000.
Total residue .....	30.50
Mineral residue .....	24.00
Volatile residue .....	6.50
Ammonia, saline .....	.018
Albuminoid, ammonia .....	.001
Chlorine .....	2.050
Nitrates .....	.050
Nitrites .....	.001

While this water shows rather high chlorine and considerable free ammonia, the albuminoid ammonia and nitrates are less than is usual in polluted water. I should consider the water fairly safe.

Dec. 15, 1899. Sample of water sent by D. W. Lynch, M. D., West Bend; said to be from drilled well 60 ft. deep; typhoid on premises:

	Parts per 100,000.
Total residue .....	38.50
Mineral residue .....	26.20
Volatile residue .....	12.30
Chlorine .....	.175
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.007
Nitrates .....	.040
Nitrites .....	none

From a chemical standpoint this water does not seem to be polluted.

Jan. 20, 1900. Sent by E. A. Bass, M. D., Montello, Wisconsin. Sample of water sent me has been analyzed with results as follows:

	Parts per 100,000.
Total solids .....	25.00
Mineral solids .....	15.00
Volatile solids .....	10.00
Chlorine .....	1.200
Saline ammonia .....	.001
Albuminoid ammonia .....	.040
Nitrates .....	large amount
Nitrites .....	.0005

The residue darkened considerably upon ignition and shows considerable organic matter. A large amount of nitrate chlorides and nitrites indicate serious sewage contamination.

Jan. 26, 1900. Sample of water sent me by Frank J. Olle, Kewaunee, Jan. 22nd, marked "Well No. 1, brick well, 24 ft. deep.

	Parts per 100,000.
Total residue .....	111.80
Mineral residue .....	67.50
Volatile residue .....	44.30
Chlorine .....	12.350
Saline ammonia .....	.003
Albuminoid ammonia .....	.015
Nitrites .....	.0025
Nitrates .....	very large amount

Gave brown fumes of oxides of nitrogen upon ignition.

This water is very badly polluted and should be condemned.

Jan. 31, 1900. Sample of water from Barron, Wis., marked "city water," bearing no name of sender:

	Parts per 100,000.
Total residue .....	11.70
Mineral residue .....	7.80
Volatile residue .....	.175
Ammonia, saline .....	.006
Ammonia albuminoid .....	.005
Nitrates, less than .....	.040
Nitrites .....	none

Darkened slightly upon ignition. This is a soft water and apparently not a deep ground water. It contains some vegetable organic matter and seems to be entirely free from sewage pollution and perfectly wholesome.

March 17, 1900. Sent by R. W. Pringle, Supt. of Schools, Appleton, Wisconsin:

	Parts per 100,000.
Total residue .....	20.80
Mineral residue .....	14.80
Volatile residue .....	6.00
Chlorine .....	.450
Saline ammonia .....	.006
Albuminoid ammonia .....	.015
Nitrites .....	trace
Nitrates .....	.035

This water must be regarded as suspicious.



March 23, 1900. Sample of water sent by Dr. C. C. Blanchard of Delavan; taken from the drug store hydrant, water being from reservoir supplied from springs. Three or four outhouses are within ten or fifteen rods of the reservoir:

	Parts per 100,000.
Total residue .....	46.00
Mineral residue .....	31.50
Volatile residue .....	14.50
Chlorine .....	1.250
Ammonia saline .....	.003
Ammonia albuminoid .....	.004
Nitrites .....	none
Nitrates .....	large amount

The residue did not darken upon ignition. This water shows considerable mineral pollution or "past pollution," and enough organic matter to class it as suspicious.

March 31, 1900. Sent by H. O. Arndt, Sheboygan, Wisconsin; city water tap:

	Parts per 100,000.
Total residue .....	16.40
Mineral residue .....	11.60
Volatile residue .....	4.80
Chlorine .....	.300
Saline, ammonia .....	.002
Albuminoid ammonia .....	.012
Nitrites .....	none
Nitrates .....	.045

If the city supply is derived from Lake Michigan, these results show reasonable purity; but this amount of albuminoid ammonia, if present in a ground water, would be sufficient to cause suspicion of contamination.

April 6, 1900. Sample of water from school well, sent direct by Prof. A. J. Austin, Princeton:

	Parts per 100,000.
Total residue .....	23.90
Mineral residue .....	14.30
Volatile residue .....	9.60
Saline ammonia .....	.006
Albuminoid ammonia .....	.009
Chlorine .....	1.525
Nitrites .....	none
Nitrates .....	.030

The water has a very disagreeable odor, and darkened slightly upon ignition.

This water contains considerable organic matter and has an abnormally high chlorine content. As a sub-soil water it must be considered suspiciously impure.

May 29, 1900. Sample of water sent by Dr. G. Harkness, Waukesha, said to be from the Plymouth Rock Spring:

	Parts per 100,000.
Total residue .....	55.90
Mineral residue .....	37.00
Volatile residue .....	18.90
Chlorine .....	2.400
Ammonia, saline .....	.003
Ammonia, albuminoid .....	.009
Nitrites .....	.0002
Nitrates .....	moderately large amount
Oxygen consumed .....	.180

A deep ground water, such as springs are supposed to yield, should contain chlorine less than .500; albuminoid, due only to surface impurities, less than .005; nitrates should be less than .040; nitrites absent.

This water is undoubtedly polluted by sewage, and I would respectfully recommend that its use be discontinued.

May 29, 1900. Sent by Dr. L. B. Collier, Merrill, Wisconsin:

	Parts per 100,000.	
	No. 1.	No. 2.
Total residue .....	10.40	23.10
Mineral residue .....	5.30	9.10
Volatile residue .....	5.10	14.00
Chlorine .....	.800	2.050
Ammonia, saline .....	.088	.0025
Albuminoid ammonia .....	.010	.004
Nitrites .....	.0008	none
Nitrates .....	.060	moderately large amount

Water No. 1 is badly contaminated, but the contamination, as evidenced by the low chlorine, low nitrites, and high free ammonia, is due to the decomposition of vegetable matter.

Water No. 2. As this is said to be from a "drive well," the high nitrates and high chlorine, with the low ammonias and ab-

sence of nitrites, show considerable soil leaching of matter which is probably harmless. It is such a water as is stated to contain oxidized or past pollution.

June 8, 1900. Sent by J. Buckeridge, Health Officer, Beloit:

	Parts per 100,000.
Total solids .....	29.40
Mineral residue .....	21.80
Volatile matter .....	7.60
Chlorine . . . . .	.275
Saline ammonia .....	none
Albuminoid ammonia .....	.008
Nitrites .. . . . .	.0007
Nitrates .....	moderate amount

The quantity of organic matter in this water is exceedingly small, but the presence of such relatively large amounts of nitrites indicate sewage contamination.

July 3, 1900. Samples of water sent by the Health Officer at Stevens Point, marked "City Water, Stevens Point, No. 1 and No. 2:"

No. 1.

	Parts per 100,000.
Total residue .....	8.80
Mineral residue .....	4.00
Volatile residue .....	4.80
Chlorine . . . . .	.100
Saline ammonia .....	.0015
Albuminoid ammonia .....	.0185
Nitrites .. . . . .	none
Nitrates . . . . .	.020

No. 2.

Total residue .....	9.10
Mineral residue .....	4.60
Volatile residue .....	4.50
Chlorine . . . . .	.125
Saline ammonia .....	.008
Albuminoid ammonia .....	.026
Nitrites .. . . . .	none
Nitrates . . . . .	.020

Water No. 1 was quite brownish in color and blackened somewhat upon ignition. No. 2 was slightly brownish and blackened less. Both of these samples showed unusually high albuminoid

ammonia and brownish color, indicating dissolved vegetable matter. The chlorine, absence of nitrites and low nitrates, indicate almost entire freedom from sewage contamination.

July 21, 1900. Sample of water taken from the tap at Taylor Bros.' drug store, Stevens Point, Wis.; collected by C. Von Neupert, Sr., M. D., July 17:

	Parts per 100,000.
Total solids .....	10.10
Mineral solids .....	5.00
Volatile solids .....	5.10
Saline ammonia .....	.0015
Albuminoid ammonia .....	.034
Chlorine . . . . .	.125
Nitrites .. . . . .	none
Nitrates .. . . . .	.030

This water had quite a high color, equal to about two degrees, and upon ignition the solids gave a woody smell. It is my opinion that this water is entirely free from sewage contamination, and that the high amount of organic matter is of vegetable origin, probably from logs. I am confident that the water is wholesome.

Aug. 10, 1900. Samples sent by Dr. F. H. Thebodo, Health Officer, Green Bay:

No. 1, From water tap.

	Parts per 100,000.
Total residue .....	127.50
Mineral residue .....	92.00
Volatile residue .....	35.50
Chlorine . . . . .	30.70
Ammonia, saline .....	trace
Ammonia, albuminoid .....	.008
Nitrites .....	trace
Nitrates .... .	very large amount

No. 2. From water tap.

	Parts per 100,000.
Total residue .....	31.80
Mineral residue .....	23.80
Volatile residue .....	8.00
Chlorine .. . . . .	1.600
Ammonia, saline .....	.0015
Ammonia, albuminoid .....	.005
Nitrites .. . . . .	none
Nitrates .. . . . .	.040

No. 3. From well.

	Parts per 100,000.
Total residue .....	49.00
Mineral residue .....	41.00
Volatile residue .....	8.00
Chlorine .....	.550
Ammonia, saline .....	.014
Ammonia, albuminoid .....	.028
Nitrites ..	none
Nitrates .....	small amount

I can hardly believe that No. 1 and No. 2 are from the same system at one time. No. 2 seems to be fairly pure in spite of high chlorine. No. 1 does not seem to be fit for use. No. 3 seems to be free from sewage but to be derived from soil containing peat and ochre. It is probably not injurious but may give off a very disagreeable odor.

Aug. 20, 1900. Sent by Rev. E. G. Nachtsheim, Milwaukee:

	Parts per 100,000.
Total solids .....	224.00
Mineral solids .....	101.00
Volatile matter .....	123.00
Chlorine ..	13.000
Saline ammonia .....	.0015
Albuminoid ammonia .....	.018
Nitrites ..	trace
Nitrates ..	large amount

This water is unfit for domestic use.

Aug. 21, 1900. Samples of water from Mondovi, taken August 15th, by S. G. Gilman:

No. 1, Gilman's well, taken from pump.

	Parts per 100,000.
Total residue .....	23.70
Mineral residue .....	18.50
Volatile residue .....	5.20
Chlorine ..	.175
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.002
Nitrites .....	faint trace
Nitrates ..	.110

No. 2, from Meyers' flowing well.

	Parts per 100,000.
Total residue .....	12.00
Mineral residue .....	8.30
Volatile residue .....	3.70
Chlorine .....	.125
Ammonia, saline .....	.0005
Ammonia, albuminoid .....	.005
Nitrites ..	none
Nitrates ..	.015

The Meyers' water is exceedingly pure. The water from the Gilman well is comparatively pure, but shows some pollution by the increase in nitrates and the trace of nitrites present. I should judge it to be comparatively safe, however.

Sept. 6, 1900. Sample of water sent from Waupun, said to be from tank supplied from two artesian wells:

	Parts per 100,000.
Total residue .....	36.00
Mineral residue .....	24.50
Volatile residue .....	11.50
Chlorine ..	.600
Saline ammonia .....	.001
Albuminoid ammonia .....	.010
Nitrates ..	.050
Nitrites ..	.0015

The residue blackened somewhat upon ignition. This water does not seem to be seriously polluted, but the albuminoid ammonia and nitrates are higher than is usual in artesian waters and the presence of nitrites is certainly suspicious.

Sept. 8, 1900. Sent by Dr. Thomas Miller, Health Officer, Oconomowoc, Wisconsin:

Artesian Well No. 1.

	Parts per 100,000.
Total residue .....	32.00
Mineral residue .....	22.00
Volatile residue .....	10.00
Chlorine ..	.175
Saline ammonia .....	.0005
Albuminoid ammonia .....	.0025
Nitrites ..	.0020
Nitrates ..	.020

The high nitrites present in this water was due to long standing in the heated season before analysis.

No. 2. Marked "Dead end of main."

	Parts per 100,000.
Total residue .....	32.80
Mineral residue .....	22.40
Volatile residue .....	10.40
Chlorine . . . . .	.150
Saline ammonia .....	.0005
Albuminoid ammonia .....	.003
Nitrates . . . . .	.020
Nitrites . . . . .	.0015

The high nitrites were due to the long standing of this sample, and I should consider this water wholesome.

No. 3. From pump back of bank, much used.

	Parts per 100,000.
Total residue .....	67.20
Mineral residue .....	50.70
Volatile residue .....	16.50
Chlorine . . . . .	5.700
Saline ammonia .....	.112
Albuminoid ammonia .....	.017
Nitrites . . . . .	.003
Nitrates . . . . .	very large amount

This water is badly polluted.

Sept. 8, 1900. Samples of mineral spring water sent for sanitary analysis by Dr. T. H. Thebodo, Green Bay, taken Sept. 4th:

No. 1 Allouez Mineral Spring, sent in original bottle.

	Parts per 100,000.
Total residue .....	110.40
Mineral residue .....	71.50
Volatile residue .....	38.90
Chlorine . . . . .	22.300
Saline ammonia .....	.000
Albuminoid ammonia .....	.0045
Nitrites . . . . .	.0001
Nitrates . . . . .	large amount

The presence of the albuminoid ammonia and nitrites, together with the very high chlorine and nitrates, indicate some contamination. The water should at least be considered suspicious.

## No. 2. Salvator Spring.

	Parts per 100,000.
Total residue .....	40.30
Mineral residue .....	29.20
Volatile residue .....	11.10
Chlorine ..	1.000
Saline ammonia .....	.000
Albuminoid ammonia .....	.0005
Nitrites ..	.0000
Nitrates, less than .....	.040

This water is extremely pure.

Sept. 19, 1900. Sent by L. B. Collier, M. D., Merrill; collected September 10th from tap:

	Parts per 100,000.
Total residue .....	14.00
Mineral residue .....	6.60
Volatile residue .....	7.40
Chlorine ..	.400
Ammonia, saline .....	.001
Ammonia, albuminoid .....	.020
Nitrites ..	none
Nitrates ..	.080

The water seems to contain considerable organic matter, but I believe it to be wholesome. Where filtered water contains high chlorine, nitrites, nitrates, free and albuminoid ammonia, from a chemical standpoint such a water is polluted; still, if the filtration is perfect, pathogenic bacteria may be entirely absent and the water wholesome, owing to the results of the filtration, but still contain all of the chemical elements which would cause us to consider the water as polluted by sewage. Under such circumstances, an opinion based upon chemical analysis should carry little weight.

Sept. 30, 1900. Sent by Mr. J. E. Ames, Bowers, Wisconsin:

	Parts per 100,000.
Total residue .....	98.00
Mineral residue .....	79.30
Volatile residue .....	18.70
Chlorine ..	.550
Ammonia, saline .....	.068
Ammonia, albuminoid .....	.036
Nitrites ..	none
Nitrates, less than .....	.040



This water contains considerable organic matter and a very large amount of mineral matter. I do not believe the pollution to be from sewage, but, in my opinion, when a well water contains albuminoid ammonia in amounts over .015, together with considerable free ammonia, it cannot be used with safety. This water is very impure.

Sept. 30, 1900. Sent by J. K. Schreiner, Westby, Vernon Co., Wis., October 2nd, from cistern filled from well suspected of causing typhoid:

	Parts per 100,000.
Total residue .....	21.80
Mineral residue .....	12.10
Volatile residue .....	9.70
Chlorine ..	.175
Ammonia, saline .....	.0015
Ammonia, albuminoid .....	.001
Nitrites ..	none
Nitrates ..	.080

From a chemical standpoint, this water seems to be unpolluted.

Sept. 30, 1900. Sent by John Dorwin, Durand, Pepin Co., Wis.; said to be from well 103 feet deep:

	Parts per 100,000.
Total residue .....	31.40
Mineral residue .....	21.00
Volatile residue .....	10.40
Chlorine . . .	.150
Ammonia, saline .....	.008
Ammonia, albuminoid .....	.0055
Nitrites ..	none
Nitrates ..	.050

The saline and albuminoid ammonia may be sufficient to characterize the water as suspicious, but ordinarily such a water would be passed as reasonably pure.

## MILK TESTS.

Oct. 11, 1898. Prairie du Chien city peddlers.		Story Factory, Oct. 15, 1898. Evansville.	
% butter fat.		% butter fat.	
Ahrens & Son .....	2.4	R. L. Montgomery .....	4.7
Herman Prey .....	2.4	J. L. Colby & Co. ....	4.5
Wm. Pringle .....	3.0	J. Gerard .....	4.2
Oct. 1, 1898. Mt. Vernon.		F. Leclerc .....	4.0
% butter fat.		R. H. Colby .....	4.9
Karl Colby .....	4.8	W. F. Cleveland .....	4.2
John Kittleson .....	4.0	A. Tisserand .....	4.3
John Way .....	5.4	Wm. Manion .....	4.2
Michael Hobbs .....	4.2	G. Faivre .....	4.9
Martin Hobbs .....	4.2	Mrs. M. Pearnott .....	5.5
Herman Hankel .....	4.5	H. Vanwie & Co. ....	5.4
Mary Messerschmidt .....	5.1	W. Short .....	4.0
Knud Boc .....	5.4	A. Farrell .....	3.1
Sam Wittwer .....	4.0	J. Babler .....	3.0
Henry Rigge .....	4.3	Geo. Faulkes .....	3.8
Henry Rigge (morn) .....	4.3	W. Ace .....	4.0
Wm. Lust .....	4.0	G. R. Colby .....	3.4
Albert Herring .....	4.0	J. Bruling .....	4.0
Oct. 20, 1898. River Falls.		Mrs. L. K. Smith .....	3.8
% butter fat.		D. Connor .....	4.2
John Tedt .....	3.7	F. Hilderbrandt .....	3.7
A. Allen .....	4.0	W. Grady .....	5.0
Aug. Kruske .....	3.5	Pat Grady .....	5.4
Chas. Lange .....	3.8	A. Schonling .....	4.8
Jas. Crinton .....	3.6	F. Payne .....	4.5
G. Wodill .....	3.7	J. Scanland .....	3.6
Frank Hauf .....	4.3	J. Moore .....	4.0
Fred Bowman .....	3.6	W. Fletcher .....	4.5
Pat Hughes .....	4.2	P. Bratvold .....	4.4
E. Zekalla .....	4.5	W. Fitzgerald .....	4.6
Chris Hemling .....	4.6	J. D. Clark .....	4.1
Fred Hinzman .....	4.4	T. J. Hughes .....	4.2
J. Brounk .....	4.2	H. O. Gray .....	4.6
Carl Pahl .....	3.6	J. S. Williamson .....	4.7
John Carlin .....	3.6	B. G. Martin .....	4.5
Mike McDonald .....	3.7	J. Byrnes .....	4.0
Alb. Dehnest (eve) .....	3.8	H. Byrnes .....	4.4
Alb. Dehnest (morn) .....	4.5	J. Hammer .....	4.2
Charlie Miller .....	5.2	O. C. Johnson .....	4.5
Charlie Sewart .....	4.9	Nov. 3, 1898. Milwaukee city milk supply.	
		% butter fat.	
		Adam Noble (morn) .....	4.2
		Adam Noble (night) .....	5.0

	‰ butter fat.
Wm. Groenert (morn) .....	3.8
Wm. Groenert .....	4.2
John Shehan .....	4.0
J. P. Shehan .....	4.9
Mrs. A. Zimmerman .....	4.6
Aug. Mousolt .....	3.6
V. Brant (eve) .....	3.4
V. Brant (morn) .....	3.3
Wm. Kilps (night) .....	3.9
Wm. Kilps (morn) .....	3.6
J. Kowalkowski .....	3.8
J. Heninger (morn) .....	4.0
J. Heninger (night) .....	4.1
Herman Randow (morn) .....	4.6
Herman Randow (night) .....	4.0
Jos. Thiege (night) .....	3.8
Jos. Thiege (morn) .....	4.1
Dreves (morn) .....	3.6
J. Ries .....	4.4
P. W. Schenk .....	3.2
L. Braun, Jr. ....	4.1
J. J. Leach (night) .....	3.5
J. J. Leach (night) .....	3.6
J. J. Leach (morn) .....	4.0
J. J. Leach (morn) .....	4.4
C. T. Ahlert (morn) .....	4.0
A. Gruettner (night) .....	4.1
A. Gruettner (morn) .....	4.0
Geo. Wolff .....	3.3
H. Barloga .....	3.9
H. Lodde .....	3.4
H. Lodde .....	4.4
F. Szebsdat (morn) .....	4.4
A. G. Vogel .....	4.0
A. Karth (eve) .....	3.9
A. Karth (morn) .....	3.6
Herman Baumann, Jr. (morn) ..	4.8
Great Western Dairy .....	3.0

Feb. 1, 1899. Juda.  
Chas. Rheineck, Jr. .... 4.0

March 11, 1898. Deerfield.

S. S. Bui .....	3.4
I. O. Britson .....	3.7
John Redman .....	4.2
N. A. Lee .....	3.5
H. Quammen .....	3.9
K. Schenk .....	4.2
P. Nelson .....	3.6
J. Berge .....	3.3
M. Severson .....	4.4
C. O. Surom .....	4.1
C. Legreid .....	3.8
Mrs. C. Swenson .....	3.9
Ole Johnson .....	3.6

	‰ butter fat.
C. O. Johnson .....	4.2
John Chris Johnson .....	3.8
Andrew Severson .....	3.3
A. Larson .....	3.5
P. B. Grinde .....	3.1
N. Resland .....	4.1
O. Simonson .....	3.3
J. A. Prescott .....	4.0
L. L. Nelson .....	3.1
J. L. Nelson .....	3.4
L. Quammen .....	4.2

March 10, 1899. Samples milk sent by Col. Wheeler, taken by Soldiers' Home, Milwaukee.

	‰ butter fat.
1. ....	2.4
2. ....	2.4

March 11, 1899. Samples milk taken at Soldiers' Home, Milwaukee, by N. J. Field, delivered by Chas. Dana.

	‰ butter fat.
1. ....	4.8
2. ....	2.4
3. ....	2.9
4. ....	3.0
5. ....	2.4
6. ....	2.4
7. ....	5.0
8. ....	3.3
9. ....	2.0
10. ....	2.0

March, 1899. Johnson's Creek.  
Geo. C. Mansfield Co. .... 3.2

March 25, 1899, Oconomowoc.

	‰ butter fat.
A. Stone .....	3.6
W. A. Jones .....	3.3
Peter Hendrickson .....	4.0
E. S. Stone .....	3.8
Aug. Bratz .....	3.6
W. B. Fay .....	4.2
John McDonald .....	4.2
Gus Vogt .....	3.5
Wm. M. Jones .....	4.0
Isaac Denton .....	3.5
W. E. Bailey .....	3.4
F. Rohlf .....	4.0

## REPORT OF THE WISCONSIN

March 31, 1899. Wausau, Wis. City		% butter fat.	
milk supply.		36	3.8
	% butter fat.	37	3.8
C. B. Anderson (Morn)	4.0	38	3.8
Kline Bros. (Night)	3.6	39	3.6
G. W. Witter (Morn)	4.4	40	4.0
G. W. Witter (Night)	4.0	41	4.4
G. W. Witter (Morn)	4.0	42	4.0
Wm. Kasten (Night and Morn)	3.7	43	3.2
Wm. Kasten (Morn)	4.0	44	3.0
J. T. Winkley (Morn)	3.8	45	3.8
Mrs. C. Dreher (Night)	3.2		
Mrs. C. Dreher (Night)	3.4		
G. W. Witter, per Harry Witter (Night)	below standard		
G. W. Witter, per Harry Witter (Morn)	3.7		
Composite test of samples taken at Lake Mills, April 20.			
No.	%		
1	4.4	A. Helpap	3.4
2	3.2	E. Lydow	3.3
3	3.6	E. Platz	3.6
4	3.6	W. Linnes	3.8
5	5.9	C. Trachte	3.4
6	3.3	C. Kuntz	3.7
7	3.4	C. Oesterich	3.9
8	3.6	E. Winters	3.5
9	3.7	J. Strehlman	3.9
10	3.4	C. Strauss	3.0
11	3.3	M. Buchach	3.8
12	4.2	W. Rediske	3.4
13	3.6	F. Schroeder	4.2
14	4.2	G. Yaeck	4.0
15	3.6	Ed. Butler	3.7
16	3.6	F. C. Sydow	3.5
17	3.6	Ed. Schoechert	3.6
18	3.5	John Witte	3.5
19	3.1	U. Schuenke	3.8
20	3.2	L. Ellse	3.4
21	3.6	H. Pitterly	3.6
22	3.4	W. Platz	3.7
23	not enough	J. Knispell	3.8
24	3.4	H. Munzel	3.7
25	3.7	W. Teich	4.2
26	3.9	R. Shimrick	3.9
27	3.4	J. Binzen	4.2
28	3.6	G. Eichmann	3.7
29	3.6	Mrs. G. Rabbach	3.6
30	3.2	G. Rabbach	4.1
31	3.9	W. Ohm	3.6
32	3.6	Mrs. Kopinus	3.4
33	3.9	W. Scherer	3.8
34	not given	J. Rittig	3.8
35	sour	W. Ulm	3.5
		F. W. Lydow	3.6
		C. Stark	3.6
		A. Last	3.2
		H. Petig	4.1
		A. Stark, Sr.	4.2
		H. Schenk	3.4
		G. Sauerhammer	3.1
		F. C. Lehmann	3.5

Johnson Creek, April 24.

% butter fat.

	% butter fat.
F. Kittbach	4.0
H. Razer	3.4
E. Witte	3.5
C. Kirch-erg	3.9
J. Gillis	3.4
F. Borchard	3.1
J. Flath	3.6
A. Stark, Jr.	3.6
H. Gillis	3.4
F. Brueck	3.5
T. Shinnick	4.0
G. Kind	3.8
A. Wilke	3.7
H. Trachte	4.2

Johnson's Creek, April 27.

	% butter fat.
Fred Hamman	3.2
A. Schenke	3.4
A. Feldt	3.0
H. Windorf	3.4
C. Peterman	3.4
A. Komrad	3.8
Fred Alberts	3.7
H. Furnl	3.3
W. Bradlow	3.7
A. Albrecht	3.3
C. Schaller	3.1
F. Klukow	2.9
A. Klukow	3.4
C. Bahling	3.7
L. Wegand	4.0
E. Holne	2.9
H. Barf (churned a little)	4.7
F. Swap	4.0
John Fink	3.3
F. Bailey	3.5
M. Reimel	3.9
C. Else	3.8
L. Else	3.4
A. Last	3.6
M. Beterman	3.1
A. Ambrow	3.5
D. Spangler	3.3
W. Bodel	3.9
G. Bodel	3.2
F. Will	3.4
W. Pasthae	3.6
J. Fisher	3.5
C. Opperp (from can)	3.9
C. Opperp (from spout)	3.9
F. Rabbe	3.5
C. Went	3.1
A. Schoechert	3.3
Fred Wolf	3.9
J. F. Greef (from can)	4.0

	% butter fat.
J. F. Greef (from spout)	4.0
W. Kottke	3.7

Rocendale, May 4.

	% butter fat.
A. Kline	4.0
Wm. Brinkman	4.0
W. D. Ballard	3.6
T. Madigan	4.0
J. Smith, Sr.	3.8
Wm. Deering	4.2
W. Hilsbring	4.1
F. Born	3.9
A. Bierman	3.7
F. Paul	3.5
L. Graves	4.1
Mrs. P. Fisher	3.2
F. Jaegers	3.5
C. Smith	3.6
H. Budahn	3.7
J. Smith, Jr.	3.7
H. Haberkorn	4.2
H. Giffey	3.4
Wm. Barker	3.4
C. Oldenberg	3.6
W. Powell	3.2
Mrs. Gleason	4.8
A. Jagdfelt	3.8
E. Griffith	3.6
C. Smolt	4.0
L. Grant	4.2
Wm. Cowhan	3.8
C. Sizer	4.0
C. Knapp	3.3
Mrs. J. Harvey	4.2
Mrs. M. Harvey	3.3
J. Harvey	3.8
A. Smith	4.1

Reeseville, May 5.

	% butter fat.
C. Baker	3.4
Wm. Klaehn	3.8
W. Klisow	3.6
F. Grossman	4.0
J. Schan	3.7
W. Otto	3.5
Wm. Lenz (eve)	3.1
Wm. Lenz (morn)	3.8
A. Krueger	3.3
A. Drager	3.8
Chris. Kolm (eve)	2.8
Chris. Kolm (morn)	3.7
Wm. Winter	3.6
A. Quady	3.5
A. Kohn	3.0

REPORT OF THE WISCONSIN

	% butter fat.
F. Huebner	3.3
H. Yerdern (eve)	3.1
H. Yerdern (morn)	4.4
C. Kluetzmann (eve)	2.9
C. Kluetzmann (eve)	3.7
Otto Strobel	3.2
Pat Dowd	3.4
F. C. Groening	3.9
T. Wolfgram	3.6
F. Kohls	3.5
Mrs. Louisa Reese	3.0
C. Doering	3.3
M. T. Hasleu (eve)	3.2
M. T. Hasleu (morn)	4.2
C. Hahn	3.0
Herman Krueger	4.0
C. Hasleu	2.8
Mrs. A. Kohls	3.4
Chris. Lee	3.4
M. C. Ready	3.0

Union Creamery Co., Lake Mills, May 16.

	% butter fat.
C. Mundt	3.7
C. Behm	3.6
J. Scheel	3.9
Wm. Ludeman	3.8
A. Arndt	4.4
Wm. Schrank	4.0
L. Meissner	2.8
C. Royce	3.1
Wm. Christ	4.0
Wm. Finder	4.0
L. Eke	3.5
F. Wendt	3.7
Frank Wallace, Sr.	4.0
J. Drager	4.5
W. Punzel	3.4
G. Schultz	3.2
A. Weber	3.9
W. Engsborg	3.8
C. Finger	3.8
A. Nadler	3.5
G. Helpap	3.8
Mrs. Wm. Micheal	4.6
H. Rehbaum	5.0
G. Berkholtz	3.4
W. Schifler	3.9
Frank Wallace, Jr.	3.7
C. Pirwitz	4.0
W. Laschinsky	3.8
J. Crossman	4.1
C. Genrich	3.8
H. Mason	3.3
Reed & Coombe	2.6

	% butter fat.
A. Bartel	4.0
E. Wilson	4.2
G. Rutherford	4.7
M. Rutherford	3.2
F. Stasberg	4.0
A. Thayer	4.0
C. Zanft	4.0
L. Bethke	4.1
R. Alexander	3.4
C. Berger	3.6

Skim milk Sep. No. 1, small amount.  
Skim milk Sep. No. 2, small amount.

May 16, 1899. Samples of milk sent by C. A. Stellmacher, West Rosendale, Wis.

	% fat.
Composite sample	3.6
Single sample	3.8

May 20, 1899. Sent by S. Baehler, Cambria.

No.	%
3	3.5
8 (badly clotted)	2.4

Samples sent by Chris. Yoss, of Wadams Grove, Ill., June 2.

	% butter fat.
Schek	2.9
Beismeyer (churned)	3.2
Brechtel	3.0
Kerow	3.5
Buss	3.7
Wecker (churned)	4.6
Howard (badly churned)	3.9
Bombright	4.3
Elsenbois	3.5
Maister (churned)	3.9
Corning (churned)	2.6
No. 12 soured, no name.	

Milton creamery, June 2, 1899.

	% butter fat.
E. Hundon	3.5
C. Dittberner	3.3
N. Prell	3.5
N. J. Mickleson	4.0
H. Schultz (filthy)	4.0
H. Bentz	4.0
J. Vollmer (filthy)	3.7
G. Bacon	4.0
G. Wenslaff	3.8
V. Prox	4.0
R. Froderich	4.2
F. Froderich	3.4

	% butter fat.
H. Krelfoth	3.1
W. Waterman	3.6
L. Wolfram	4.6
Fred Helle	4.2
Mrs. C. Shoenfeldt	3.9
B. F. Hudson	3.6
A. Craig	3.6
Fred Johnson	3.5
W. Ind	4.0
P. Shroder	3.9
A. M. Miller	3.3
T. Dumphy	3.4
R. McDowell	4.1
Mrs. J. H. Mickleson	3.6
F. Dunn	4.0
A. Willmath	4.2
L. M. Krippner	3.0
D. Maquart	4.0
H. D. Clarke	4.0
T. Vickerman	3.3
W. Vickerman	3.5
J. E. Patterson	4.0
E. A. Holmes	3.6
C. A. Rice	3.8
W. Smith	3.8
W. R. Clelland	4.0
J. C. Crandall	4.2
J. C. Goodrich	4.6

Newark, June 2, 1899.

	% butter fat.
Nels Kingen	below standard
M. Ringen	3.4
A. Ringen	3.6
Mrs. A. Dale	4.0
E. H. Skinner	4.0
W. L. Royce	4.2
L. Mead (churned)	4.0
F. Muret	3.3
F. Murlet	4.2
J. Stokes	3.6
L. Burtin	3.5
J. W. Burtin	3.6
L. Stokes	3.2
K. H. Logan	3.5
O. J. Cox	3.6
John Sullivan	3.9
T. McCaffrey	4.0
O. E. Nelson	4.0
A. Hendrickson	3.8
L. Geist	4.3
D. Bullis	4.7
Mrs. Emery	3.5
J. Fox	4.0
J. Gilbertson	4.0
Wm. Olson	3.9

	% butter fat.
Mr. Johnson	4.2
Ed. Carter	3.7
Effie Gunderson	4.3
Mrs. Pettis	3.6
Amos Cox	4.0
Mrs. Quackenbush	4.3
C. Anderson	3.5
H. Atwood	3.8
F. Klinberg	3.8
Ed. Perkins	3.7
Wm. Quaulman	4.2
H. G. Nelson	3.2
Alf. Perkins	4.1
Ben Hanson (morn)	4.0
John Halom	3.5
C. M. Knutsen	3.4
Ole Bensen	4.0
M. Gilmore	3.2
E. Day	3.6
Mrs. Lottie Kelly	3.5
A. Cole	4.0
John Lynch	3.6
Wm. Buchwald	3.9
Mrs. Junna (churned)	4.0
L. Fossum	3.4
J. K. Naugle (churned)	3.4
N. Munson	3.7
Z. Naugle	4.1
P. Barnum	3.8
E. Hanson	3.5
C. Naugle	3.7
Skim milk No. 1, slight trace.	
Skim milk No. 2, slight trace.	

Monroe, June 6.

	% butter fat.
Geo. Garwell (eve)	3.2
Geo. Garwell (morn)	3.9
J. G. Pfeiffer (eve)	3.3
J. G. Pfeiffer (morn)	4.0
Oscar DeHaven (eve)	3.4
Oscar DeHaven (morn)	3.8
Tred & Thom (eve)	3.2
Tred & Thom (morn)	3.7
C. Griffith (eve)	3.2
C. Griffith (morn)	3.5
Joshua Klassy (morn)	4.0
Joshua Klassy (morn)	4.0
John Thomas (eve)	3.3
John Thomas (morn)	4.2
Jas. Hughes (mixed)	4.1
C. A. Goddard (eve)	3.6
Connor Bros. (eve)	3.3
Connor Bros. (morn)	3.8
Fred Kramer (eve)	3.5
Fred Kramer (morn)	4.2

% butter fat.		% butter fat.	
Henry Elmer (eve) . . . . .	below standard	Mitchell & Price (morn) . . . . .	3.3
Henry Elmer (morn) . . . . .	below standard	C. Parkin . . . . .	4.0
Jos. Elmer (eve) . . . . .	3.9	A. E. Hart (eve) . . . . .	3.3
Jos. Elmer (morn) . . . . .	3.5	A. E. Hart (morn) . . . . .	3.7
West Bend Factory, June 8, 1899.		C. Heyn (eve) . . . . .	3.0
% butter fat.		C. Heyn (morn) . . . . .	3.7
Frank Wittemann . . . . .	3.6	F. Popaney (eve) . . . . .	below standard
John Peters . . . . .	5.8	F. Popaney (morn) . . . . .	3.7
C. Hackbarth . . . . .	3.9	R. Miller . . . . .	3.5
A. Worf . . . . .	4.5	Thomas Hamer (eve) . . . . .	3.4
H. Schalles . . . . .	3.8	Thomas Hamer (morn) . . . . .	4.4
L. Landvatter . . . . .	4.1	Geo. Larmer & Turner (eve) . . . . .	below standard
Matt Ollinger (eve) . . . . .	3.3	Geo. Larmer & Turner (morn) . . . . .	3.8
Matt. Ollinger (morn) . . . . .	4.6	A. S. Moore . . . . .	3.3
Aug. Scherf . . . . .	3.7	Geo. Atherton . . . . .	3.6
Charley Gootter . . . . .	4.0	H. Dinse . . . . .	3.3
S. C. Lang . . . . .	3.8	H. C. Atherton . . . . .	3.5
Frank Eder (eve) . . . . .	3.4	W. M. Rice . . . . .	3.7
Frank Eder (morn) . . . . .	3.8	Wm. Lewis . . . . .	3.2
John Peters . . . . .	3.9	J. H. Putnam (eve) . . . . .	3.3
John Schneider . . . . .	3.7	J. H. Putnam (morn) . . . . .	4.1
D. Thoma (eve) . . . . .	3.6	Wm. Williams . . . . .	3.4
D. Thoma (morn) . . . . .	4.4	T. Bufton . . . . .	3.1
John Bauer (eve) . . . . .	3.6	D. Jones . . . . .	4.0
John Bauer (morn) . . . . .	4.3	R. Smout . . . . .	3.0
John Bauer (eve and morn) . . . . .	4.6	Fred Lockwood (eve) . . . . .	below standard
John Bauer (morn) . . . . .	4.3	Fred Lockwood (morn) . . . . .	4.8
Otto Miller (eve) . . . . .	3.3	John Davis (eve) . . . . .	3.2
Otto Miller (morn) . . . . .	4.1	John Davis (morn) . . . . .	4.5
Matt Hacker . . . . .	3.5	S. Davenport . . . . .	4.0
Herman Quaes . . . . .	3.6	E. Griffen . . . . .	3.0
Wm. Boettcher . . . . .	3.1	O. Atkinson . . . . .	3.6
Paul Thoma . . . . .	3.7	A. Klimesmith . . . . .	3.6
W. Koch (eve) . . . . .	3.0	Wm. Phillips . . . . .	3.3
W. Koch (morn) . . . . .	4.3	H. Eldred . . . . .	3.0
John Worf . . . . .	3.7	G. S. Smout . . . . .	3.1
Frank Kahnt (eve) . . . . .	4.2	C. Steindorf . . . . .	4.0
Frank Kahnt (morn) . . . . .	4.4	Geo. Bump (eve) . . . . .	3.1
Gottlieb Zeiher . . . . .	3.3	Geo. Bump (morn) . . . . .	3.6
Chas. Wagner . . . . .	4.0	R. Crook . . . . .	below standard
John Kobelt . . . . .	3.9	E. Lewis . . . . .	3.1
Matt. Jaeger . . . . .	3.9	F. Ross . . . . .	3.8
Albany, Wis., June 16.		J. Closner (eve) . . . . .	3.1
% butter fat.		J. Closner (morn) . . . . .	4.2
E. Bagley . . . . .	3.8	R. Hamer . . . . .	3.6
Frank Feldt (eve) . . . . .	3.2	John Lewis . . . . .	3.7
Frank Feldt (morn) . . . . .	3.7	A. L. Eldred . . . . .	3.7
S. Connors . . . . .	4.1	J. Bloom (eve) . . . . .	3.0
N. Shaffer . . . . .	3.4	T. Francis . . . . .	3.3
H. Heim . . . . .	3.2	John Caradine . . . . .	3.5
William Hudson . . . . .	3.5	Monroe, Wis., June 17.	
Geo. Peckham (eve) . . . . .	below standard	John Disher . . . . .	3.6
Geo. Peckham (morn) . . . . .	4.2	G. Steinmann . . . . .	3.9
Mitchell & Price (eve) . . . . .	3.0		



	% butter fat.
A. L. Berryman .....	3.6
J. U. Elmer .....	3.9
T. Morris .....	3.7
A. Voegli .....	3.4

Seymour, Wis., June 21.

	% butter fat.
Paul Butter .....	3.7
F. C. Witt (eve) .....	3.3
F. C. Witt (mixed) .....	3.1
F. C. Witt (mixed) .....	4.4
A. Kolleth .....	3.5
A. Lohmann (eve).....	below standard
A. Lohmann (morn) .....	4.4
Ed Powers .....	3.8
John Blohm (eve) .....	3.7
John Blohm (morn) .....	4.4
H. Krauser .....	3.3
John Moore (eve) .....	3.5
John Moore (morn) .....	4.1
John Moser (eve) .....	3.5
Jonn Moser (morn) .....	4.5
Lewis Metzner (eve) .....	3.0
Lewis Metzner (morn) .....	3.8
Levi Munger (eve) ...	below standard
Levi Munger (morn) .....	4.5
L. Arguite .....	4.4
T. B. Little .....	3.8
August Krause (eve) .....	3.3
August Krause (morn) .....	3.7
Ben Liebhaber (eve) .....	3.3
Ben Liebhaber (morn) .....	4.3
Herman Maas (eve) ...	below standard
Herman Maas (morn) .....	3.9
Albert Maas .....	3.3
Geo. Schaumberg (eve) .....	3.4
Geo. Schaumberg (morn) .....	3.9
Herman Heling .....	3.3
Charles Row (eve) .....	below standard
Charles Row (morn) .....	3.2
Phillip Knickel .....	4.6
August Foster .....	3.1
Herman Pautz .....	below standard
M. Sigl .....	3.7
August Maas .....	4.0
Jacob Heagle (eve) .....	3.1
Jacob Heagle (morn) .....	4.1
Wm. Barnetzka (eve) .....	3.1
Wm. Barnetzka (morn) .....	3.5
Anton Henes (eve) .....	3.3
Anton Henes (morn) .....	4.5

Janesville, city milk supply, July 7.

	% butter fat.
R. W. Scott .....	3.0

(Formic aldehyd present.)

	% butter fat.
Will Hughes....	slightly below standard
Champion Dairy .....	4.2
S. W. Gould .....	3.7
(Also bought cream of S. W. Gould, in which no trace of preservaline was found.)	
Chas. Barnes .....	3.2
(Formic aldehyd present.)	
W. H. Hughes .....	3.9
C. Knudson .....	4.1
(Also bought cream of C. Knudson in which no trace of preservaline was found.)	
P. Anderson .....	3.3
Chas. Damrow .....	3.2
George Campbell .....	3.4
E. W. Fisner .....	3.6
(Also bought cream of E. W. Fisher in which no trace of preservaline was found.)	
S. W. Gould .....	3.5
E. E. Bullock .....	4.2
(Also bought cream of E. E. Bullock in which no trace of preservaline was found.)	
W. S. Rice .....	4.1
E. Birkelund .....	3.3
J. F. Bemis .....	4.3
(Also bought cream of J. F. Bemis, in which no trace of preservaline was found.)	

Monroe, Wis., July 10.

	% butter fat.
H. Phelps .....	3.9
Mike Murphy .....	3.3
John Meyer .....	3.5
A. Ackerman (eve) .....	3.5
A. Ackerman (morn) .....	3.9
Frank Preston .....	3.8
John A. Hasse, Jr. (eve) .....	3.0
John A. Hasse, Jr., (morn) .....	4.6
Mrs. E. Weismiller (eve) .....	below standard
Mrs. E. Weismiller (morn) .....	below standard
James Andrew (eve) .....	3.2
James Andrew (morn) .....	4.2
Mrs. F. Lehnher (eve) .....	3.3
Mrs. F. Lehnher (morn) .....	4.0
Wm. Stuboe (eve) .....	3.8
Wm. Stubbe (morn) .....	4.6
R. Matzke .....	3.8
Thomas Smith (eve) .....	3.7
Thomas Smith (morn) .....	3.7
Peter Dolan (eve) .....	4.2
Peter Dolan (morn) .....	3.8

REPORT OF THE WISCONSIN

	% butter fat.
Dan Ryan .....	4.0
K. Crow (eve) .....	3.0
K. Crow (morn) .....	4.6
Geo. Durgin (eve) .....	3.6
Geo. Durgin (morn) .....	3.6
John Stussie (eve) .....	3.8
John Stussie (morn) .....	4.8
John Waru .....	4.2
Ludlow & Grmith .....	3.8
Wm. Klatt .....	3.2
John Brandt .....	3.4
Eugene Thorp .....	3.5
Wm. Wood .....	3.8
E. A. West .....	3.5
A. Heintzieman (eve) .....	3.7
A. Heintzieman (morn) .....	3.8
Wm. Pickett .....	3.5
John Fox (eve) .....	3.1
John Fox (morn) .....	3.8
Pat Grady (eve) .....	3.5
Pat Gray (morn) .....	3.8
John Bueler (eve) .....	3.6
John Bueler (mixed) .....	3.6
John Bueler (morn) .....	3.6
H. Wagner .....	4.2
A. J. Keen (eve) .....	3.3
A. J. Keen (morn) .....	4.2
Ed. Thorpe .....	4.0
G. Lehnher (eve) .....	3.2
G. Lehnher (morn) .....	3.4
Stephen Wood (eve) .....	4.0
Stephen Wood (morn) .....	4.2
Paul Disch (eve) .....	3.2
Paul Disch (morn) .....	3.7
Fred Kolb .....	4.0
O. Walters (eve) .....	3.4
O. Walters (morn) .....	3.7
Thos. Maner .....	3.5

Monroe, Wis., July 15.

	% butter fat.
David Martin .....	3.7
Wm. Schneider .....	3.7
Chris. Stau .....	3.6
Wm. Rosenthal .....	3.7
C. Bayshoffer .....	3.7
C. Tochtorman .....	3.5
John Steiner .....	3.5
Geo. Bechtoldt .....	3.7
Jacob Long .....	3.3
Delos Wells .....	3.8
Wm. Kruger .....	3.4
Joseph Guinter .....	3.2
D. Stauffacher .....	3.3

July 17, 1889. Monroe.

	% butter fat.
J. M. Davis & Son .....	3.8
J. Abraham .....	4.0
Mrs. Julia Sullivan .....	3.8
Peter Kuble .....	3.7
John Brennen .....	4.1
J. C. Davis .....	3.7
Thos. Hauser .....	4.2

July 20, 1899. Minnesota Junction.

	% butter fat.
J. Drager .....	4.8
J. Gritzmacher .....	3.6
J. Hizler .....	3.4
A. Gronert (eve) .....	3.4
A. Gronert (morn) .....	4.3
A. R. Pruger (eve) .....	3.8
A. R. Pruger (morn) .....	4.6
F. Rusch (eve) .....	3.2
F. Rusch (morn) .....	3.7
Fritz Zimmerman .....	4.2
Otto Schrieber (eve) .....	3.6
Otto Schrieber (morn) .....	4.4
Mrs. Laura Pipher .....	3.6
Mrs. John Decker .....	3.6
J. F. Greenfield (eve) .....	2.2
J. F. Greenfield (eve) .....	3.0
J. F. Greenfield (morn) .....	3.8
George Batz .....	3.9
Fred Benewitz (eve) .....	3.0
Fred Benewitz (morn) .....	4.0
Fred Spatholz .....	3.7
Otto Altman (eve) .....	3.0
Otto Altman (morn) .....	4.3

July 26, 1899. Johnson's Creek.

	% butter fat.
Geo. C. Mansfield Co. (sent by) ..	2.5
(Sample churned.)	

July 26, 1899. Red Rock.

	% butter fat.
Jas Kilkelly:	
No. ....	2.8
1. ....	2.8
2. ....	2.8
(Both samples badly churned.)	

July 27, 1899. Emerald.

	% butter fat.
H. C. Peter: .....	3.6
J. Bal .....	3.4
H. Bal .....	4.0
Mrs. Amelia Sutherland .....	3.6
H. Joyce (eve) .....	3.4
H. Joyce (morn) .....	3.5

	% butter fat.
John Dornic .....	3.6
K. Davis (morn) .....	4.9
K. Davis (eve) .....	3.6
Robert E. Lee .....	3.8
James Tricke (eve) .....	3.0
James Tricke (morn) .....	4.9
J. A. Johnson ev(e) .....	3.8
J. A. Johnson (morn) .....	5.6

Aug. 5, 1899. Burlington.

	% butter fat.
T. Carpenter .....	3.7
Fred Sauer .....	4.0
John Thomas .....	3.6
John Swartz .....	3.9
K. Hall .....	3.6
H. Aunsmeier .....	4.2
Thomas Flood .....	4.0
Jacob Sauer .....	3.4
Louis Snyder .....	3.2
Charlie Nelson .....	4.4
Sam Hill .....	3.7
Pat Murphy .....	4.0
George Doeing .....	3.0
Henry Kanautz .....	3.4
Henry Sehale .....	4.1
J. Colbeck .....	3.8

Aug. 7, 1899. Monroe.

	% butter fat.
William Wells .....	4.5
Fred Schroeder .....	3.7
Julius Knoll .....	3.6
Charlie Schriener .....	3.7
Fred Drager .....	4.0
Fred Brunkow, Sr. ....	4.0
Mrs. Donner .....	3.3
David Bringold .....	4.5
P. Painter .....	4.2
Charlie Grabow .....	4.1
Chris. Kapeler .....	3.3
H. Kottenbeutel .....	4.6
Fred, Brunkow, Jr. ....	4.2
M. Miller .....	4.0
E. Vaultman .....	4.2
Chris. Fraustchy .....	4.0
William Schultz .....	4.5
August Brunkow .....	4.5

Aug. 9, 1899. Madison city milk.

	% butter fat.
Fred Koch .....	4.6
B. J. Stevens (v.m. Breet, driver) .....	4.4
Henry Harbort .....	3.6
C. H. Messersmith .....	4.0

	% butter fat.
Spring Farm Dairy (Jos. Pear- son, owner) .....	4.7
Chas. Baker .....	3.5
Hadtfield & Nelson (eve) .....	4.7
Hadtfield & Nelson (morn) .....	5.2
Perry A. Outhouse (morn) .....	5.6
Jake Weber .....	3.9
Lehr Bros. ....	4.4
Puster's Dairy .....	4.6
Alderney Milk Dairy, S. Rotn, owner .....	3.8
Lake Edge Dairy Farm, F. J. Main, owner (eve) .....	6.6
Maple Lawn Dairy, Wm. McKee, owner .....	4.2
L. Schlimgen (eve) .....	5.0
H. H. Davis .....	4.2
Capital City Creamery, Chas. Nel- son, owner .....	5.2
Bruns (eve) .....	4.6
Garden Dairy, Geo. T. Sachs....	3.8
S. T. Brown .....	3.6
S. Marks .....	2.4
Wm. Voss .....	4.6
Carl Gindlach .....	3.1

Aug. 22, 1899. Watertown city milk supply.

	% butter fat.
C. W. Jake .....	5.6
Frank H. Lehmann (eve) .....	9.2
Frank H. Lehmann (morn) .....	4.0
Herman Frederick .....	3.0
A. Marquart (eve) .....	3.8
A. Marquart (morn) .....	4.8
J. J. Dobler (eve) .....	3.1
J. J. Dobler (pasteurized) .....	4.2
Jahnke Creamery Co. ....	4.2
Mrs. Tilla Ruebhausen .....	3.7
Mrs. Tilla Ruebhausen (morn) ..	4.3
Began's Dairy (eve) .....	3.7
Began's Dairy (morn) .....	4.6

Aug. 24, 1899. Rangeline.

	% butter fat.
F. Versolski .....	3.8
Fred Sand .....	3.7
Mike Sonnenwald (eve) .....	3.1
Mike Sonnenwald (morn) .....	3.4
Frank Neiner .....	3.8
M. Dunchek .....	4.0
John Dreier .....	3.5
Aug. Zermuehler .....	3.8
John Tomzyk .....	3.7
Jac. Wese (eve) .....	3.7
Jac. Wese (morn) .....	3.4

## REPORT OF THE WISCONSIN

	% butter fat.		% butter fat.
Jos. Gokey .....	4.7	Chris. Tang e.....	3.9
Frank Weier .....	3.6	Hans Iverson (morn) .....	3.7
Carl Stechmesser .....	3.7	John G. Johnson (morn) .....	3.5
S. Bishop .....	3.5	F. Krenzke (morn) .....	7.0
Henry Short .....	3.6	Chris. Tange (eve) .....	3.5
Chris. Broecker (eve) .....	3.6	J. P. Jensen (morn) .....	3.2
Chris. Broecker (morn) .....	3.4	R. Bowman (morn) .....	3.8
H. Steckmesser (eve) .....	3.1	W. M. Phelps (morn) .....	3.9
H. Steckmesser (morn) .....	4.1	W. M. Phelps (eve) .....	3.7
Carl Retzlaff (eve) .....	4.0	Chas. Eckert .....	2.8
Carl Retzlaff (morn) .....	4.0	N. Johnson .....	2.2
F. Retzlaff (eve) .....	3.8	Nels Johnson .....	7.8
F. Retzlaff (morn) .....	3.8	W. C. Smith & son (morn) .....	3.7
H. Vogl (eve) .....	3.9	Geof. Mautz (eve) .....	3.2
H. Vogl (morn) .....	4.2	S. Knutson (morn) .....	3.4
J. Gates .....	3.0		
Tom Cabot .....	3.6	Aug. 30, 1899. Racine city milks.	
H. Zermeuhleu .....	3.7		% butter fat.
J. Jasper .....	4.6	Chris. Peterson (eve) .....	4.3
Anton Skorch .....	4.5	Chas. Nobles (eve) .....	3.8
Peter Pietroske .....	3.1	R. M. Walker (eve) .....	4.2
Peter Pietroske .....	3.6	W. H. Lenhart (eve) .....	4.7
Alb. Deja .....	3.0	W. H. Lenhart (eve) .....	4.1
		W. G. Nelson (eve) .....	3.1
Aug. 26, 1899. Juda.		Chas. A. Crane (eve) .....	3.4
	% butter fat.	H. Beix (morn) .....	4.1
Wm. Kafer .....	4.0	R. Borman (eve) .....	3.8
Fred Miller .....	3.7	Mrs. M. Pfeiffer .....	3.2
Wm. Baird .....	4.4	W. R. Taylor (eve) .....	3.8
Fred Zuhlke .....	3.6	L. Leonard (eve) .....	3.8
Dan Vance .....	4.0	N. Hanson (morn) .....	4.8
Geo. Heimstreet .....	3.9	N. Hanson (eve) .....	4.2
Albert Keller .....	3.7	G. P. Hershern (morn) .....	4.5
John Michaels (eve) .....	3.6	Chris. Tange (morn) .....	3.9
John Michaels (morn) .....	3.8	Hans Iverson (morn) .....	3.7
T. J. Barmore .....	3.7	J. G. Johnson .....	3.5
Harvey Barmore .....	3.3	F. Krenzke (eve) .....	7.0
		Chris. Tange .....	3.5
Aug. 29. 1899. Racine city milk sup- ply.		J. P. Jensen (morn) .....	3.2
	% butter fat.	Nels Johnson (store) (cream) .....	12.
Chris. Peterson (eve) .....	4.3	R. Borman (morn) .....	3.8
Chas. Nobles (eve) .....	3.8	W. M. Phelps (morn) .....	3.9
R. M. Walker (eve) .....	4.2	W. M. Phelps (eve) .....	3.7
Wm. H. Lehnert (eve) .....	4.7	Chas. Eckert (morn) .....	2.8
Wm. H. Lehnert .....	4.1	N. Johnson (eve) .....	2.2
W. G. Nelson (eve) .....	3.1	N. Johnson (store) .....	7.8
Chas. A. Crane (eve) .....	3.4	W. C. Smith & Sons (morn) .....	3.7
A. Beix (morn) .....	4.1	Geo. Mautz (eve) .....	3.2
R. Bowman (eve) .....	3.8	S. Knudson .....	3.4
Mrs. M. Pfeiffer .....	3.2		
W. R. Taylor (eve) .....	3.8	Sept. 1, 1899. Verona.	
L. Leonard .....	3.8		% butter fat.
Nels Hansen (morn) .....	4.8	Karl Colby .....	4.8
Nels Hansen (eve) .....	4.2	John Kittleson .....	4.0
Geo. P. Hercher (morn) .....	4.5	John Way .....	5.4
		Michael Hobbs .....	4.2

	% butter fat.
Martin Hobbs .....	4.2
Herman Hankel .....	4.5
Mrs. M. Messerschmidt .....	5.1
Knudt Boc .....	5.4
S. Wittwer .....	4.0
Henry Rigge (eve) .....	4.3
Henry Rigge (morn) .....	4.3
Wm. Lust .....	4.0
Albert Herring .....	4.0

Sept. 9, 1899. Monroe.

	% butter fat.
Gus Arthur .....	4.4
Wm. Blasing .....	4.0
Thos. Hyland .....	4.4
Jas. Jones .....	4.3
Ed. McGraw .....	4.5
Jas. Conner .....	4.6
Patrick Flannery .....	4.0
F. Q. Soper .....	4.3

Sept. 12, 1899. Kenosha city milk supply.

	% butter fat.
Frank O'Connor (eve) .....	3.5
Frank O'Connor (morn) .....	4.9
P. Anderson & Sons .....	3.9
John Hartung .....	3.2
A. Sorenson .....	4.1
E. F. Falk (eve) .....	4.2
E. F. Falk (morn) .....	6.2
Wm. Pedley (eve) .....	4.1
Wm. Pedley (morn) .....	4.2
Sorenson Bros. ....	3.1
Peter Barth (eve) .....	3.6
Peter Barth (morn) .....	4.3
H. E. Blackman (eve) .....	3.9
H. E. Blackman (morn) .....	3.8
John Hushold (eve) .....	2.9
Rudolph Henschler (eve) .....	4.4
Rudolph Henschler (morn) .....	6.9
Fred Barter .....	4.0
J. White .....	5.2
Jas. A. Wells (eve) .....	4.7
Jas. A. Wells (morn) .....	4.3
L. H. French .....	5.2
A. B. Pierce .....	4.4
Chas. Hansis .....	3.9
J. T. Irwin .....	4.5

Sept., 19 1899. Sheboygan.

	% butter fat.
G. Koehler (eve) .....	3.8
Wm. Newman (eve) .....	4.5
Fred Firzlafl (eve) .....	3.8
Fred Firzlafl (morn) .....	4.4

	% butter fat.
Wm. Vershulst (eve) .....	3.5
Wm. Vershulst (morn) .....	4.1
Gust Knabe (eve) .....	4.2
Gust Knabe (morn) .....	4.0
Val. Herman (eve) .....	3.6
Val. Herman (morn) .....	4.0
Geo. Paasch (eve) .....	3.7
Geo. Paasch (morn) .....	4.3
W. Brockman (eve) .....	3.7
John De Troy (eve) .....	3.5
John De Troy (morn) .....	3.3
Aug. Kupsch (eve) .....	3.4
F. Torsch (eve) .....	3.3
Val. Herman (eve) .....	3.9
Val. Herman (morn) .....	3.9

Sept. 20, 1899. Branch.

	% butter fat.
Frank Blimel (eve) .....	3.8
Frank Blimel (morn) .....	5.1
Theo. Seiberlich .....	4.3
F. Seidel (eve) .....	3.8
F. Seidel (morn) .....	3.8
F. Kunz (eve) .....	3.2
F. Kunz (morn) .....	3.5
H. Witte .....	3.4
Wm. Wackholk .....	3.4
C. Gruber .....	3.9
Anton Gruber (eve) .....	3.2
Anton Gruber (morn) .....	4.2
J. Strausky (eve) .....	3.0
J. Strausky (morn) .....	3.5
Frank Delsmann .....	4.2
J. Krucek (eve) .....	3.5
J. Krucek (morn) .....	4.2
J. Hutterer (eve) .....	3.0
J. Hutterer (morn) .....	4.2
J. Gruber (eve) .....	below standard.
J. Gruber (morn) .....	4.2
G. Wackholz .....	below standard.
V. Sherl .....	4.2
H. Andholz .....	3.7
H. Mull .....	4.2
F. Wacek (eve) .....	3.4
F. Wacek (morn) .....	4.8
J. Senerbelt (eve) .....	3.0
J. Senerbelt (morn) .....	3.8
John Goldert (eve) .....	3.0
John Goldert (morn) .....	3.0
Geo. Sperl (eve) .....	4.2
Geo. Sperl (morn) .....	4.8
Geo. Steinbrecker (eve) .....	3.4
Geo. Steinbrecker (morn) .....	4.2
W. Fehring .....	3.4
J. Hrudka .....	3.0
F. Jachmstal .....	3.1

Sept. 20, 1899. Waucousta.		% butter fat.			% butter fat.
Fred Ludwig	3.1	G. Longlads	4.4	L. Jaschow	5.0
Aug. Ramton	4.2	J. Thies	4.0	W. M. Rohmlow (eve)	3.8
Aug. Ramton	3.4	W. M. Rohmlow (morn)	4.2	Wm. Maisfield	3.8
Cap. Pinhallo	below standard.	Wm. Maisfield	4.0	Matt Miller (eve)	4.0
C. Rahn (eve)	4.0	Matt Miller (morn)	4.5	N. Reiland (eve)	3.4
C. Rahn (morn)	4.0	N. Reiland (morn)	4.4	J. Bley	4.3
F. Loomis	4.3	Charley Stoldt (eve)	3.6	Charley Stoldt (morn)	4.2
John Sook (eve)	3.8	S. Hoffman (eve)	3.5	S. Hoffman (morn)	5.0
John Sook (morn)	4.2	John Donney (eve)	4.0	M. Sommers	4.4
C. Burnett (eve)	3.4	C. Sommers	4.0	Wm. Schmaling	3.7
C. Burnett (morn)	4.6	Otto Lemke	3.4	John Donney (morn)	4.0
J. Flanigan (eve)	4.4	S. Leith (eve)	below standard.	S. Leith (morn)	4.0
J. Flanigan (morn)	4.5	A. Preston	3.7	W. M. Maisfield (eve)	4.0
F. Ramton	3.8	W. M. Maisfield (morn)	4.5	H. Kerner	4.4
Herman Homburg (eve)	4.0	A. Schebow	4.1	A. Warner	3.0
Herman Homburg (morn)	4.2	A. Fisher	4.2	E. Tecklin (eve)	4.0
Ed. McInrhoe	3.6	E. Tecklin (morn)	4.4	Chris. Fetting	4.2
C. Brautz	4.0	John Calmin	3.4	Fred Kading	4.0
C. H. Allen (eve)	4.6	Fred Kading (eve)	3.8	M. Striegal (morn)	4.2
C. H. Allen (morn)	5.6	M. Striegal (eve)	3.0	Henry Ulman (morn)	4.7
C. Odekirk	4.0	Henry Ulman (eve)	3.6	Peter Gingler	3.6
J. B. Odekirk	4.4	C. H. Ulman	4.6	C. H. Ulman	4.9
Fred Kutz	4.4	F. Prestine	3.9	Barney Stuttgen	4.2
C. Kutz	3.8	Barney Stuttgen (eve)	3.4	John Rehfeld (morn)	4.8
Mike Cavanaugh (eve)	3.2	John Rehfeld (eve)	3.5	F. Rohrback (eve)	4.2
Mike Cavanaugh (morn)	4.9	F. Rohrback (morn)	4.2		
Robt. Rahling	4.2				
Aug. Kutz	3.6				
Sept. 21, 1899. Black Earth.					
		% butter fat.			
Mrs. Mary Lynch	3.1	E. Tecklin (eve)	4.0	E. Tecklin (morn)	4.4
Geo. Booth	4.5	Chris. Fetting	4.2	John Calmin	3.4
T. A. Denny	4.6	Fred Kading	4.0	M. Striegal (eve)	3.8
Charley Lockwood	4.2	M. Striegal (morn)	4.2	Henry Ulman (eve)	3.0
John Lockwood	4.2	Henry Ulman (morn)	4.7	Peter Gingler	3.6
John Cooper	6.0	C. H. Ulman	4.6	C. H. Ulman	4.9
A. Reich	4.6	F. Prestine	3.9	Barney Stuttgen	4.2
E. Maquardt	3.6	Barney Stuttgen (eve)	3.4	John Rehfeld (morn)	4.8
Jas. Lockwood	4.2	John Rehfeld (eve)	3.5	F. Rohrback (eve)	4.2
Geo. Lockwood	5.2	F. Rohrback (morn)	4.2		
Jas. Shields	4.5				
T. Thompson	4.4				
Jas. Hayden	4.0				
Marton Parell	4.3				
John Booth	4.1				
Sept. 27, 1899. Mackville.					
		% butter fat.			
Herman Lecker	3.8	Sept. 29, 1899. Orfordville.			
John Kearn	3.6	% butter fat.			
L. Aleish (eve)	3.6	S. M. Symstgard	4.3	C. Fossum	4.3
L. Aleish (morn)	3.6	John Angen	5.4	Hans Eggen	4.2
C. Rohmlow (eve)	3.4				
C. Rohmlow (morn)	4.8				

	% butter fat.
Hans Amsteadt .....	4.5
Peter Amsteadt .....	5.0
Andrew Enger .....	4.6
Sever Snistegar .....	4.4
Peter Lund .....	4.6
Oscar Fossum .....	4.2
Martin Runnor .....	5.7
Hans Jorland .....	4.9
O. Anderson .....	4.1
Chris Sagen .....	4.6
Peter Sagen .....	5.1

Oct. 23, 1899. Sun Prairie.

	% butter fat.
A. Paulsee .....	5.4

Nov. 9, 1899. Binghamton.

	% butter fat.
Aug. Roll .....	3.8
John Casey .....	3.6
John Casey .....	4.2
C. Benning .....	3.7
J. F. Hinz .....	4.1
Aug. Smith .....	4.6
Geo. Lelsgang .....	4.1
Geo. Lelsgang .....	4.2
Louis Sasman .....	3.8
C. Hoerning .....	5.0
Fred Korth .....	4.2
Wm. Nussbaum .....	4.6
John Tischhauser .....	3.6
Wm. Genske .....	4.1
Geo. Boser .....	3.5
Wm. Wehrman .....	3.8
Lyman Smolk .....	4.3
J. Ruwoldt .....	4.3
J. Ruwoldt .....	4.9
L. Mailahn .....	4.3
Mrs. E. Breidenfeld .....	4.8
John Eickhoff .....	4.3
Chas. Wolf .....	4.0
Wm. Rusch .....	4.0
F. Wisthoff .....	3.8
C. Sellberg .....	4.6
Geo. Welch .....	4.0
Jas. Wing .....	below standard.
Aug. Wehrman .....	3.4
B. Griese .....	4.0

Nov. 16, 1899, Norwalk.

	% butter fat.
A. Ebert .....	5.0
Geo. Bohn (eve) .....	4.3
J. Steinhoff (eve) .....	4.5
A. Bollwan (eve) .....	6.0
Henry Dittman (eve) .....	5.3

	% butter fat.
Frank Seemen (eve) .....	4.7
Frank Seemen (morn) .....	4.4
Michael Zelgler (eve) .....	4.0
I. Hedriche (eve) .....	4.0
I. Hedriche (morn) .....	5.3
Anton Haas (eve) .....	3.3
Anton Haas (morn) .....	4.6
John Steinhoff (eve) .....	4.2
Jchn Flaig (eve) .....	4.5
John Flaig (morn) .....	4.6
Fred Oswald (eve) .....	4.2
Frank Schaller (eve) .....	5.4
Jos. Haas (eve) .....	4.3
John Zelgler (eve) .....	4.0
Henry Berendes .....	4.8
Henry Phuhl (eve) .....	4.9

Dec. 20, 1899. Cambridge.

	% butter fat.
J. Nettum .....	4.4
J. A. Johnson .....	4.2
R. J. Schmidt .....	4.3
Wm. Lester .....	4.0
C. Birkrem .....	4.0
M. Krarlk .....	4.3
H. H. Prescott .....	4.5
E. H. Beahm .....	4.4
O. C. Larson .....	3.9
J. Johnson .....	4.6
J. B. Lind .....	4.4
W. Poppow .....	4.3
Geo. Greene .....	4.4
Mrs. Armstrong .....	4.4
O. Rumph .....	3.3
C. Goodrich .....	5.1
G. Rettsloff .....	4.4
T. Gericke .....	3.9
W. Krouse .....	3.9
A. Grager .....	4.2
J. Gorlicke .....	3.9
A. Erikee .....	5.0
A. Ottow .....	3.5
H. J. West .....	5.0
W. Simdon .....	4.5
C. Simdon .....	3.3
A. Searnes .....	4.2
M. Anderson .....	4.0
C. M. Larson .....	4.2
J. Longhoff .....	3.5
J. M. Krippner .....	5.0

Dec. 22, 1899. Monches.

	% butter fat.
P. Kielser .....	4.1
G. Schodrom .....	3.8
F. Whelan .....	4.0

	% butter fat.		% butter fat.
H. Boets .....	4.9	F. Gage .....	3.6
E. Dempsey .....	4.2	W. Cheney .....	3.9
Wm. Schuch .....	4.1	J. Stewart .....	4.8
S. Good .....	4.0	D. Nelson .....	3.8
H. Webber .....	3.7	P. Olsen .....	3.5
P. Held .....	4.0	V. Arnole .....	3.9
Skim milk .....	0.1	A. Tempson .....	3.5
		M. E. Cusack .....	4.
Jan. 4, 1900. Darien.		C. Fiske .....	4.5
	% butter fat.	J. Turner .....	4.7
W. Blakely .....	4.0	C. McKinney .....	3.6
Mrs. Luideman .....	4.2		
M. O. Brine .....	4.2	Jan. 4, 1900. Manchester.	
Ealstens & Ingersoll .....	3.6		% butter fat.
J. Dodge .....	4.0	Sent by J. F. Groose .....	3.4
A. D. Fallor .....	4.3		
A. Carleson .....	4.2	Jan. 4, 1900. Madison.	
D. Clough .....	4.0		% butter fat.
J. Piper .....	3.8	Sent by Frederick Conover, bought	
J. McCabe .....	3.	of J. P. Woodard .....	4.7
T. Brooks .....	4.7		
G. Randall .....	4.2	Jan. 26, 1900. Lark.	
R. L. Rumsey .....	4.3		% butter fat.
H. C. Bardley .....	3.3	Sent by W. H. Heinrich .....	3.0
P. G. Schneider .....	3.8		
D. Carey .....	3.9	Jan. 31, 1900. Waterloo.	
E. Barrett .....	4.2		% butter fat.
J. Barth .....	4.2	L. Kypke .....	4.1
A. M. McKinney .....	3.8	A. J. Clark .....	4.2
C. Liddle .....	3.4	A. Kuohn .....	4.3
C. B. Jones .....	3.7	C. Hankey .....	4.0
Alex. F. McKinney .....	3.7	P. Fox .....	3.7
Blakey Thern .....	4.	A. Riebe .....	3.9
M. Doundsty .....	4.6	Mrs. Wilt .....	4.6
W. Heffely .....	3.3	A. Christen .....	4.0
C. Gasst .....	4.	W. Jordom .....	3.9
M. O. Connor .....	3.8	F. Sedl .....	4.4
W. Frederick .....	3.4	P. Sheriden .....	4.1
J. N. Whalen .....	3.3	H. Hengler .....	4.3
M. H. Gardner .....	3.	A. Grumald .....	4.1
D. Jayner .....	3.8	B. Lobeo .....	3.8
C. Weed .....	3.8	J. Nolton .....	3.8
C. Sweet .....	3.6	H. Godtschalk .....	4.1
F. Cusack .....	4.4	E. Kennedy .....	4.4
J. Cusack .....	3.8	A. Hebel .....	4.1
Z. V. Dierser .....	3.9	A. Ritzlaff .....	3.8
J. Thorp .....	4.9	A. Fetinger .....	4.4
F. Petters .....	3.8	W. Gramwald .....	4.2
E. Halstens .....	4.	F. Fink .....	4.0
J. Ives .....	4.	H. Blank .....	4.4
J. Welch .....	4.4	F. Doepe .....	3.8
Welch & McCave .....	3.7	A. Doepe .....	4.9
G. Putnam .....	3.7	H. Heideman .....	4.0
J. Long .....	3.2	H. Blesop .....	3.8
P. Long .....	4.	T. Fitzpatrick .....	4.0
J. Steffenheggen .....	4.	W. Detert .....	3.9



	% butter fat.
A. Gue .....	5.2
J. McCormick .....	3.5
F. Tomcha .....	4.4
Wm. Irim .....	3.8
F. Dallman .....	4.5
W. Beerbaum .....	3.9
Skimmed milk .....	1.05

March 13, 1900. Brodhead.

	% butter fat.
A. F. Anderson .....	3.8
W. Sumerfelt .....	4.0
C. Disch .....	3.4
C. M. Mevins .....	3.7
J. Demsey .....	3.6
J. Menor .....	4.6
F. Mevins .....	3.5
D. McNair .....	4.2
F. Stephens .....	5.0
W. White .....	4.8
T. L. Douglass .....	4.0
W. Roesheisen .....	4.6
F. Stabler .....	3.6
B. L. Tallor .....	4.2
J. Kurtz .....	5.7
T. Swan .....	4.0
E. Helm .....	4.2
W. J. Tracy .....	3.6
P. L. Dedrich .....	3.7
F. C. Lewis .....	3.4
A. Smith .....	4.0
R. J. Bucklen .....	3.5
P. W. Kilwine .....	3.6
E. Mitchell .....	3.3
W. Post .....	3.2
A. Wick .....	3.3
D. E. Austin .....	3.8
R. Stabler .....	3.8
G. H. Swanton .....	3.7
A. Zelnow .....	3.6
W. Engebretson .....	3.7
G. St. John .....	3.5
T. Smith .....	4.0
R. J. Day .....	4.4
A. Lyons .....	3.6
W. B. Chase .....	3.8
R. B. Gifford .....	3.9
A. Olin .....	3.6
W. Wraight .....	4.2
W. Borchardt .....	3.4
W. Smita .....	4.3
O. H. Veek .....	3.3
J. S. Richards .....	3.5
M. Jacksop .....	3.8
M. E. Karney .....	3.6
H. Gliese .....	3.7

March 22, 1900. Factory of H. & F. Zacke, Juneau,

	% butter fat.
D. Moulton .....	4.0
B. Summerfelt .....	2.8
F. Butterbrod .....	3.0
Wm. Bartz .....	3.6
E. Eubel .....	3.8
A. Schley .....	3.3
Wm. Scholl .....	3.8
A. Schoefelt .....	3.4
G. Stange .....	3.2
Vat average .....	3.6

March 31, 1900. Alma Center.

Sent by J. Dudley:		
No.		% butter fat.
9. ....		4.4
10. ....		4.4

April 5, 1900. Marshall.

Sent by H. Welner:		
No.		% butter fat.
1. ....		4.4
2. ....		4.2
3. ....		4.4
4. ....		4.2
5. ....		4.5

April 5, 1900. Monroe.

Sent by N. G. Durgin:		
No.		% butter fat.
6. (morn) .....		3.5
7. (eve) .....		3.3

April —, 1900. Alma Center.

Mrs. McSwan .....	2.4
R. Siehler .....	2.8
Joe Adams .....	2.2

April 24, 1900. Hustisford.

	% butter fat.
E. Randall .....	3.0
S. M. Randall .....	3.8
I. Burgess .....	below standard
A. Schuett .....	3.2
A. Ludke .....	3.4
H. Krueger .....	3.3
Wm. Lange .....	2.9
Wm. Schwantco .....	below standard
G. Thomas .....	3.5
O. Krahn .....	3.4
W. H. Jones .....	3.4
S. B. Jones .....	3.3

## REPORT OF THE WISCONSIN

April 27, 1900. Blair.

	% butter fat.
Joe Gilles	4.8
Orrin Terrell	3.2
Wm. Wheaton	3.8
J. Laney	3.0
F. Blencoe	4.2
P. Henderson	3.8
W. Hall	6.0
A. Stoddard	3.8
G. Baker	3.6
J. Schmitt	4.6
M. Schmitt	3.4
B. Judkins	3.6
S. Judkins	3.8
J. Galster	3.5
J. Feyne	3.6
M. Gillis	4.4
Mrs. E. Judkins	4.0
D. Hardison	5.0
E. Stevens	4.0
C. Sichler	3.6
Mrs. McSwain	below standard.
M. Galster	3.6
R. Sichler	below standard.
J. Sichler	3.4
G. Adams	3.4
J. Adams	3.8
M. Lewis	3.8
Wm. Guthrecht	3.4
M. Staffom	3.4
Eben Gornor	3.4
F. Link	4.4
W. Godfrey	3.8
F. Sichler	3.7
C. Casper	4.0
N. Schmitt	4.0
A. M. Merrill	4.0
H. Wagner	3.7
Joe Adams	below standard.
E. S. Northrope	4.0
E. Gornor	4.0
T. Halpin	3.3
G. Staffom	3.2
C. Shankey	3.3
Mrs. M. Staffom	4.2
C. Steffom	3.4
F. Bloom	3.7

April 20, 1900. Merrill city milk.

	% butter fat.
C. Hibbard	4.5
Perry Foster	3.9
H. Fuller	3.8
D. F. Shea	2.6

April 26, 1900. Beaver Dam.

	% butter fat.
G. Obermier	3.8
J. Kleindl	3.3
S. Sadoskie	3.5
A. Rake	3.6
A. Gutgesell	4.8
J. Hopp	3.5
H. Fertl	3.4
A. Genrich	3.7
J. Sadoskie	3.6
Wm. Bedker	4.0
A. Immerfall	3.6
J. Immerfall	3.2
J. Belter	3.8
M. Sadoskie	3.7
J. Fromholz	3.8
J. Slamposke	3.0
H. Bogenschmider	below standard.
C. Bogenschmider	3.4
M. Schachinskie	3.8
T. Glassmann	3.4
G. Yarack	3.3
J. Pobanz	3.6

April 26, 1900. Beaver Dam.

	% butter fat.
H. Bogenschneider	2.5

May 1, 1900. Oak Grove.

	% butter fat.
Alb. Zimmerman	3.7
Alb. Horn	3.6
Aug. Zimmerman	3.4
Aug. Neis	3.6
Aug. Sell	3.1
John Flansch	4.3
Joe Brigowatz	3.0
Wm. Schultz	3.4
C. Mechelburg	3.5
A. Sumnigh	4.3
Aug. Tesch	3.9
Theo. Ohmstedt	3.9
Wm. Weinheimer	3.8
Aug. Koehler	3.6

May 3, 1900. Oak Hill.

	% butter fat.
F. Gilbert	3.4
A. Mules	3.4
C. Ward	3.5
J. Lundt	3.4
O. Romey	3.8
R. Mules	below standard.
C. Thomas	3.5

	¢ butter fat.
Wm. Mules	4.0
S. Smale	3.0
Wm. Stacey	3.8
A. Thompson	3.4
Wm. Pethic, Jr.	3.6
A. Holcomb	3.5
Wm. Jolliffe	3.3
E. J. Jolliffe	3.6
J. Ebbott	3.4
F. Crarer	4.0
M. Sleep	3.9
L. J. Hooper	3.4
W. A. Hooper	3.6
C. Corry	3.3
C. Summers	3.5
Wm. Trewin	4.0
F. Richmond	3.4
J. Rowe	3.8
G. Meach	4.0
J. Mitchell	3.7
F. Mundschar	3.6
H. Grams	3.5
Wm. Pethic	4.0
J. Northey	3.8
W. Thomas	3.5
J. Yoe	4.0
Wm. Box	3.9
J. Leam	3.8
L. B. Hooper	3.4
A. W. Excell	4.0
W. Morris	4.5

May 9, 1900. Melendy Prairie cheese factory, Palmyra.

	¢ butter fat.
R. Charley	3.8
W. A. Peper	3.3
Ed. Hooper	3.4
W. P. Gater	4.2
N. Peardon	3.8
G. Lean	3.5
R. H. Turner	4.2
J. French	3.5
W. Burton	3.6
C. Perny	4.1
Stacy & Hacket	3.8
A. Emery	4.1
F. Vonsnedon	3.1
L. Getmann	4.0
J. Steinholf	3.6
W. Gilbert	3.0
R. Chapmann	3.9
Sherman & Sherman	4.1
Geo. Mann	3.4
W. Pett	3.6

May 24, 1900. Richfield, Wisconsin.

	¢ butter fat.
F. Ferder	3.6
F. Hoelz	3.2
Wm. Lofy	3.7
J. Krohler	3.6
C. Lofy	3.7
M. Janzer	3.8
H. Schulties	3.7
A. Whitmyer	3.6
G. Naob	3.8
J. Weber	3.8
P. Kline	3.2
C. Joetz	3.8
H. Whitmyer	3.7
J. Bargaen	3.4
J. Friez	3.7
H. Gerietz	3.4
N. Schwartz	3.7
J. Gasser	3.6
F. Gern	3.2
Mrs. K. Gallitz	3.2
G. Jacob	3.5
M. Fisher	3.6
J. Bresgin	3.5
N. Smith	3.6
A. Melins (n)	below standard
A. Melins (m)	4.0
F. Baker, Sr., (n)	3.5
F. Baker, Sr. (m)	3.5
F. Baker, Jr. (n)	3.7
F. Baker, Jr. (m)	3.7
Wm. Maurer	4.0
A. Peters	3.9
H. Zhlef (m)	4.2
H. Zhlef (n)	3.4
H. Green	4.0
J. Ranthum	3.3
F. Borchart	3.6
C. Radenback	3.5
F. Whitenburg	4.2
A. Whitenburg	3.6
A. Thilman	3.7
P. Lorsen	3.2

May 31, 1900. Verona, Wisconsin.

	¢ butter fat.
H. Gooth	4.2
J. Stussy	3.4
J. Willmann	3.6
G. Zink	3.9
J. Streiff	4.0
T. Stivert	3.6
Mrs. L. Rolly	3.6
Vat	3.6

June 5, 1900. Berlin Creamery Co., Berlin, Wis.		% butter fat.	
H. Hadal	3.9	F. Freman	3.4
J. Litenki	4.1	E. Hill	4.2
M. Christencrusten	4.0	J. Hall	4.0
A. Loose	4.0	A. Schulter	3.6
E. Moulther	3.6	F. Kheber	3.6
J. Linch	3.2	J. Kinrade	3.5
A. Bebher	4.3	H. Schrader	3.5
E. Rannow	4.2	J. Marnen	3.5
C. Riley	3.7	W. Moullenhauer	3.2
Ed. Anglo	3.8	C. Able	3.9
J. Himan	4.1	J. Strickler	3.5
A. Alberts	4.2	B. Post	4.2
F. Taro	4.6	K. Buttler	3.6
N. L. Steavidson	3.8		
J. Parson	3.6	June 12, 1900. Vance, Wisconsin.	
G. Nagal	3.8		% butter fat.
T. Went	4.4	Ed. Spert	3.8
A. Smith	4.5	A. Wiseman	3.8
C. H. Morris	4.4	Ole Flaten	3.5
J. Worden	4.0	E. Lofing	3.9
John Brisky	4.0	Wm. Boursan	4.1
Kirwin Bros.	3.9	E. Hegen	4.2
R. Martintusky	3.9	J. Oleson	3.7
Joe Maitusky	3.5	F. Boursan	3.7
J. Lentz	3.2	D. Liberty	3.8
W. Kallas	4.0	F. Goodhile	4.0
P. Kallas	3.9	C. Bomheld	4.0
Carl Smith	3.4		
J. Dumpke	4.0	June 14, 1900. Johnson Creek, Wis.	
N. Seaman	3.6		% butter fat.
C. A. Davenport	3.8	N. J. Balsom	3.9
J. Shead	3.1	Wm. Poll	3.4
D. Hearington	3.5	F. Stindt	3.6
C. Armstrong	4.0	A. Beerman	3.4
W. Synot	4.0	A. Kline	3.7
J. Coldman	3.6	A. Hemple	3.6
H. Smick	4.2	W. D. Ballard	3.5
John Bahr	3.8	Wm. Brinkman	3.3
F. Bahr	3.4	J. F. Smith	3.4
Tom Colman	4.1	J. Swanke	3.8
C. Obrine	3.7	Wm. Hillsbring	3.6
T. Curran	3.6	Wm. Deering	4.1
C. Scamall	3.3	F. Paul	3.4
H. Crimmans	3.8	Wm. Rickett	3.4
N. Spoor	3.6	E. Griffith	3.5
D. Wellgards	4.0	E. Genreh	3.2
F. Eagen	4.0	Wm. Jacobs	3.5
A. Hansen	4.0	F. Born	3.6
A. Yonksky	3.5	T. Madigan	4.2
H. Bahr	3.4	J. Glehel	3.5
C. Gibbirt	4.2	U. S. Grant	3.8
G. Bunce	3.4	Wm. Powell	3.2
J. Gilbert	3.4	Mrs. M. Geason	3.7
T. McCullough	3.6	F. Jeger	3.4
		A. Hine	3.6
		L. Draves	3.4

DAIRY AND FOOD COMMISSIONER.

147

	% butter fat.
A. Hahman	3.7
J. Smits	3.8
H. Bedahn	3.5
F. Jadgefelt	3.8
Mrs. J. Havey	3.3
F. Firch	3.6
Wm. Barker	3.6
Phil Smith	4.0
Wm. Kono	3.0
C. Oldenburg	3.5
J. Little	below standard
J. Ford	3.1
C. Smolt	3.6
C. Marchant	below standard
H. O'Neill	5.4
Mrs. H. Havey	4.2
J. Havey	3.6
H. Giffey	4.2
J. Pygall	3.0
H. Harbenkorn	4.4
Wm. Cowhan	4.0
C. Sizer	4.0
C. Knapp	3.2
Wm. Hening	3.6
A. Pynch	3.8

June 15, 1900. Mount Calvary, Wis.

	% butter fat.
John Rein	3.6
C. Rosenbaum	3.8
J. Seibel	3.6
M. Bord	3.8
A. Ihrke	3.2
Wm. Jens	3.2
H. Schmidt	3.5
A. Scherer	3.8
H. Vetter	4.1
J. Engel	3.6
E. Bohn	4.0
G. Soles	3.3
L. Scherer	3.6
G. Reitz	3.2
Wm. Schraider	3.4
F. Rosenbaum	3.7
L. Seibel	3.8
E. Jhrke	3.4
H. Rosenbaum	3.9
F. Fritz	3.6
— Bessey	3.2
— Dolly	4.0
— Brindle	4.4

June 20. Marshall, Wis.

	% butter fat.
M. Smith	3.6
Wm. Hirting	3.5

	% butter fat.
C. Haugenson	3.9
S. Simonson	4.0
L. Nesthus	3.9
P. Kroco	4.2
E. Zabel	3.9
M. Nickleson	3.9
P. Henderson	3.4
T. Story	4.2
Thompson & Co.	3.5
A. Oseveson	3.8
J. Borave	4.0
C. Scalter	3.6
L. Simons	3.9
H. Fedkenhausen	3.8
A. Wollin	3.4
K. Evenson	3.6
O. O. Chorry	3.8
J. B. Bergum	3.6
Wm. Reideman	3.4
S. Geldenhus	4.0
H. Dalby	3.8
G. Doedebner	3.4
W. Quaman	3.3
O. Quale	3.6
J. Hommen	3.8
S. Swenson	3.7
M. Gunderson	3.3
M. Nelson	4.4
S. Bolstead	3.9
J. Henjum	3.6

June 26, 1900. Paris Corners, Wis.

	% butter fat.
H. T. Dixon	3.2
J. Jones	3.0
R. Gatst	4.2
C. Kutzke	3.4
N. Elrickson	3.2
G. Roberts	3.4
R. H. Jones	3.6
C. Tonk	3.0
M Thom	3.1
P. Thom	below standard
Crane Bros.	3.6
W. Andrews	3.2
H. Litzenberg	3.1
W. Schreiber	3.3
W. Penges	below standard
F. Kerrow	3.1
Gunter Bros.	3.3
J. Griffith	3.7
H. Wagner	3.6
R. B. Jones	3.4
Griffith Bros.	3.3
W. Murgtried	3.4
W. Sheen	3.6

## REPORT OF THE WISCONSIN

% butter fat.		% butter fat.	
Jane Williams	3.0	Joe Reede	3.6
J. Slitz	3.3	Ole Edmunds	3.7
M. Fonk	3.0	J. Reiley	3.8
W. Gunter	3.2	Mrs. J. Moon	3.6
C. Garr	3.4	F. Yapp	3.3
M. J. Fonk	3.1	Wm. Buckingham	3.2
Mrs. P. Fonk	3.0	Tom Paul	3.8
F. Stein	3.8	J. Griffith	3.9
W. Williams	3.9	Sam Moon	3.0
July 3, 1900. Plymouth City.			
G. Frelmund	3.4	Mrs. D. Collins	3.4
Fred. Daety	4.0	C. Mathews	3.6
Otto Henze	3.8	J. Higgins	3.8
E. E. Eastman	3.7	T. Buckingham	3.7
H. Ott	3.8	A. Buckingham	3.2
Geo. Meyer	3.6	J. Lynch	3.4
July 9, 1900. Francis Creek, Wis.			
% butter fat.		% butter fat.	
J. Popelar	3.6	T. Stonier	3.6
A. Dvorni	4.0	July 17, 1900. Mishicott, Wis.	
J. Kocl	below standard	% butter fat.	
J. Peroutka	3.6	M. Moas	3.4
J. Novak	3.6	M. Kacanda	4.0
W. Havlick	3.1	Y. Schroder	3.9
M. Weber	3.6	M. Schebesta	3.4
J. Braum	3.0	Jas. Skubal	3.2
J. Kellner	3.3	J. Dose	4.0
J. Slatkey	3.5	T. Hallada	below standard
J. Kurtz	3.8	J. Hallada	below standard
E. Pech	3.8	L. Streese	4.3
A. Shransky	3.4	B. Miller	4.0
W. Peroutka	3.4	J. Dubeck	3.5
J. Swetlek	3.6	E. Klaubuda	3.6
F. Vorel	3.8	J. I. Steber	3.7
M. Noval	3.2	C. Volchart	3.5
M. Flerst	3.4	S. Benclow	3.4
J. Rezek	3.4	M. Gakash	3.4
J. Dvorak	3.6	H. Engelland	4.0
J. Dolezal	3.6	F. Schwartz	3.3
J. Braun	4.0	A. Gesser	4.0
W. Tetera	3.4	Jac. Hallada	3.2
J. Mares	3.4	A. Hallada	
J. Konop	3.6	R. Sapkok	3.4
F. Stastney	3.4	C. Maack	3.6
A. Marek	below standard	J. Schebesta	3.4
F. Steber	below standard	Wm. Kracht	below standard
J. Meyer	3.0	J. Kracht	3.6
F. Duchon	3.8	Mrs. K. Engelland	3.8
July 12, 1900. Dodgeville, Wisconsin.			
% butter fat.		% butter fat.	
W. Williams	3.2	John Knox	3.4
J. Torphy	3.5	Berner Bros.	4.0
July 23, 1900. Antigo city milk.			

	% butter fat.
C. M. Bettie .....	3.8
M. Gresh .....	4.2
John Ogden .....	2.4
Fred Becker .....	3.8

July 24, 1900. Milwaukee city milk.  
% butter fat.

J. J. Leach .....	3.8
L. J. Taffry .....	2.7
D. Reik .....	2.8
Mrs. A. Meier .....	2.5
P. Casper .....	3.4
O. Seigmund .....	3.9
Mrs. Killip .....	5.1
Mrs. M. Zimmer .....	3.7
Mrs. Roeper .....	5.0
F. Witte .....	3.2
A. Kern .....	3.6
Mrs. Mallory .....	3.2
K. Shaughnessy .....	2.5
F. Brunner .....	3.5
A. W. Gumz .....	3.2
Thinnes Bros. ....	4.0
C. E. Krollmann .....	3.2
G. Weick .....	1.8
H. Koerner .....	6.2
D. Butzer .....	7.9

July 25, 1900. Milwaukee city milk.  
% butter fat.

D. Manhoff .....	3.3
Dries Bros. ....	3.0
Mrs. J. Nowetney .....	3.0
Chris. Theis .....	3.6
H. J. Peters .....	3.6
A. Dretzke .....	9.4
Alb. Merritt .....	7.2
B. Ullman .....	4.3
E. D. Mix .....	2.0
F. P. Westline .....	3.9
Benjamin & Brewer .....	3.9
H. Severin .....	3.5

July 31, 1900. Milwaukee city milk.  
% butter fat.

P. Ebeling .....	2.4
M. Stera .....	3.2
S. Leauer .....	4.2
Mrs. Mayhew .....	3.6
Mrs. Westerman .....	4.4
Rich. Romheld .....	3.2
Wm. Holle .....	5.3
Simon Kuth .....	4.0
Mary Larson .....	4.0
John Schmidt .....	3.7
M. Behnisch .....	3.0

	% butter fat.
A. Lewandowsky .....	3.2
G. Wagner .....	3.1
C. H. Kruth .....	3.1
F. A. Rock .....	3.5

August 1, 1900. Milwaukee city milk.

	% butter fat.
V. Lohr .....	3.4
J. Bruemmer .....	3.4
A. Andris .....	4.0
F. Richter .....	3.0
H. C. Keppen .....	3.7
G. E. Meyer .....	3.5
Aug. Schmidt .....	3.8
Fred Hess .....	3.4
C. Dambruch .....	4.2
D. Reik .....	3.7
E. Greiten .....	3.0
J. Haueter .....	3.3
J. L. Bedel .....	4.3
M. Keller .....	2.1
(Sold for skim milk.)	
D. Keller .....	1.8
(Sold for skim milk.)	

August 2, 1900. Milwaukee city milk  
% butter fat.

Mrs. Reinsch .....	3.4
S. A. Washburn .....	3.9
Mrs. Kurth .....	3.6
A. Kinkforth .....	7.5
Mrs. Roudenberg .....	3.2
C. Scheer .....	2.9
B. Jaeger .....	3.4
M. Lambert .....	3.9
H. Goelzer .....	3.5
Mrs. Hirche .....	3.4
F. J. Knoboel .....	3.2

August 3, 1900. Milwaukee city milk.  
% butter fat.

B. M. Davidson .....	4.9
Ernster Bros. ....	3.8
Richfield Dairy Co. ....	4.2
C. Schultz .....	4.4
L. Gampe .....	3.2
Wm. Desmond .....	3.2
Champenny Milk & Cream Co. ....	4.8
E. Kapen .....	3.3

August 7, 1900. Neenah, Wis.

	% butter fat.
Mrs. Wm. Wieckert .....	4.2
Wm. Schwab .....	4.0
F. Windrow .....	3.4
John Garvey .....	3.7

	% butter fat.
L. Pingel .....	3.5
D. Meginnis .....	3.9
Wm. Smith .....	3.8
Wm. Hiller .....	3.5
J. Connor .....	3.8
Fred Smith .....	below standard
Mrs. M. Halley .....	3.6
J. Bailey .....	3.4
M. Woods .....	3.4
Ed. Maas .....	3.3
C. Margut .....	3.4
C. Schottler .....	4.2

## August 15, 1900. Hartford.

	% butter fat.
J. Hummel .....	4.0
A. Brose .....	3.4
M. Braum .....	3.8
N. Thorn .....	3.6
A. Steinke .....	3.5
Wm. Rausch .....	3.5
J. Lacas .....	4.4
A. Boyd .....	3.0
Wm. Sell .....	4.2
J. Schroeder .....	3.4
A. Spaeth .....	3.2
F. Rettler .....	4.0
G. Brown .....	3.8
G. Loos .....	3.0
N. Felten .....	4.0
A. Kadolph .....	3.4
E. Wolf .....	4.2
J. Dorn .....	3.4
C. Schnorrenberg .....	3.2
G. Berendt .....	3.5
J. Marks .....	3.1
O. Genger .....	3.6
G. Buttler .....	3.7
J. Schildt .....	3.4
A. Hetzel .....	3.3
C. Eifert .....	3.2
G. Elgert .....	below standard

## August 14, 1900. Hullsburg.

	% butter fat.
P. Beeker .....	3.8
A. Grahn .....	3.6
P. Fleury .....	3.4
A. Weiss .....	4.0
J. Hagen .....	4.3
E. Sommer .....	4.2
Wm. Schultz .....	4.0
J. Weiss .....	3.9
H. Konroth .....	4.0
Mrs. A. Pfeifer .....	3.9
F. F. Zuandt .....	3.8

	% butter fat.
G. Fisher .....	3.6
C. Zuandt .....	4.0
C. Schott .....	4.2
J. Konroth .....	3.9
J. Christ .....	4.3
H. Metzger .....	3.9
H. Schultz .....	3.6
Mrs J. Rollinger .....	3.8
A. Scharpf .....	4.0
C. Retzlaff .....	3.6
H. Krahn .....	4.0
F. Zirbel .....	3.8
F. Krahn .....	below standard
F. Zuandt .....	4.2
A. Justman .....	4.1
Wm. Zuandt .....	3.4

## August 15, 1900. Monroe.

	% butter fat.
D. Huggen .....	3.2
Wm. Heitz .....	3.3
Wm. Beach .....	3.3
J. Teuscher .....	3.0
G. Tachterman .....	3.6
G. Trickle .....	3.8
Joe Trickle .....	3.2
Jesse Trickle .....	3.5
Joe Land .....	3.3
John Martin .....	3.8
F. Norphen .....	4.2
H. Keil .....	3.8
A. Stubbl .....	3.8
D. Timmans .....	3.5

## August 16, 1900. Monroe.

	% butter fat.
Mrs. L. Lehnher .....	4.0
R. Lust .....	4.4
J. Andrews .....	3.7
T. Smith .....	3.8
G. Ott .....	4.2
M. Stuessie .....	3.4
G. Lehnher .....	4.4
H. Phelps .....	4.0
J. Meyers .....	3.0
J. Fuchs .....	3.8
P. Grady .....	3.5
A. Grate .....	4.2
J. Bleiler .....	4.0
F. Jeffery .....	3.3
T. Maher .....	4.0
F. Renner .....	3.6
B. Beyerhoffe .....	3.8
H. Thorp & Son .....	4.2
Durgin & Clark .....	3.7
R. Crow .....	4.2



	% butter fat.
J. Luchsinger	3.7
H. Palmer	4.0
J. Elmer	3.8
A. Ackerman	3.8
J. Buehler	3.6
P. Ward, Sr.	3.6
P. Ward, Jr.	3.8
A. Heingelman	3.4
P. Gnagy	3.3
Ed. Wells	4.0

August 21, 1900. Hofa Park.

	% butter fat.
T. Adamski	3.8
F. Lepack	4.0
John Lepack	4.0
J. Jarck	below standard
M. Lupack	4.0
A. Sawicki	4.4
E. Hayducky	3.4
J. Luntkoski	4.0
J. Smith	3.8
W. Holawinski	4.2
W. Sobiezyck	3.6
J. Sawicki	4.0
M. Lepack, Sr.	4.0
C. Tucholski	3.8
J. Radeski	3.5
J. Polatoski	4.4
John Caijkiski	3.2
A. Holawinski	4.6
A. Cichontek	4.4
M. Wijnhaski	4.0
J. Polabitski	3.4
T. Smith	4.2
S. Petroskawedge	4.1
S. Rebelaski	4.0
J. Jasholski	4.0
M. Szalski	3.3
A. Nickle	below standard
M. Smith	3.8
Wm. Jatzk	3.2
A. Garetzki	3.6
M. Schafunski	4.0

August 22, 1900. Seymour.

	% butter fat.
F. C. Witt	3.8
A. Henies	4.0
J. Moore	3.8
H. Krause	4.0
B. Leabhaiber	3.2
H. P. Larson	4.0
N. Troumar	3.7
A. Faustaer	4.0
O. Tracy	4.2

	% butter fat.
A. Krause	3.7
P. Butter	3.2
A. Maass	3.8
H. Halling	4.0
J. Blohm	3.6
G. Schamberg	4.0
Alb. Maass	3.8
J. Heagal	3.7
A. Loachman	3.5
Wm. Bernetcke	4.0
A. Kollath	3.9
L. Metzner	3.5
Ed. Powers	4.2
T. B. Little	3.2
A. Heagal	3.5
J. Admia	3.0
A. Sturm	3.4
F. Schwizer	3.8
H. Pautz	3.6

August 27, 1900. Mishicot.

	% butter fat.
M. Sonnawuld	3.4
F. Sand	3.4
C. Saubert	4.3
T. Kabot	3.6
E. Schwab	3.6
F. Neiner	3.4
J. Werer	3.0
A. Schorskey	3.0
J. Wese	3.4
H. Stechmesser	3.8
J. Mesmann	3.2
Mrs. M. Dela	3.3
H. Vogl	3.6
J. Zik	4.0
M. Donchyk	3.6
F. Retzlaff	3.2
Mrs. F. Werer	4.2
C. Retzlaff	3.8
C. Stechmesser	3.0
J. Gokey	3.4
A. Zernmuhlen	3.8
H. Short	3.7
Wm. Elliott	3.4
S. Bisoop	4.0
J. Gats	3.8
H. Zermuhlen	3.7
J. Tonsizyk	4.6
J. Jasper	4.5

September 5, 1900. Springdale.

Sent by R. E. Beat.

	% butter fat.
Sample marked "E. B."	3.4
Sample marked "A. H."	3.6

## REPORT OF THE WISCONSIN

September 10, 1900. Potters.		% butter fat.	September 18, 1900. Iron Ridge.		% butter fat.
		% butter fat.			% butter fat.
Wm. Kriedman		3.4	A. P. Pierce		4.4
A. F. Webzel		3.3	Chas. Hansis (eve)		3.9
Hans Thiel		3.6	T. J. Irwin (eve)		4.5
Chas. Koehn		3.5	September 18, 1900. Iron Ridge.		
Phil Beil		3.0	% butter fat.		
C. Starfield		3.6	C. Zirbel		4.2
Chas. Schafer		3.8	J. Luedtke		4.0
Claus Thiel		3.4	W. Westphal		3.8
Gott Paul		3.7	W. Lentz		4.0
Wm. Schultz		3.8	W. Krueger		4.0
Wm. Mathies		3.9	A. Westphal		4.2
Mrs. Struebing		4.0	F. Glaman		4.2
Chas. Moehr		3.1	F. Westphal		3.8
H. Kleinow		3.7	A. Gentz		4.0
W. F. Schwant		3.5	C. Brunn		3.5
Mrs. Kliest		3.6	E. Gentz		3.6
J. Leukel		3.6	W. J. Steiner		4.0
Wm. Hintz		3.6	E. F. Erdmann		3.8
Otto Mathies		3.5	F. Erdmann		4.0
Hugo Kalk		4.0	W. Zelsky		3.8
Kliest Bros.		3.8	C. Heublein		3.6
Mrs. Potter		3.5	J. Mueller		3.8
Wm. Pagel	below standard		A. Fischer		4.0
Aug. Becker		3.5	September 15, 1900. Sheboygan Falls city milk.		
September 12, 1900. Kenosha city supply.			% butter fat.		
			% butter fat.		
Frank O'Connor (eve)		3.5	Van Ouerkerk Bros.		4.0
Frank O'Connor (morn)		4.9	Van Ouerkerk Bros.		4.1
M. P. Anderson & Sons (eve)		3.9	Aug. Fenner		3.2
John Hartung (eve)		3.2	Aug. Fenner		3.3
A. Sorensen (morn)		4.1	A. B. Dickson		4.5
E. F. Falk (eve)		4.2	September 18, 1900. Dane Co.		
E. F. Falk (morn)		6.2	% butter fat.		
Wm Pedley (eve)		4.1	Alb. Slack		3.0
Wm. Pedley (morn)		4.2	September 19, 1900. Neenah. Farmers' Stock Co. Cheese Factory.		
Sorenson Bros.		3.1	% butter fat.		
Peter Barth (eve)		3.6	E. McDonnell		4.0
Peter Barth (morn)		4.3	Mrs. Stein		3.8
H. E. Blackman (eve)		3.9	C. Christianson		4.1
H. E. Blackman (morn)		3.8	A. J. Price		3.7
John Hushold (eve)		2.9	Miss Zemlok		3.3
Rud. Henschler (eve)		4.4	S. Christianson		4.3
Rud. Henschler (morn)		6.0	H. Strey		4.0
Fred Bartes (morn)		4.0	H. Miller		4.1
J. White (morn)		5.2	J. D. Williams		3.7
J. A. Wells (eve)		4.7	Wm. Hoehne		4.9
J. A. Wells (morn)		4.3	W. Hennebray		4.6
L. H. French (morn)		5.2	J. Lord		3.8

September 20, 1900. Fond du Lac.  
Melrose Creamery.

	% butter fat.
G. Landerman (night)	4.0
G. Landerman (morn)	4.1
J. Longua (night)	4.3
J. Longua (morn)	4.2
P. Michel	4.2
M. Kennon	3.0
D. Kennon	below standard
H. Roblee	4.2
H. Erke	3.2
H. Woort	3.8
Ed. Ryan	3.8
M. Keram	3.5
G. B. Jones	3.
M. Pomerville	3.2
F. Bellmer	4.1
W. Klean	3.7
J. A. Applen	3.0
R. Zahn	4.9

MILK FOR CITY DELIVERY.

Inspected by N. J. Field.

Milwaukee, March 31, 1899.

	% butter fat.
Peter Barth, Elmgrove	4.0
Peter Barth	4.2
Peter Barth (morn)	3.9
Peter Barth (eve)	3.4
Peter Barth (eve)	3.3
Peter Barth	3.9
M. B. Potter, Wauwatosa (mixed)	4.6
M. B. Potter (morn)	3.9
Fred Wolf, Waukesha	3.6
Fred Wolf	3.6
Fred Wolf	4.0
Fred Wolf	3.4
Fred Wolf	4.0
Fred Wolf	3.7
Fred Wolf	3.8
S. A. Baird, Waukesha	3.6
S. A. Baird	3.8
S. A. Baird	3.4
T. Hodgson	4.4
T. Hodgson	4.2
T. C. Brown, Waukesha	3.6
L. W. Dunkel, Brookfield	3.2
L. W. Dunkel	3.8
L. W. Dunkel	3.2
L. W. Dunkel	3.2
Emil Thiele, Calhoun, C. & N. W. Ry. station—for A. L. Vanaman	3.9
Ry. station—for A. L. Vanaman	3.6
Ry. station—for A. L. Vanaman	3.9
Ry. station—for A. L. Vanaman	4.4

	% butter fat.
H. Rubin, Calhoun	4.4
A. Scheets, Calhoun	3.8

Milk taken at C., M. & St. P. Ry. passenger station April 7th, 1899:

	% butter fat.
L. Hartger, Duplainville	4.1
C. Roether, Duplainville	3.8
C. Steele, Duplainville	3.9
I. Stubanski, Brookfield	3.2
C. Nettersheim, Duplainville	3.3
R. Nettersheim, Duplainville	3.6
Wm. Hallan, Duplainville	3.6
R. Melran, Brookfield	4.0
C. Grapersheim, Brookfield	3.4
A. Burow, Brookfield	3.9
H. Worth, Brookfield	3.6
C. Riese, Brookfield	3.9
I. Litzau, Brookfield	3.8
I. Souter, Duplainville	4.2
A. Tenny, Hartland	4.0
Average	3.74

Fifteen (15) samples milk taken at C., M. & St. P. Ry. passenger station, April 10, 1899.

	% butter fat.
C. Nettersheim, Duplainville	3.6
R. Nettersheim, Duplainville	3.6
Wm. Schallock, Duplainville	3.5
M. Morrisey, Duplainville	3.1
M. Morrisey, Duplainville	3.4
H. Clemons, Eagle	3.9
H. Clemons, Eagle	3.1
H. Clemons, Eagle	3.5
H. Clemons, Eagle	3.5
E. Goodrow, Whitewater	3.6
J. Howell, Waukesha	3.7
G. R. Jones, Genesee	4.3
O. Oliver, Genesee	3.8
C. Norrie, Genesee	3.9
C. Honeyager, Genesee	3.8

Milwaukee, April 8, 1899.

Milk taken from C., M. & St. P. Ry. passenger station, W. U. Junc., April 8, 1899, 9 a. m.:

	% butter fat.
C. A. Brown	3.5
A. Schroebe, Franksville	3.8
S. Kern, Pewaukee	4.0
W. T. Riwell, Hartland	3.9
E. Merlenz, Pewaukee	4.1
Chas. Ramblow, Pewaukee	3.3
D. Cusick, Duplainville	3.7
J. A. Griswold, Duplainville	4.4

## REPORT OF THE WISCONSIN

	% butter fat.
M. Morrisey Duplainville .....	3.1
M. Morrisey, Duplainville .....	3.0
Chas. Ormand, Brookfield .....	3.4
W. W. Blodgett, Brookfield .....	3.5
A. White, Brookfield .....	4.0
W. B. Leonard, Brookfield .....	3.2
W. B. Leonard, Brookfield .....	3.3
T. Stubenski, Brookfield .....	3.3
T. Stubenski, Brookfield .....	3.3
W. Schallock, Duplainville .....	3.7

Fifteen samples milk from C., M. & St. P. Ry. passenger station, April 11.

	% butter fat.
I. Stubenski, Brookfield .....	3.6
I. Stubenski, Brookfield .....	3.8
I. Stubenski, Brookfield .....	4.4
I. Souter, Duplainville .....	4.3
C. Ormand, Brookfield .....	3.1
M. Morrisey, Duplainville .....	3.7
M. Morrisey, Duplainville .....	3.2
I. Hoffman, Brookfield .....	4.2
W. B. Leonard, Brookfield .....	3.6
W. B. Leonard, Brookfield .....	3.5
H. Clemons, Eagle .....	3.4
H. Clemons, Eagle .....	3.4
H. Clemons, Eagle .....	3.0
H. Clemons, Eagle .....	3.9
I. A. Griswald, Duplainville .....	3.7

C., M. & St. P. Ry. passenger station, April 12.

	% butter fat.
H. Clemons, Eagle .....	3.2
H. Clemons, Eagle .....	3.6
H. Clemons, Eagle .....	3.2
C. Ormand, Brookfield .....	3.2
R. W. Ormand, Brookfield .....	3.2
H. Mitchell, Genesee .....	4.0
H. O. Evans, Genesee .....	3.6
Fred Hacker, Brookfield .....	4.0

Fifteen samples milk taken from C., M. & St. P. Ry. passenger station, April 13.

	% butter fat.
C. Ormand, Brookfield .....	3.6
C. Ormand, Brookfield .....	3.5
C. Ormand, Brookfield .....	3.1
I. Stubenski, Brookfield .....	3.6
I. Stubenski, Brookfield .....	3.3
C. A. Brown, W. U. Je. ....	3.7
C. A. Brown, W. U. Je. ....	3.6
C. Roether, Brookfield .....	3.5

	% butter fat.
C. Roether, Brookfield .....	4.5
I. Stubenski, Brookfield .....	3.4
F. Cuphal, Duplainville .....	4.5
L. Wallschlaeger, Hartland .....	4.3
C. F. Steele, Duplainville .....	3.4
C. A. Brown, W. U. Je. ....	3.3
A. Beerow, Brookfield .....	4.2

Five samples milk taken at North Avenue station, C., M. & St. P. Ry., April 14.

	% butter fat.
C. R. Lichte, Lennon .....	3.4
C. R. Lichte, Lennon .....	3.8
C. R. Lichte, Lennon .....	4.2
C. R. Lichte, Lennon .....	4.2
A. L. Schlafer, South Germantown	4.5

Fifteen samples milk taken at C., M. & St. P. Ry. passenger station, April 15.

	% butter fat.
C. Ormand Brookfield .....	3.8
C. Ormand, Brookfield .....	3.5
H. Clemons, Eagle .....	3.1
H. Clemons, Eagle .....	3.1
H. Clemons, Eagle .....	3.7
G. Henderson, Eagle .....	4.3
A. Griffith, Eagle .....	3.4
E. Haskins, Pewaukee .....	4.7
C. Rambow, Pewaukee .....	3.0
Al. White, Brookfield .....	3.6
C. A. Brown, W. U. Je. ....	3.2
C. F. Steele, Duplainville .....	3.2
D. Cusick, Duplainville .....	4.1
L. Hurtgen, Duplainville .....	3.7
M. Morrisey, Duplainville .....	4.2

Fourteen samples milk taken at C., M. & St. P. Ry. passenger station, April 17.

	% butter fat.
C. Rambow, Pewaukee .....	3.8
C. Rambow, Pewaukee .....	3.3
C. Rambow, Pewaukee .....	4.2
C. Ormand, Brookfield .....	3.8
C. Ormand, Brookfield .....	3.8
M. Morrisey, Duplainville .....	3.7
E. Mellenz, Pewaukee .....	4.4
S. Kern, Pewaukee .....	4.1
I. Souter, Duplainville .....	4.5
A. Buron, Brookfield .....	4.2
I. Litzau, Brookfield .....	3.5
Gropengelser, Brookfield .....	3.3
I. Litzau, Brookfield .....	3.7
E. Mierow, Brookfield .....	3.8

Tests of 15 samples milk taken at Palmyra station, April 21.

	% butter fat.
F. Grant, Palmyra	2.9
F. Grant, Palmyra	2.9
F. Grant, Palmyra	2.9
F. Grant, Palmyra	3.1
F. Grant, Palmyra	3.7
F. Grant, Palmyra	3.4
F. Grant, Palmyra	3.3
F. Grant, Palmyra	3.8
F. Grant, Palmyra	2.9
F. Grant, Palmyra	2.6
F. Grant, Palmyra	2.7
F. Grant, Palmyra	3.5
F. Grant, Palmyra	3.4
F. Grant, Palmyra	2.8
F. Grant, Palmyra	2.8
R. M. Clery, Palmyra	3.9
R. M. Clery, Palmyra	3.7
R. M. Clery, Palmyra	3.7

Fifteen samples taken at C., M. & St. P. station, April 22.

	% butter fat.
F. Grant, Palmyra	3.5
F. Grant, Palmyra	3.0
F. Grant, Palmyra	3.0
F. Grant, Palmyra	2.8
F. Grant, Palmyra	3.5
F. Grant, Palmyra	2.7
F. Grant, Palmyra	3.0
F. Grant, Palmyra	3.5
F. Grant, Palmyra	2.9
F. Grant, Palmyra	3.9
F. Grant, Palmyra	3.7
W. Holsinger, Palmyra	3.2
W. Holsinger, Palmyra	4.3
M. C. Mason, Palmyra	3.0
I. Thayer, Palmyra	3.7

Fourteen samples milk taken at C., M. & St. P. Ry. passenger station, April 24.

	% butter fat.
I. Olson, Palmyra	3.6
I. Olson, Palmyra	3.9
I. Olson, Palmyra	3.0
I. Olson, Palmyra	3.8
M. C. Mason, Palmyra	4.4
M. C. Mason	3.5
M. C. Mason, Palmyra	3.9
M. C. Mason, Palmyra	4.2
M. C. Mason, Palmyra	4.6
M. C. Mason, Palmyra	4.0
G. A. Norrie, Genesee	4.1

% butter fat.

G. A. Norrie, Genesee	3.8
G. A. Norrie, Genesee	4.6
G. A. Norrie, Genesee	4.3

Fifteen samples milk taken from C., M. & St. P. Ry. passenger station, April 25.

% butter fat.

H. Mitchell, Genesee	3.7
H. Dodmead, Bethesda Crossing	3.6
H. Dodmead, Bethesda Crossing	3.3
H. Dodmead, Bethesda Crossing	3.9
H. Dodmead, Bethesda Crossing	4.4
F. Hacker, Genesee	4.0
F. W. Henderson, Whitewater	4.2
I. Garlow, Genesee	3.3
H. O. Evans, Genesee	4.1
Thos. Marsh, Palmyra	3.9
Thos. Marsh	3.8
Thos. Marsh, Palmyra	3.9
Thos. Marsh, Palmyra	4.5
Thos. Marsh, Palmyra	4.2
Thos. Marsh, Palmyra	4.0

Milwaukee, April 26, 1899.

Hon. H. C. Adams, Dairy and Food Commissioner.

Dear Sir:—Fifteen samples taken at C., M. & St. P. Ry. passenger station: lowest, 3.8.

Average, 4.16.

N. J. FIELD.

Milwaukee, April 29, 1899.

Hon. H. C. Adams, Dairy and Food Commissioner.

Dear Sir:—Fifteen samples milk taken at C., M. & St. P. Ry. station April 29, 1899:

% butter fat.

C. A. Brown, Franksville	3.3
W. B. Leonard, Brookfield	3.8
M. Morrisey, Duplainville	3.7
I. A. Griswold, Duplainville	4.8
Average	4.14
271 tests milk; 1 test cream.	

N. J. FIELD.

Milwaukee, April 28, 1899.

Hon. H. C. Adams, Dairy and Food Commissioner.

Dear Sir:—Fourteen samples milk from C., M. & St. P. Ry. this day. Lowest, 3.5; average, 4.

N. J. FIELD.

## REPORT OF THE WISCONSIN

Fourteen samples m... at C., M. & St.		% butter fat.	
P. depot, Palmyra, May 1.		F. Grant .....	3.9
	% butter fat.	F. Grant .....	3.6
F. Grant, Palmyra .....	3.8	F. Grant .....	3.8
F. Grant .....	3.5	F. Grant .....	3.8
F. Grant .....	3.7	F. Kaphal, Duplainville .....	4.5
F. Grant .....	3.7	H. Wirth, Brookfield .....	4.0
F. Grant .....	3.5	C. Nettersheim, Duplainville.....	4.2
F. Grant .....	3.4	W. S. Rowell, Hartland.....	5.2

## LIST OF CONVICTIONS.

### CONVICTIONS FOR SALE OF COLORED OLEOMARGARINE.

1899.		
Jan.	3.	W. A. Stolte, Reedsburg ..... \$50 and costs
Jan.	30.	Armour Packing Co., West Superior..... 50 and costs
Feb.	8.	Swift & Co., Agent, Ashland..... 50 and costs
Feb.	17.	F. Bartels, Madison (fine remitted) ..... 50 and costs
March	14.	John Meehan, Beloit..... 50 and costs
March	14.	J. B. Smith, Janesville ..... 50 and costs
March	28.	F. N. Larson, Eau Claire..... 50 and costs
May	10.	Carter & Emmons, Eagle River (sentence suspended) 50 and costs
May	22.	John L. Daly, Milwaukee (pleaded guilty)..... 50 and costs
Nov.	20.	E. R. Ross (Warren House), Baraboo..... 50 and costs
Dec.	16.	N. L. Byron, Milwaukee ..... 50 and costs
Nov.	—.	H. C. Schmeling, Edgerton (pleaded guilty)..... 50 and costs
1900.		
Feb.	5.	Jos. End, Sheboygan ..... 50 and costs
Feb.	5.	Wm. S. Davis, Williams Bay..... 50 and costs
March	12.	Hotel Mechan, Darlington ..... 50 and costs
March	23.	Thos. Lacey (Windsor Hotel), Milwaukee..... Sentence suspended
March	30.	Chas. Hoernig, Oshkosh ..... Sentence suspended
April	2.	G. P. Goetz, Milwaukee (sentence suspended)..... 50 and costs
April	12.	Russell House, Neenah ..... 50 and costs

### CONVICTIONS FOR SALE OF ADULTERATED MILK.

1898.		
Oct.	25.	Frank Ahrens, Prairie du Chien..... \$25 and costs
Oct.	25.	Herman Prey, Prairie du Chien..... 25 and costs
Dec.	—.	Watterson, Waupaca ..... 25 and costs
1899.		
March	24.	C. L. Dana, Milwaukee..... 25 and costs
July	17.	Elizabeth Weismiller, Monroe ..... 25 and costs
July	20.	R. W. Scott, Janesville (adulterated with preservaline) 25 and costs
July	20.	Chas. Barnes, Janesville (adulterated with preservaline) ..... 25 and costs
July	19.	Burt Stanchfield, Fond du Lac (adulterated with formaline) ..... 25 and costs
Aug.	3.	John Yost, Jr., Beloit..... 25 and costs
Aug.	11.	F. Marks, Madison ..... 25 and costs
Aug.	11.	Ideal Creamery, Madison (preservaline) ..... 25 and costs
Sept.	6.	Nels Johnson, Racine ..... 25 and costs
Sept.	6.	Wm. E. Lehnert, Racine (formalin in milk)..... 25 and costs
Sept.	6.	Wm. E. Lehnert, Racine (borax in cream)..... 25 and costs

## REPORT OF THE WISCONSIN

Sept.	6.	Chas. Eckhart, Racine .....	25 and costs
Sept.	11.	Mrs. N. Pfeiffer, Racine (boracic acid in milk) ..	Sentence suspended
Sept.	11.	Wm. Phelps, Racine (boracic acid in cream) .....	25 and costs
Sept.	11.	Wm. Beix, Racine .....	25 and costs
Nov.	28.	Jas. Wing, Appleton .....	25 and costs
1900.			
March	31.	B. Summerfeld, Juneau .....	25 and costs
April		Herman Rogenschneider, Juneau .....	25 and costs
April	17.	R. Sickler, Merrillan .....	25 and costs
April	17.	Joe Adams, Merrillan .....	25 and costs
May		D. F. Shea, Merrill .....	25 and costs
July		P. Thom, Kenosha .....	25 and costs
July	19.	J. Koci, Frances Creek .....	25 and costs
July	19.	A. Smelek, Frances Creek .....	25 and costs
July	24.	F. Steuber, Frances Creek .....	25 and costs
July	24.	John Ogden, Antigo .....	25 and costs
July	21.	F. Hallada, Mishicott .....	25 and costs
July	30.	J. Hallada, Mishicott .....	25 and costs
July	30.	Wm. Krocht, Mishicott .....	25 and costs
Aug.		Thinnes Bros., Milwaukee (formaline in milk) .....	25 and costs
Aug.		Champenny Cry. Co., Milwaukee (form. in milk) ..	Sentence suspended
Aug.		G. Weick, Milwaukee .....	25 and costs
Sept.	10.	Wm. Pagel, Potters .....	25 and costs
Sept.	11.	P. Ebeling, Milwaukee .....	25 and costs
Sept.	11.	J. Nowatny, Milwaukee (formalin in cream) ..	Sentence suspended
Sept.	6.	J. Jarek, Shawano .....	25 and costs
Sept.	6.	A. Nickel, Shawano .....	25 and costs

## ADULTERATED LEMON EXTRACT.

1898.			
Dec.	15.	E. H. Welsh, Waukesha (fine remitted) .....	\$25 and costs
1900.			
		E. D. Wilde, Milwaukee .....	25 and costs

## ADULTERATED HONEY.

1899.			
Dec.	6.	Fred Krepel, Milwaukee .....	\$20 and costs

## ADULTERATED BUCKWHEAT.

1900.			
Jan.	12.	Seth Fish, Eau Claire .....	\$25 and costs



# LIST OF CHEESE FACTORIES AND CREAM- ERIES IN WISCONSIN, 1900.

## CHEESE FACTORIES.

### ADAMS COUNTY.

Davis Corners Creamery and Factory	Wesley Garlock, Glen
North Factory	John North, Kilbourn City
Quincy Cheese Factory	Chas. Stromwall, Quincy
J. J. Zwincky Cheese Factory	Pointbluff
Bert Jenks Cheese Factory	Big Spring
Garlock Cheese Factory	Oxford
Friendship Factory	Friendship

### ASHLAND COUNTY.

Glidden Cheese Factory	Bert Wilcox, Glidden
Ashland Co-op. Butter & Cheese Co.	Ashland

### BARRON COUNTY.

Dallas Cheese Factory	David Pecore, Dallas
Western Wyoming Cheese Factory	John Nelson, Wyoming
Cheese Factory	Mike Wagner, Doble
Pioneer Cheese Ass'n	P. Rejner, Turtle Lake
Gratton Dairy Co.	Gratton
Pecos Bros.	Dallas
Canton Creamery & Factory	Canton
Rice Lake Creamery & Cheese Co.	Rice Lake
Ridgeland Cheese Co.	Dallas

### BROWN COUNTY.

L. Falck	Morrison
Saenger Cheese Factory	Lark
Smith's Cheese Factory (Rockland C. F.)	Stark, Manitowoc County
Excelsior Cheese Factory	Herman Schroeder, Morrison
Brennan's Cheese Factory	Peter Nier, Morrison
Wayside Cheese Factory	Alb. Borchart, Wayside
Natzke's Cheese Factory and Creamery	Aug. Natzke, Wayside
Hebel Cheese Factory	H. F. Wittig, Hebel
Shirley Cheese Factory	W. C. Falck, Shirley
Lawrence Cheese Factory	Lucius Clark, Little Rapids
A. A. Schley Factory	Wrightstown
Wisconsin Butter and Cheese Co.	Waukesha
Chas. Rader Cheese Factory	Wrightstown

## REPORT OF THE WISCONSIN

H. F. Meyer Cheese Factory .....	Greenleaf
Dan. Falck Cheese Factory .....	Morrison
East Wrightstown Cheese Factory .....	E. Wrightstown
Ernest Charlier Factory .....	Schiller
Cheese Factory .....	J. N. Osterloh, Henrysville
Enz Bros. & Co. ....	Denmark
Frank Sindzinski .....	Langes
Ferd. Wittig .....	Fontenoy
Didrich Benecke .....	Fontenoy
Arndt & Buckman .....	Fontenoy
New Denmark Farmers' Co-op Assn. ....	Forks
J. R. Meyers .....	Holland
U. S. Co-op. Dairy Co. ....	West DePere
West DePere Co-op. Co. ....	Pulaski
J. P. Peplinski .....	Poland
John Conrad .....	Glenmore
Anton Naughtaway .....	Schiller
T. Charlier .....	Pine Grove
H. Naughtaway & Co. ....	Pine Grove
F. H. Lange .....	Denmark
H. S. Beyer .....	Lodgeville
T. Vanroy .....	Lodgeville
A. T. Saenger .....	Morrison
Ed. O'Connell .....	Morrison
J. Clark .....	Suamico
C. F. Mason .....	New Franken
Victor Soetch .....	New Franken
Silver Van Drew .....	New Franken
Mr. Duzuane .....	New Franken
Botis Orlas .....	New Franken
Mike Brunner .....	Mills Center
Lewis Goodchild .....	Henrysville
John Conrad .....	Kunesh
Albert Uecker .....	Holland
Geo. Drexler .....	Midway
Jacob Reistacker (2) .....	Askeaton
H. Bockhous .....	Wayside
Chas. Geise .....	

## BUFFALO COUNTY.

Bennet Valley Cheese Factory .....	Pingel Bros., Gilmantown
Lookout Cheese Factory .....	Lookout Cheese Assn., Lookout
Farmers' Cheese Factory .....	Praag
Tell Cheese Manufacturing Co. ....	Gott. Maier, Alma
Pine Creek Cheese Manufacturing Co. ....	Gott. Maier, Alma
Trout Creek Cheese Manufacturing Co. ....	John Hubbler, Tell
Mill Creek Cheese Manufacturing Co. ....	John Eberle, Alma

## BURNETT COUNTY.

A. Kricuer .....	Star Prairie
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## CALUMET COUNTY.

Peter Schumacher .....	Jericho
John Achter .....	Jericho
John Snyder .....	Chilton
German Bank .....	Chilton

A. F. Decker .....	Chilton
E. C. Pingel .....	Chilton
Wm. Helsdorf .....	Chilton
Fred J. Harder .....	Chilton
Heckert & Albert .....	Chilton
Chas. Heckert .....	Chilton
Henry Gerard .....	Brant
Medke & Junker .....	Brillion
J. B. Junker .....	Brillion
Wm. Lintner .....	Brillion
Chas. Madenwald .....	Brillion
John Goodmond .....	Brillion
Robt. Mahnke .....	Brillion
Joe Wolfinger Factory & Creamery.....	Dundas
Peter Schreiber .....	Hilbert
J. A. Hernke .....	Hilbert
Wm. R. Behnke .....	Hilbert
Ed. Medke .....	Hilbert
F. W. Lindow .....	Forest Junction
J. M. Wolfmeyer .....	Forest Junction
Henry Schley .....	Forest Junction
Farmers' Cheese Manufacturing Co.....	Forest Junction
Otto Freund .....	Gravesville
F. W. Reidel .....	Potters
Albert Beilke (2) .....	Potters
H. F. Meyer .....	New Holstein
Wendel Burg .....	New Holstein
Cyrus Roehrig (butter and cheese).....	Charlesburg
Reis & Meyer .....	Sherwood
Querin Loehr .....	St. John
Fred Bauer .....	St. John
Phillip Kies .....	Lake Park
Christ Hargard .....	Lake Park
Joe Bodine .....	Lake Park
J. Snyder, Jr. ....	Stockbridge
M. Moersch (cheese and butter) .....	Brothertown

CHIPPEWA COUNTY.

Anson Cheese Factory .....	T. H. Dixon, Liddell
Albert Butscher .....	Boyd
Dietrich Cheese Factory .....	Dietrich Bros., Cadott
North Star Cheese Factory .....	Orth Bros., Edson
John Fagan .....	Stanley
A. P. Geiger .....	Boyd
Cadott Cheese Factory.....	F. L. Monroe, Cadott
Crescent Cheese Factory.....	F. L. Monroe, Cadott
Frank Goodman Cheese Factory.....	Drywood
LaFayette Cheese Factory .....	Thos. A. Roycraft, Chippewa Falls
S. C. Cass .....	Anson
Cheese Factory .....	Edson
F. L. Monroe .....	Drywood
John Bates (2) .....	Anson

CLARK COUNTY.

Steinwand Cheese Co. (2) .....	Colby
Sommerfeldt Cheese Factory.....	Fred Sommerfeldt, Colby

## REPORT OF THE WISCONSIN

Jerry Daugherty .....	Thorp
H. Laabs .....	Curtiss
Enterprise Cheese Factory .....	G. A. Hirsch, Lynn
Fred Somerfeldt .....	Colby
Arthur Vater .....	Withee
Val Casper .....	Sullivan
Beaver Cheese Factory.....	Wm. Welsh, Loyal
Dorchester Cheese Co. ....	H. G. Parge, Dorchester
Cheese Factory .....	M. A. Nacthwey, Dorchester
Pine Valley Cheese Factory.....	Frank Marth, Neillsville
Aug. Schultz .....	Spencer
Frank Pritzel .....	Stanley
Otto Decker .....	Hemlock
Henry Jacobi .....	Abbotsford
S. R. Davis .....	Granton
Farmers' Cheese Co. ....	Dorchester
Distelhorst & Co. ....	Dorchester
Delamater & Palms .....	Greenwood
Herman Laabs .....	Green Grove
S. D. Gibson .....	Wilcox
Holzauser Cheese Factory .....	Reeseburg
Joseph Frame .....	Unity

## COLUMBIA COUNTY.

Ford's Factory .....	Duffries & Hanson, Columbus
Fountain Prairie Cheese Factory .....	Columbus
Brickstein Cheese Factory .....	Chas. Miller, Fall River
Aug. F. Westphal Cheese Factory.....	Columbus
Tissman & Wamky .....	Cambria
Stone School House Cheese Factory.....	C. Mohr & Co., Cambria
Randolph Center Factory.....	Tillema & Morris, Randolph Center
Simons & Hutson .....	Lodi
Jac. Oppliger Cheese Factory .....	Fall River
Baehler Bros. ....	Cambria

## CRAWFORD COUNTY.

Maple Ridge Cheese Factory Co.....	A. P. Rice, Boscobel
Prairie du Chien Butter Co.....	Prairie du Chien

## DANE COUNTY.

Skuldt Cheese Factory (Co-op.) .....	Engen Bros., Primrose
Peters Cheese Factory (Co-op.) .....	J. E. Hendrickson, Montrose
Weltzin Cheese Factory (Co-op.) .....	J. L. Weltzin, Primrose
Stone Hill Cheese Factory (Co-op.).....	Jacob Zweifel, New Glarus
Damholt Cheese Factory (Co-op.).....	N. O. Holmen, New Glarus
Myrland Cheese Factory (Co-op.).....	L. P. Myrland, Primrose
Town Hall Cheese Factory (Co-op) .....	G. G. Stamm, Mt. Vernon
Holland Cheese Factory (Co-op.).....	H. H. Anderson, Primrose
Connor Cheese Factory (Co-op.) .....	Dan. Connor, Mt. Vernon
Harker Cheese Factory (Co-op.) .....	C. H. Harker, Mt. Vernon
Vermont Cheese Co. ....	Black Earth
Dimond Cheese Co. ....	Black Earth
Greenwalt Cheese Co. ....	Black Earth
Mickelson Cheese Co. ....	Black Earth
Spring Valley Cheese Co.....	Mt. Horeb
Kelcher Cheese Co. ....	Peculiary

South Blue Mounds Cheese Factory .....	Blue Mounds
Erbe's Factory .....	Mt. Horeb
Jacobson Cheese Factory .....	A. O. Jacobson, Mt. Horeb
German Valley Factory .....	Aug. Heiser, Mt. Horeb
Sand Rock Factory .....	Mt. Horeb
Blue Rock Factory .....	And. Disrud, Mt. Horeb
Blue Valley Factory .....	Mt. Horeb
Central Cheese Factory Co. ....	Wesley Guymp, Paoli
Basco Cheese Factory Co. ....	C. Snider, Basco
Lyle Cheese Factory Co. ....	John Lyle, Mgr., Lyle
Montrose Cheese Factory Co. ....	John Fritz, Montrose
Maple Grove Cheese Factory .....	Manwarring & Bennett, Black Earth
Mt. Horeb Cheese Factory .....	Schmidt, Mgr., Mt. Horeb
Roach & Seeber Co. ....	Sun Prairie
Golden Rod Factory, Roach & Seeber .....	Sun Prairie
O'Keefe Factory .....	Roach & Seeber, Sun Prairie
Burke Factory .....	Roach & Seeber, Burke
London Factory .....	Roach & Seeber, London
Deerfield Factory .....	Roach & Seeber, Deerfield
Nora Factory .....	Roach & Seeber, Deerfield
Blue Mounds Factory .....	Roach & Seeber, Blue Mounds
Goodwin Cheese Factory .....	Roach & Seeber, Verona
Chris Pauli Cheese Factory .....	Mt. Vernon
Brooklyn Cheese Factory .....	Brooklyn
Greenwood & Groth .....	Rockdale

DODGE COUNTY.

Jac. Christen Cheese Factory .....	Brownville
Clyman Station Co-op. Cheese Factory .....	Clyman
Clyman Center Co-op. Cheese Factory .....	Clyman
West Clyman Cheese Factory .....	Watertown
Juno Cheese Factory .....	H. Habbigger, Watertown
North Clyman Cheese Factory .....	Watertown
Gottlieb Gassner Cheese Factory .....	Horicon
Rock River Cheese Factory .....	Chas. Muenzmaier, Mayville
Maple Grove Cheese Factory .....	Rudolph Schneider, Mayville
Bock Cheese Factory .....	Aug. Bock, Mayville
Oppliger Cheese Factory .....	Theresa
Theresa Cheese Factory .....	Chas. Miller, Theresa
Cherry Hill Co-op. Cheese Factory .....	Neosho
Saylerville Cheese Co. (Co-op.) .....	W. Sonnentag, Rubicon
Neosho Cheese Factory .....	Aug. Westphal, Neosho
Labruris Factory .....	Rubicon Mer. Co., Neosho
C. F. Meyer Cheese Factory .....	Lomira
Ballette Jonely Cheese Factory .....	Brownsville
Geo. Hanson Cheese Factory .....	Knowles
Union Cheese Co. ....	Mike Fitzgerald, Mgr., Alderley
North Star Cheese Co. ....	Gustav Meissner, Ashippun
Rock Ridge Cheese Co. ....	Ashippun
Lime Ledge Cheese Co. ....	Jac. Jossi, Ashippun
Rock River Star Cheese Co. ....	Monterey
Ashippun Cheese Co. ....	Gustav Meissner, Ashippun
Cross Key Cheese Co. ....	Mike FitzGerald, Alderley
North Portland Cheese Factory .....	F. A. Jerges, Sec., Reeseville
Cold Spring Cheese Factory .....	Wm. Lenz, Waterloo
Grove Prairie Dairy Factory .....	F. A. Christians, Gibson
Clear Water Spring Dairy Factory .....	Keel & Puerner, Lowell

## REPORT OF THE WISCONSIN

North Lowell Center Factory.....	Lowell
Rock River Cheese Factory and Creamery.....	Alb. Schaefer, Mayville
Union Dairy Co.....	Max Radtloff, Hustisford
Highland Cheese Factory.....	Max Radtloff, Hustisford
Hustisford & Rubicon Cheese Factory.....	Auf. Westphal, Neosho
Rubicon River Cheese Factory.....	Herman Lehmann, Hustisford
Zeitler Cheese Factory.....	H. Bilgriels, Woodland
Newton Cheese Factory.....	Gustav Jaeke, Hustisford
Ryder Cheese Factory.....	H. C. Ryder, Hustisford
Union Cheese Factory.....	E. E. Randall, Hustisford
Oak Hill Cheese Factory.....	Aug. Koehler, Hustisford
Burr Oak Cheese Factory.....	Pat Casey, Hustisford
White Oak Cheese Factory.....	Ferd Thielke, Hustisford
Chas. Nehls' Cheese Factory.....	Hustisford
Jas. Timmins' Cheese Factory.....	Hustisford
Gates' Cheese Factory.....	Ray Lovell, Hustisford
Wege Cheese Factory.....	Hustisford
Ernst Bramer (2).....	Hustisford
Minnesota Junction Cheese Co.....	Gottlieb Klossner, Minnesota Junction
Orth Bros.....	Juneau
Union Factory.....	Al. Ryder, Juneau
Essman Factory.....	Otto Melcher, Juneau
Black Oak Cheese Factory.....	F. Pieper, Juneau
Oak Grove Cheese Factory.....	S. Schneider, Oak Grove
Indermuehle Cheese Factory.....	Chris. Indermuehle, Oak Grove
Zache Factory.....	B. Sommerfeld, Juneau
Heublein Cheese Factory.....	Chas. Heublein, Fox Lake
Rock Cheese Co.....	Aug. Lemke, Mgr., Mayville
Huillsburg Cheese Factory.....	Frank Schujahn, Huillsburg
Woodland Cheese Factory.....	C. Gassner, Woodland
Woodland Cheese Factory.....	J. T. Peters, Woodland
Herman Cheese Factory.....	F. Sette, Iron Ridge
Herman Cheese Factory.....	Aufdermauer, Hartford
Highland Cheese Factory.....	Fred Sufelt, Hochheim
Koepsell Cheese Factory.....	Herman Koepsell, Hochheim
Farmers' Stock Co.....	M. Murphy, Mgr., Neosho
Trechel Cheese Factory.....	Ferd. Kuehn, Lebanon
Peirick & Co.....	Lebanon
J. R. Moldenhauer Cheese Factory.....	Lebanon
Sunside Cheese Factory.....	Lebanon
Sugar Island Factory.....	Jac. Jossi, Mgr., Ashippun
Golden Star Factory.....	Jac. Jossi, Mgr., Lebanon
Schwefel & Co.....	Jac. Jossi, Mgr., Lebanon
Main Street Factory.....	Jac. Jossi, Lebanon
Indian Garden Cheese Factory.....	John McCaig, Mgr., Richwood
Beaver Dam Island Cheese Ass'n.....	Chris. Krebs, Pres., Beaver Dam
Zastrow Cheese Factory.....	Adolph Rake, Pres., Beaver Dam
Edgar Boeing.....	Hustisford
Stock Co. Cheese Factory.....	W. G. Beutz, Iron Ridge
H. Bilgrien Cheese Factory.....	Iron Ridge
C. E. Erdman Cheese Factory.....	Hustisford
Klossners Cheese Factory.....	Hustisford
Chris. Indermuehle.....	Oak Grove
C. F. Haselen Cheese Factory.....	Reeseville
Stock Co. Cheese Factory.....	Emmett
Black Oak Factory.....	Herman
Mill Creek Creamery and Butter Co.....	Chester

Nowell Creamery and Butter Co.....	Lebanon
Prairie Hill Creamery and Butter Ass'n.....	Beaver Dam
Cheese Ass'n .....	Wichert, Mgr., Hubbleton
Seeffeld Bros. ....	Iron Ridge
Salesville Factory .....	J. J. Reed, Hartford
A. Gronert Creamery Factory.....	Beaver Dam
W. Maas .....	Beaver Dam
Welsh & Laffey .....	Clyman
John Fred .....	Huillsburg
Sam Baehler .....	Horicon
Chas. Albert .....	Iron Ridge
H. Copert .....	Mayville
Home Factory .....	E. Euhling, Richwood
Baehler Bros. ....	Randolph
J. Habbiger .....	Watertown
Chris. Undermuehle .....	Beaver Dam
Chris Undermuehle .....	Le Roy
E. Rose .....	Kekoskee
F. Bertsochy .....	Mayville
Seeffeld Bros. ....	Mayville
Christ Kohli .....	Kekoskee

## DOOR COUNTY.

Aug. Haegele Cheese Factory.....	Kolberg
Eugene Naze Cheese Factory .....	Roslere
Cheeseville Factory .....	Madoche & McDermott, Salona
Vignes Cheese Factory .....	Vignes
John Henguivet Cheese Factory .....	Gardner
Chas. Jenquire .....	Little Sturgeon
Chas. Schneidtenberg Cheese Factory.....	Stevenson's Pier
Sister Bay Cheese Factory .....	John Waracheck, Sister Bay
Maplewood Factory .....	Waracheck Bros., Maplewood
Leischow's Factory .....	Fred Leischow, Kodan
Jos. Jindra Cheese Factory .....	Stokes
Herman Nienas Cheese Factory .....	Tornado
Bagnall Cheese Factory.....	J. W. Bagnall, Jacksonport
Evrard Bros. ....	Frank Evrard, Mgr., Namur
H. A. Anderson Cheese Factory .....	Ephraim
Jas. Ullsberger .....	Forestville
H. J. Teske .....	Carnot
Torger Torgerson .....	Bailey's Harbor
Albert Icke .....	Ellison Bay
Jas. Neusse .....	Sturgeon Bay
Alec. Pierre .....	Namur
G. Guth & Son.....	Kolberg
Pierre Verlee Co. ....	Brussels
Chas. Bassford .....	Sevastopol
J. H. Schwichtenberg .....	Sawyer
L. M. Wasuburn .....	Sturgeon Bay
Wash Island Cheese Factory Ass'n.....	Detroit Harbor
Chas. Jess & Co.....	Washington Harbor

## DUNN COUNTY.

Sheridan Cheese Factory .....	J. A. Schafer, Prairie Farm
Little Beaver Cheese Factory .....	John Keiser, Vance
Vanceburg Cheese Factory.....	Carl Messerly, Vance

W. Hawkins, Mgr. ....	Knapp
Cheese Factory .....	Stanton
Armsburg Factory .....	Wilson
Barker Factory .....	Village of Downing

EAU CLAIRE COUNTY.

H. F. Seidel Cheese Factory .....	Augusta
Pleasant Valley Co.....	Hadleyville
Foley .....	Nixcorner
Clear Creek Factory .....	Augusta
Co-op. Factory Clark Co.....	Nixcorner

FOND DU LAC COUNTY.

C. A. Atwood Cheese Factory (4) .....	Waupun
Coles' Corners' Cheese Factory .....	Rosendale
John Brost Cheese Factory .....	Dotyville
Orton Safford Cheese Factory .....	Fond du Lac
Perrin Bros. Cheese Factory .....	Eggersville
Wm. Wolfgram Cheese Factory .....	Dotyville
Math Wagner Cheese Factory.....	Mt. Calvary
T. H. Koepka Cheese Factory .....	Eggersville
Peter Stephany Cheese Factory .....	Peebles
John Krebsbach Cheese Factory .....	Johnsburg
Town Line Factory .....	P. O'Brien, Eden
Kelley Factory .....	T. J. Kelley, Eden
Kellogg Factory .....	N. P. Kellogg, Eden
J. B. Van Blarcom Factory.....	New Prospect
Fick & Sons' Factory .....	New Cassel
A. Demarest Factory .....	Kewaskum
Behle Bros.' Cheese Factory .....	Calvary Station
Perrin Bros.' Cheese Factory .....	Mount Calvary
Jos. Buelig Cheese Factory .....	Saint Cloud Station
Chris. Bertram Cheese Factory .....	Johnsburg
Henry Blonien Cheese Factory .....	St. Cloud
St. Jose Cheese Factory .....	Wolf Lake
Agidius Korb Cheese Factory.....	Wolf Lake
R. J. Romain Cheese Factory.....	Dunidee
H. T. Sackett (2) .....	Waucousta
H. Pieper & Son (2) .....	Waucousta
John Morgan Factory .....	Mitchell
Ad. Blackmore .....	Armstrong
Rogersville Cheese Factory (2).....	Jas. C. Post, Rogersville
Triangle Factory (4).....	Jas. Ennison, Eldorado
Star Valley Factory .....	J. W. Schaefer, Rogersville
Woodhull Factory .....	J. A. Stratz, Woodhull
Jos. Lindel .....	Banner
Factory .....	Sippel, Vanpelt & Koch, Banner
Factory (2) .....	John Brost, Dotyville
Kohlman Factory .....	St. Cloud
Chas. Perrin Factory (2) .....	Dotyville
Peter Reis Factory .....	Armstrong
M. J. Michels' Factory.....	Calumet Harbor
Mathias Hett Factory .....	Marytown
Peter Weinreis' Factory .....	Johnsburg



Wm. Zwicky Factory .....	Vandyne
Albert Schmidt Factory .....	Fond du Lac
Amiel Teshendorf .....	Farmer
Brayton Factory .....	Mrs. J. J. Brayton, Fond du Lac
Loyd Factory .....	F. H. Flanigan, Dundee
Elmwood Creamery .....	Otto Dudrick, Fond du Lac
Farmers' Co-op. Cheese Factory .....	Will Gillett, Pres., Rosendale
Town Line Creamery Co. ....	Fond du Lac
Brothertown Creamery .....	Grehe Bros., Brothertown
Farmers' Co-op. Creamery Co. ....	James Watson, Sec., Vandyne
Kirkwood Factory .....	Frank McKna, Kirkwood
Friendship Factory .....	Mat Bachelder, Fond du Lac
New Prospect .....	L. B. Vanblacer, New Prospect
Dundee Butter and Cheese Factory .....	Roff Romain, Dundee
Brandon Creamery .....	Hobbo Bros., .....
Jac. Christen Creamery Factory .....	Brownville
Eggersville Factory .....	Perrin Bros., Mt. Calvary
Waupun Factory .....	J. Cronk, Waupun
Farmers' Cheese Co. ....	Fond du Lac
Triangle Cheese Co. ....	Eldor Mills

## GRANT COUNTY.

Castle Rock Co-op. Cheese Factory .....	P. A. Peterson, Castle Rock
Rocky Point Cheese Factory .....	Jos. Shemak, Highland
Frank Wanck Cheese Factory .....	Muscoda
N. F. Orth Cheese Factory .....	Muscoda
Platteville Cheese & Produce Co. ....	F. Krogg, Platteville
Wolf Hollow Factory .....	J. H. Livingston, Mgr., Livingston
Annoton Factory .....	L. Mellor, Annoton
Oak Grove Cheese Factory .....	H. J. Noyes, Muscoda
Marion Cheese Factory .....	Geo. Rice, Boscobel
Mt. Ida Cheese Factory .....	Mt. Ida
Platt Ridge Cheese Factory (2) .....	C. I. Armsbe, Platteville
Dickinson Cheese Factory .....	C. Dickinson, Platteville
Ed. Parks Cheese Factory .....	Beetown
Muscoda Cheese Ass'n .....	Muscoda
Louis Brandt Cheese Factory .....	Dickeyville
Homer Creek Factory .....	H. E. Austin, Homer
Badger State Cheese Co. ....	H. E. Austin, Homer
Fennimore Branch Cheese Co. ....	H. E. Austin, Homer
Millville Factory .....	Jos. Beadle, Millville
Blue River Cheese Factory .....	Jas. Reed, Blue River
Oak Ridge Factory .....	E. E. Austin, Boscobel
Sanders' Creek Cheese Factory .....	Ralph Holt, Boscobel
B. G. Schafer .....	Platteville
Gas Hollow Dairy Ass'n .....	Montfort
Jac. Regez .....	Montfort
Unionville Co-op. Ass'n .....	Montfort
Platte Factory .....	Stitzer
Ira Griswold .....	Livingston
S. Obers .....	Boscobel
N. Gibbs .....	Boscobel
Highland Factory .....	W. Wall, Mgr., Highland
H. Thiede .....	Muscoda
H. J. Noyes .....	Muscoda

## GREEN COUNTY.

Franklin Cheese Factory .....	Mrs. L. Millman, Monroe
Hawthorn Cheese Factory .....	John Hawthorn, Monroe
Davis Cheese Factory .....	J. N. Davis, Monroe
Tschudy Cheese Factory .....	Fred Tschudy, Monroe
Trumpy Factory and Creamery .....	Dan Trumpy, Clarno
Trumpy Factory .....	Jos. Trumpy, Clarno
Eugene White Factory .....	Clarno
John Kubley Factory .....	Monroe
Wm. Beckeman Factory .....	Clarno
Fred Brunkow Factory .....	Clarno
G. Pfeifer Factory .....	Monroe
Swiss Cheese Factory .....	Wm. Krouse, Evansville
Swiss Cheese Factory .....	Keylock Factory Stock Co., Attica
Swiss Cheese Factory .....	Rhyner Bros., Dayton
Swiss Cheese Factory .....	Sam Freitag, Dayton
Swiss Cheese Factory .....	Joe Richards Stock Co., Brooklyn
American Factory .....	Brooklyn
Wm. Meythaler Factory .....	Jordan
B. Shindler .....	Jordan
A. Stauffacher Factory .....	Jordan
J. Stauffacher .....	Jordan
R. Olson Factory .....	Browntown
R. Ault Factory .....	Monroe
J. Greenwald Factory .....	Monroe
C. Bayerhoffer Factory .....	Monroe
S. Severson Factory .....	Browntown
Broughton Factory .....	F. Broughton, Albany
John Davis Factory .....	Albany
A. B. Comstock .....	Albany
Norwegian Factory .....	Ole Kettleison, Albany
Ezid Bluner Factory .....	Fred Bluner & Co., Farmers' Grove
White Oak Factory .....	Durst, Marty & Co., Farmers' Grove
H. Wild Factory .....	Stewart
G. Karlen Factory .....	Farmers' Grove
Mark Hoesly Factory .....	Stewart
G. E. Rear Factory .....	J. P. Hanson Co., Stewart
Bigg's Factory .....	Conway, Flanery & Co., Argyle
Puddleclack Factory .....	Barry Monahan & Co., Argyle
Flanigan Factory .....	Flanigan Montieith, Farmers' Grove
Christ Bleiler .....	Bleiler & Co., Farmers' Grove
W. S. Carey & Co. ....	Argyle
Patterson Factory .....	N. Knudson & Co., Argyle
Flanigan Factory .....	Mrs. Flanigan, McCue & Co., Argyle
Oswald Zentner Factory .....	Monticello
Rud. Freitag .....	Monticello
Silver & Lewis Factory .....	Attica
Rhyner, Clark & Co. ....	Monticello
Kubli & Babner .....	Monticello
Zimmerman & Milbrandt .....	Monticello
Rhyner & Purinton .....	Albany
Just. Zweifel .....	Monticello
Kern Cheese Co. ....	Monticello
H. Elmer .....	Monticello
Marty Bros. ....	Monticello

D. Stauffacher .....	Monticello
Elmer Bros. ....	Schultz
Babler & Geigle .....	Schultz
Jac. Stauffer .....	Monticello
Monticello Creamery Co. ....	Monticello
John Newman Factory .....	Thos. Devlin, owner, Martintown
D. E. Wood & Co. ....	Browntown
Henry Klessie Factory .....	Belleville
J. Voegler Factory .....	Belleville
Henry Donner Factory .....	Dayton
Fred Leuherr Factory .....	Dayton
Disch Factory .....	Monticello
Freitag Factory .....	J. C. Freitag, Monticello
Henry Freitag Factory .....	Monticello
Exeter Factory .....	G. Lewis, Dayton
Zwicky Factory .....	Casper Zwicky, Belleville
Stark Cheese Factory .....	Jac. Marty, Mgr., Browntown
Gottlieb Wittwer Factory .....	Monticello
Fred Hefty Factory .....	Monticello
Nic. Freitag Factory .....	Monticello
R. Theller & Co. Factory .....	Monticello
Werner Blam Factory .....	Monticello
J. W. Theller Factory .....	Monticello
Karlen Bros. & Co. Factory .....	Monticello
Fred Blum & Co. Factory .....	Monticello
Jac. Altman Factory .....	Monticello
J. Moritz Factory .....	Monticello
Henry Klassy Factory .....	Monticello
Mike Bidlingmeier Co. ....	Monroe
Herman Schmersy Factory .....	Monroe
Hefty & Zumbrunnen Factory .....	Monroe
John Benkert Factory .....	Monticello
Wm. Lemon .....	Monticello
Burgy & Wittenweiler Factory .....	Monticello
Chas. Zuercher .....	Brodhead
J. L. Roderick .....	Brodhead
Alb. Roderick .....	Juda
Wm. Gautz .....	Brodhead
Rudy Benkert .....	Monroe
John Hauser .....	Monroe
Fred Kundet .....	Monroe
Stearns Bros. ....	Monroe
F. Gruned .....	Monroe
John Gibbons .....	Monroe
Nicholas Schmid .....	Monroe
Joseph Gohl .....	Monroe
John Wenger .....	Monroe
John A. Elmer .....	Monroe
R. C. Whitcomb .....	Monroe
Neuenschwander Bros. ....	Monroe
Jac. Kundert .....	Monroe
Anton Portman .....	Monroe

## GREEN LAKE COUNTY.

J. J. Clark .....	Berlin
Town Line Cheese Factory .....	Berlin
Page Bros. ....	Berlin
Seneca Cheese Factory .....	Cristy & Myers, Berlin
Black Creek Cheese Factory .....	St. Marie

## IOWA COUNTY.

Dallas Cheese Factory .....	Pierce Nolan, Mifflin
Mineral Point Cheese Factory .....	Thos. Harford, Mineral Point
Mount Hope Cheese Factory .....	H. W. Beecher, Mineral Point
Oak Park Cheese Factory .....	Albert Springer, Mineral Point
Buck Grove Cheese Factory .....	Jas. H. Dunn, Mineral Point
Barrel Town Cheese Factory .....	R. J. Mitchell, Mineral Point
Phillips Cheese Factory .....	Geo. Phillips, Mineral Point
McMullen Cheese Factory .....	Jac. Roth, Mineral Point
Schlinder Factory .....	F. Martie, Moscow
River Forks Cheese Factory .....	Moscow
Glen Valley Cheese Factory .....	Hollandale
Pecatonica Cheese Factory .....	Hollandale
North Hill Cheese Factory .....	John Schenk, Hollandale
Long Valley Cheese Factory .....	John Klotzle, Hollandale
Hanson Cheese Factory .....	John Buetzer, Blanchardville
Adamsville Cheese Factory .....	Fred. Kaser, Barneveld
Moscow Mill Pond Cheese Factory .....	Herman Stolder, Moscow
Sandy Rock, Cheese Factory .....	A. E. Schenk, Perry
D. M. Thonas Cheese Factory .....	Powell
Wm. Jewell Cheese Factory .....	Linden
Walker Cheese Factory .....	Frank Walker, Linden
Wall Cheese Factory .....	Walter Wall, Highland
High Point Cheese Factory .....	Geo. Steinhurt, High Point
Pine Knob Cheese Factory .....	Geo. Tappins, Pine Knob
Pompey's Pillar Cheese Factory .....	Ben Benoy, High Point
Trout Branch Cheese Factory .....	Harvey Vail, Avoca
Klenzing Cheese Factory .....	Ed. Schwinge, Avoca
Lorson Cheese Factory .....	Jas. Keska, Avoca
Star Factory .....	Henry Hauschalter, Muscoda
Pulaski Cheese Factory .....	M. C. McIntyre, Avoca
Prairie Cheese Factory .....	Muscoda
Banner Co-op. Cheese Factory .....	Henry Ryan, Mgr., Hollandale
Cold Spring Co-op. Cheese Factory .....	J. FitzSimmons, Jonesdale
Yellowstone Cheese Factory .....	Geo. G. Cox, Waldwick
Urens' Cheese Factory .....	W. N. Urens, Waldwick
Waldwick Cheese Factory (2) .....	Ernest Regez, Blanchardville
Pompey's Pillar Cheese Factory .....	Geo. Baker, Pine Knob
Price Cheese Factory .....	Tom Price, Union Mills
Pine Knob Cheese Factory .....	Isaac Everson, Pine Knob
Hanson Cheese Factory .....	Andrew Hanson, Pine Knob
Holverson Cheese Factory .....	Holverson Bros., Highland
Dry Bone Cheese Co. ....	Geo. G. Day, Dry Bone
Dickenson Cheese Co. ....	Hans Mellum, Union Mills
Meadow Vale Cheese Factory Co. ....	Mazomanie
Blue Ridge Cheese Factory .....	Chas. Holdeman, Arena

Mill Creek Cheese Factory .....	S. W. Dawson, Arena
Wilkinson Hollow Cheese Factory.....	Frank Hildebrand, Arena
Survey Cheese Factory .....	C. H. Berryman, Dodgeville
Burr Oak Cheese Factory.....	W. E. Powell, Dodgeville
Knickerbocker Factory .....	S. E. Knickerbocker, Wyoming
Knobs' Cheese Factory Co.....	Jas. Smith, Spring Green
Sneed Creek Cheese Factory Co.....	Wyoming
Morris Cheese Factory .....	Barneveld
Barber Cheese Factory .....	Barneveld
Middlebury Cheese Factory .....	Barneveld
Gorman Cheese Factory .....	Perry
Brunner Cheese Factory .....	Barneveld
Blue Ridge Cheese Factory .....	Barneveld
Jones Valley Cheese Factory .....	Barneveld
Scheide's Cheese Factory .....	Barneveld
Pralrie Grove Cheese Factory.....	Barneveld
Nautgwylan Cheese Factory .....	Barneveld
Trout Creek Cheese Factory.....	Barneveld
John Rekl Cheese Factory.....	Barneveld
Linden Cheese Factory.....	Jac. Roth, Linden
Barneveld Cheese Co. ....	Barneveld
Hyde Cheese Co. ....	Hyde
Hand's Factory .....	Ridgeway
J. Gutnecht .....	Avoca
Walnut Hollow Factory .....	Barneveld
Farmers' Factory .....	Barneveld
School Section Factory .....	Barneveld
Battin .....	Cobb
Thomas Factory .....	Dodgeville
Standart Factory .....	Standart
Hunter's Factory .....	Standart
Oak Creek Factory .....	Standart
Nelson .....	Standart
H. V. Comley .....	Ridgeway
Rockwell Factory .....	Ridgeway
J. Roelkesberger .....	Ridgeway

JACKSON COUNTY.

Fairview Cheese Factory.....	G. Schenk, Fairchild
Houghtonburg Cheese Factory .....	Merrilan
W. G. Hyslop .....	Alma Center
A. W. Trow .....	Merrilan

JEFFERSON COUNTY.

Roberts & Reese Factory.....	Chas. Forncrook, Concord
Bark River Cheese Co.....	A. J. Carman, Hebron
Whitney Factory .....	A. R. Hoard, Ft. Atkinson
Gopher Hill Cheese Manufacturing Co.....	Fred. Hubner, Ixonia
Ixonia Cheese & Butter Co.....	Fred. Hubner, Ixonia
Green Valley Brick Cheese Co.....	Jac. Jossie, Watertown
Farmers' Home Cheese Co.....	Jac. Jossie, Watertown
County Line Cheese Co. ....	Jac. Jossie, Watertown
Schempf & Dobratz Brick Cheese Co.....	L. Schempf, Watertown

## REPORT OF THE WISCONSIN

Maple Grove Factory .....	Watertown
Elm Grove Cheese Co. ....	Farmington
Wisconsin Cheese Co. ....	Jefferson
Cold Spring Cheese Co. ....	C. Baker, Watertown
E. G. Shultz .....	Hubbleton

## JUNEAU COUNTY.

Lone Rock Cheese Factory (Co-op.) .....	C. Jensen, Camp Douglas
Elgin Creamery Co. ....	Ed. Bredlaw, Union Center
Warren Kimball Cheese Factory .....	Jos. Kimball, Union Center
Jas. Larson Cheese Factory .....	D. A. Noonan, Wonewoc
Felix Lachurst Brick Cheese Co. ....	Wonewoc
Creamery & Cheese Factory .....	John Steiner, Mauston
North Valley Factory .....	G. B. Windsor, Suldal
Lindina Cheese Factory .....	Cross & Hale, Mauston
Rock Valley Cheese Factory .....	Aug. Steiner, Mauston
Hillside Cheese Factory .....	Harvey Granger, Mauston
Pine Tree Cheese Factory .....	Bert Pearsall, Elroy
Twin Bluff Cheese and Butter Co. ....	New Lisbon
Lone Rock Cheese and Butter Co. ....	New Lisbon
H. E. Elmer .....	Hustler
S. Fluno .....	New Lisbon
T. N. Dewey .....	Mather
D. Leinsville .....	Germantown
J. Steiner .....	Mather

## KEWAUNEE COUNTY.

Jos. Dellain Cheese Factory .....	Casco
Joe Adams Cheese Factory .....	Casco
Joe Peot Cheese Factory .....	Casco
A. Kirchman Cheese Factory .....	Rio Creek
Wensel Slab Cheese Factory .....	Rio Creek
Alb. Hoppe Cheese Factory .....	Rio Creek
A. & J. Ripley Cheese Factory .....	Sloven
C. Endinger .....	Rankin
Jos. Werg Cheese Factory .....	Darbellay
Chas. Rubins Cheese Factory .....	Rosiere
W. Ullsperger Cheese Factory .....	Kodan
F. Geischow Cheese Factory .....	Kodan
Farmers' Cheese Co. ....	Lincoln
Jos. Dellain Cheese Factory .....	Lincoln
Augustine Noel Cheese Factory .....	Lincoln
Anna Wallechka Cheese Factory .....	Krok
Botthol Cheese Co. ....	Euren
J. B. Boucher Cheese Factory .....	Thiry Daems
Geo. Kozina Cheese Factory .....	Stangelville
Albert Kutsmacher Cheese Factory .....	Stangelville
Bach, Keewig & Poser Co. ....	Carlton
F. A. Plainsky Cheese Factory .....	Carlton
Carlton Farmers' Ass'n .....	Carlton
John Waegil Cheese Factory .....	Carlton
J. B. Albright Cheese Factory .....	Carlton
A. W. Arpin Cheese Factory .....	Carlton

A. W. Teske Cheese Factory and Creamery.....	Alaska
Sealler Cheese Factory .....	Alaska
J. Schneider Cheese Factory .....	Alaska
Alb. Kretsmacher Cheese Factory.....	Ellisville
Joe Roth Cheese Factory.....	Ellisville
Bernhart Lust Cheese Factory .....	Ellisville
Alb. Gasche Cheese Factory.....	Ellisville
Carl Schneider Cheese Factory.....	Ellisville
Mat Schleis Cheese Factory .....	Ellisville
Andrew Mahlek Cheese Factory .....	Pilsen
Jac. Gasche Cheese Factory.....	Pilsen
Chas. Peterson Cheese Factory (2) .....	Sandy Bay
J. Waegli Cheese Factory .....	Sandy Bay
Wm. Barrette, Jr., Cheese Factory .....	Duvall
D. Boulanger Cheese Factory .....	Duvall
M. Miller Cheese Factory .....	Norman
W. Sipple Cheese Factory.....	Norman
J. W. Rilka Cheese Factory.....	Norman
C. A. Guth Cheese Factory .....	Algoma
Ahnapee Farmer Co. ....	Algoma
J. Gullickson Cheese Factory .....	Woodside
Kozina Cheese Factory .....	Bolt
P. Lyons Cheese Factory .....	Bolt
Ley & Liebel Cheese Factory.....	Luxembourg
Aug. Spitzer Cheese Factory .....	Luxembourg
Michael Legardt Cheese Factory and Creamery.....	Luxembourg
Victor Bonjean Cheese Factory .....	Tonet
Antoine Bredael Cheese Factory .....	Tonet
Fred Heavers' Cheese Factory .....	Walhain
Geo. Kuelsel Cheese Factory .....	Walhain
Joe. Fitz Cheese Factory .....	Walhain
Anton Bredall Cheese Factory .....	Rostok
Fred Goetke Cheese Factory .....	Rankin
P. Entringer Cheese Factory .....	Rankin
Anton Rassel Cheese Factory .....	Euren

LA CROSSE COUNTY.

Bangor Cheese Co. ....	F. Wolf, Bangor
Coon Valley Cheese Factory .....	F. Strupp, Coon Valley
Middle Ridge Cheese Factory.....	Peter Arentz, Middle Ridge
Shelby Cheese Co. ....	Henry Schild, Pres., Sigel
Burnham Valley Cheese Factory .....	Burns

LA FAYETTE COUNTY.

Wells' Cheese Factory .....	John Wells, Woodford
Hanson Cheese Factory .....	A. S. Hanson, Woodford
River Bend Cheese Co.....	Theo. N. Tollackson, Argyle
Owego Bend Cheese Co.....	John McGrath, Argyle
Spore Cheese Co. ....	Wm. Spore, Wiota
Wiota Cheese Co. ....	P. J. Brenäum, Wiota
Lycan Cheese Co. ....	C. P. Lycan, Wiota
Foley Cheese Co. ....	E. M. Erickson, Woodford
Quinn Cheese Co. ....	John Strub, Wiota

## REPORT OF THE WISCONSIN

Stewart Cheese Co. ....	Richard Stewart, Wlota
Truman Cheese Factory .....	Emile Pettet, Truman
Leslie Cheese and Butter Co. ....	Elgin Creamery Co., Belmont
O'Connor Cheese Factory .....	Farmers' Co., Darlington
Success Cheese Factory .....	Farmers' Co., Darlington
Light House Cheese Factory .....	Farmers' Co., Belmont
Winter's Cheese Factory .....	Bred. Blinner, Gratiot
Egan Cheese Factory .....	Gottlieb Rolli, Gratiot
Opie Cheese Factory .....	Fred Lichtl, Warrens, Ill.
Andrews' Cheese Factory .....	Warren, Ill.
Rouenrud Cheese Factory .....	Fred Niederhauser, Gratiot
Brumm Cheese Factory .....	Dedric Weiss, Gratiot
McCoy Cheese Factory .....	R. H. Driver, Darlington
Vipond Cheese Factory .....	John Vipond, Mgr., Shullsburg
Conley Cheese Factory .....	Thos. Conley, Fayette
Brunkow Cheese Factory .....	Wm. Renniston, Fayette
Soarch Cheese Factory .....	Yellow Stone
Cline Cheese Factory .....	A. C. Cline, Fayette
Oleson Cheese Factory .....	A. Oleson, Lamont
McClintic Cheese Factory .....	Alb. Hanson, Yellowstone
Darrah & Hanson Cheese Co. ....	Thos. Hanson, Yellowstone
Serch Cheese Co. ....	Christ. Sorum, Yellowstone
Ingwell Dairy Co. ....	Jas. Ingwell, Blanchardville
O. M. Oleson Cheese Co. ....	C. N. Rood, Blanchardville
Wayne Center Cheese Co. ....	P. Jecklyn, So. Wayne
Murphy Cheese Co. ....	Ulrich Nufer, So. Wayne
Hall Cheese Factory .....	Peter Jecklyn, So. Wayne
Johnson Cheese Co. ....	John Warren, So. Wayne
Graham Cheese Co. ....	S. Rathlesberger, Warren, Ill.
Gus Vinger Cheese Co. ....	Argyle
Peter Legler Cheese Co. ....	Argyle
C. C. Lien Cheese Co. ....	Argyle
John Everson Cheese Factory .....	Argyle
John Everson Cheese Co. ....	Argyle
Simon Hendrickson Cheese Factory .....	Argyle
C. H. Thompson Cheese Co. ....	Argyle
Albert Toole Cheese Co. ....	Darlington
R. F. Carpenter Cheese Co. ....	Darlington
Otter Creek Cheese Co. ....	Darlington
P. B. & E. G. Barlow .....	Darlington
E. Regez .....	Blanchardville
L. Meyers .....	Red Rock
McCoy Butter and Cheese Co. ....	Gratiot
Whiteside Cheese Factory .....	Lamont
Dublin Cheese Factory .....	Darlington
John Hueigl .....	Truman
G. Kemffer (Union Factory) .....	Coleman
Smith's Factory .....	Dunbarton
D. Wyss (3) .....	Monroe

## LANGLADE COUNTY.

Jos. Marx Cheese Factory .....	Phlox
Antigo Cheese Factory .....	Edward Ruska, Antigo
Rolling Cheese Co. ....	F. Kalkophen, Elmhurst



LINCOLN COUNTY.

Carl Dickert ..... Corning

MANITOWOC COUNTY.

Jos. F. Rapple Cheese Factory (2).....Clark's Mills  
 Madson & Pederson Cheese Factory.....Oslo  
 Peter Geimer Cheese Factory .....Larrabee  
 Adolph Seidl Cheese Factory.....Larrabee  
 Jos. Geimer Cheese Factory .....Cooperstown  
 Edw. Kostlivy Cheese Factory.....Melnik  
 Wenzel Podhola Cheese Factory.....Melnik  
 Aug. Baeslager Cheese Factory .....Steinthal  
 Alb. Fokett Cheese Factory .....Reif  
 Anton Benishkek Cheese Factory.....Manitowoc  
 Adam Jerikovic Cheese Factory.....Kellnersville  
 Jos. Havlichek Cheese Factory.....Francis Creek  
 P. C. Blesser Cheese Factory .....King's Bridge  
 Herman Specht Cheese Factory .....Manitowoc  
 Chas. Fokett Cheese Factory .....Francis Creek  
 Wm. Vogelsang Cheese Factory .....Osman  
 Wm. Roderwald Cheese Factory.....Timothy  
 Lakeside Cheese Factory and Creamery .....Martin Rhoads, Nordheim  
 Wm. Vetting Cheese Factory.....Newtonburgh  
 Jos. Berger Cheese Factory .....Rosecrans  
 Jos. Shuber Cheese Factory.....Greenstreet  
 Louis Saenger Cheese Factory .....Stark  
 Erdman's Factory .....Aug. Erdman, Nero  
 G. Pfister Est. Cheese Factory (2) .....W. A. Koch, Nero  
 Geo. Glover Cheese Factory .....Reedsville  
 Henry Bladoren Cheese Factory .....Reedsville  
 Alb. Natzke Cheese Factory.....Reedsville  
 Wm. Meyer Cheese Factory .....Kasson  
 Fred. Fredrick Cheese Factory.....Reedsville  
 Maedke & Junker Cheese Factory .....Brillion  
 Ole O. Gigstad Cheese Factory .....Valders  
 J. F. Kasbaum Cheese Factory.....Rube  
 E. F. Wehausen Cheese Factory .....Rube  
 John Johnson Cheese Factory.....Eaton  
 J. J. Holzschue Cheese Factory and Creamery.....St. Nazianz  
 Fred Bramer Cheese Factory and Creamery.....Manitowoc  
 Chas. Specht Cheese Factory .....Bleser  
 Joe Willeim Cheese Factory.....Alverno  
 Henry Pleuss Cheese Factory.....Manitowoc  
 Q. A. Danforth Cheese Factory.....Meeme  
 Fred. Roethel Cheese Factory.....Ada  
 Wm. Faker Cheese Factory and Creamery.....Schoolhill  
 Rub. Frusson Cheese Factory and Creamery.....Osman  
 P. H. Hertel Cheese Factory and Creamery.....Meeme  
 Ferd. Olm Cheese Factory and Creamery.....Edwards  
 Louis Voight .....Louis Corners  
 Frank Thielke Cheese Factory and Creamery.....Louis Corners  
 Aug. Schleuner Cheese Factory and Creamery.....Mill Home  
 Otto Karstaedt .....Kiel  
 Louis Ibeling .....Schleswig

Chas. Weinfurther Cheese Factory and Creamery.....	Mishicot
Aug. Fehrman Cheese Factory and Creamery.....	Mishicot
Fred Wilde Cheese Factory.....	Mishicot
Mrs. H. Engellandt Cheese Factory.....	Mishicot
John Cholloupni Cheese Factory.....	Tisch Mills
Mat. Tisler Cheese Factory.....	Menchalville
J. D. Nate Cheese Factory.....	Maple Grove
A. Svacna.....	Taus
Adolph Mithaus.....	Reedsville
Ferd. Kleist Cheese Factory.....	Reedsville
W. M. Krueger Cheese Factory.....	Reedsville
Wm. Halversen Cheese Factory.....	Collins
Wm. Fischer Cheese Factory.....	Collins
Robt. Nauman Cheese Factory.....	Manitowoc
Chas. F. Meinert Cheese Factory.....	Branch
Henry Hune Cheese Factory.....	Branch
Henry Heberer Cheese Factory.....	Grimms
Peter Malson.....	Alverno
Vogle Bros. Cheese Factory.....	Mishicot
Herman Olm Cheese Factory.....	Collins
F. H. Wagenrecht Cheese Factory.....	Kiel
Henry Hinges Cheese Factory.....	Hika
Oscar Barnel Cheese Factory.....	Hika
Wm. Zollman Cheese Factory.....	Kiel
John Mallman.....	Quarry
Lewis Rank.....	Kellnerville
N. J. Trossen.....	Osman
R. F. Buchholz.....	Rangeline
Medke & Junker.....	Brillion
F. A. Kellsmeier.....	Hika

## MARATHON COUNTY.

Anton Loy Cheese Factory.....	Stettin
S. E. Machmueller Cheese Factory.....	Stettin
Nicklaus Sureveler Cheese Factory.....	Rozellville
John Knoeck Cheese Factory.....	Marathon
Ed. Pilsch Cheese Factory.....	Ziegler
Herm. Bauman Cheese Factory.....	Naugart
Wm. Tesch Cheese Factory.....	Naugart
G. A. Kreutzer Cheese Factory.....	Athens
Ed. Schaller Cheese Factory.....	Athens
C. Dubi Cheese Factory.....	Athens
John Groff Cheese Factory.....	Wausau
Henry Toege Cheese Factory.....	Taegesville
Herman Meyer Cheese Factory.....	Merrill
Louis Weller Cheese Factory.....	Colby
Louis Girel Cheese Factory.....	Colby
Pine Riv. & Texas Cheese Co.....	Wm. Gensmann, Finn
Jos. Chesak Cheese Factory.....	Poniatowski
Eldron Cheese Co.....	Chas. Radke, Eland Junc.
Eldron Cheese Co.....	Chas. Radke, Eland Junc.
Julius F. Koch Cheese Factory.....	McMillan
Neshkoro Cheese & Butter Co.....	Rob. Leige, Neshkoro
A. F. Barchardt Cheese Factory.....	Spencer
Fred Michler Cheese Factory.....	Wein
Herman Hahn Cheese Factory.....	Nutterville

Henry Jacobi .....	Denny
Jacob Keehl .....	Denny
Jos. Frane .....	Unity
Brighton Cheese Factory .....	Unity
Wm. B. McPherson .....	Spencer
Adolph Hintze .....	Hogarty

MARINETTE COUNTY.

Louis A. Krueger Cheese Factory .....	Pound
C. Plinke .....	Peshtigo
Maple Ridge Cheese Co. ....	Marinette
Pound Cheese Co. ....	Pound

MONROE COUNTY.

Baldwin & Wyman Cheese Factory .....	Glendale
Vuricks Cheese Co. ....	Norwalk
Bohn's Cheese Factory .....	Chas. Zraggen, Norwalk
The Council Creek Cheese Factory .....	M. L. Hineman, Tomah
Alex. Eberhardt Cheese Factory .....	Clifton
St. Mary's Cheese Factory Co. ....	Martin Phyl, St. Mary's
Alex. Kloetzli Factory .....	Norwalk

OCONTO COUNTY.

R. H. Birr Cheese Factory .....	Morgan
C. B. Dollma Cheese Factory .....	Hintz
Spruce Cheese Factory .....	Wm. Teske, Spruce
Hayes Cheese Factory .....	H. F. Mueller, Hayes
H. Schultz .....	Abrams

OUTAGAMIE COUNTY.

Otto Bergmann Cheese Factory .....	Black Creek
Ferd. Zochall Cheese Factory .....	Black Creek
Mick Helton Cheese Factory .....	Black Creek
Bernard Griese Cheese Factory .....	Binghamton
Fred Hadler Cheese Factory .....	Appleton
Wm. Indermuehle Cheese Factory .....	Appleton
Marx Lemke Cheese Factory .....	Kaukauna
Mosquito Hill Cheese Factory .....	B. S. Vanams, New London
Falk Cheese Factory .....	New London
W. C. Manley Cheese Factory .....	Stephensville
Peter Dooley Cheese Factory .....	Stephensville
Patrick Wallace Cheese Factory .....	Stephensville
Peter Fasbender Cheese Factory .....	Bungert
Joe Thielke Cheese Factory .....	Clintonville
J. Armstrong (2) .....	Welcome
Bernard Rhoden Cheese Factory .....	Helena
Oswald Schneider Cheese Factory .....	Appleton
Julius Siefert Cheese Factory and Creamery .....	Appleton
John Grupe Cheese Factory and Creamery .....	Greenville
John Kuehne Cheese Factory .....	Leeman

J. F. Bachman Cheese Factory	Black Creek
Owen Falley Cheese Factory	Lawrenceville
Chas. Hahn Cheese Factory	Cicero
Edw. Withwer Cheese Factory	Black Creek
Otto Braas Cheese Factory	Black Creek
Ed. Kleist Cheese Factory	Seymour
Henry Kuchenbacher Cheese Factory	Seymour
Paul Kampne Cheese Factory	Seymour
Anton Kolb Cheese Factory	Seymour
Otto Pfingston Cheese Factory	Seymour
Milo Hogoboom Cheese Factory	Appleton
W. Schuber Cheese Factory	Batley
R. C. Jeske Cheese Factory	Mackville
C. Schuler Cheese Factory	Binghamton
Henry Greb Cheese Factory	Seymour
Anton Plutz Cheese Factory	Seymour
Chas. Broderick Cheese Factory	So. Osborn
Harris & Rood Butter and Cheese Co.	Medina
W. L. Root & Co. Cheese Factory	C. N. Vanam, Medina
N. Simon & Co. Cheese Factory	J. Cannon, Mgr., Dale
A. Nelson Cheese Factory	Dale
B. Nelson Factory No. 1.	Dale
B. Nelson Factory No. 2.	Dale
A. H. Drew's Factory	Dale
C. Rickman	Readfield, Waupaca Co.
L. Dabareiner & Co.	Hortonville
J. B. Linzmeyer	Seymour
Oswald Schneider Factory	Neenah, Winnebago Co.
Medina Cheese Co.	Medina
Outagamie Cheese Co.	Appleton
A. Drews	Dale
Dale Cheese and Butter Co.	Dale
J. Verholst	Readfield, Waupaca Co.
P. Pelkey	Welcome
W. N. Bergman	Welcome

## OZAUKEE COUNTY.

King & Gearhard Cheese Factory	Grafton
Peter Schueler	Belgium
J. J. Termes	Belgium
Losey Webster	Belgium
H. P. Mueller	Belgium
Frank Wittyer	Belgium
John Depies	Belgium
A. Antoine	Belgium
F. B. Wellensten	Belgium
John Termes	Belgium
H. J. Wester	Belgium
C. H. Witt	Fredonia
Kunny Bros.	Fredonia
J. H. Klessig	Fredonia
Chas. Rehm	Fredonia
Dan Wittinger	Kohler
N. E. Spies	Random Lake
J. B. Depiesse	Holy Cross
Elizabeth Laege	Port Washington

Nic. Pauly .....	Port Washington
J. F. Wellenstein .....	Port Washington
Pauly & Johannes .....	Port Washington
Albert Koopman .....	Port Washington
St. Augustin Cheese Factory.....	Newburg
Zimmerman Cheese Factory .....	Saukville
Pfeifer's Cheese Factory .....	Cedarburg
Town 10 Cheese Factory.....	Saukville

PIERCE COUNTY.

Louis Guiser Cheese Factory .....	Martell
Math. Gilles Cheese Factory.....	Plum City
Sam Sampson Cheese Factory .....	Olivet
Tanberg Bros. Cheese Factory .....	Spring Valley
Lawton Cheese Co. ....	Lawton
Clayfield Cheese Factory.....	Ed. Copp, owner, Ono
El Paso Co-op. Cheese Co.....	O. O. Stein, Pres., El Paso
Union Co-op. Cheese Co.....	El Paso

POLK COUNTY.

Patterson Factory .....	Patterson
Nye Cheese Factory .....	E. B. Van Heyne, Osceola

PRICE COUNTY.

Omega Dairy Ass'n .....	J. J. Lansworth, Sec'y, Omega
P. E. Johnson Cheese Factory.....	Spirit

RICHLAND COUNTY.

Henrietta Cheese Co. ....	Henrietta
Hub City Cheese Co. ....	Wm. Nesbit, Mgr., Hub City
Woodstock Cheese Co.....	Wm. Nesbit, Mgr., Hub City
Buckhorn Cheese Co.....	J. Donner, Balmoral
Gault Cheese Co.....	J. Donner, Balmoral
Eagle Cheese Co.....	Chas. Moore, Balmoral
Basswood Cheese Factory .....	H. J. Noyse, Muscoda, Grant Co.
Cazenovia Factory .....	Henry Kellner, Cazenovia
Carroll Cheese Factory .....	John Carroll, Cazenovia
G. E. Miles Cheese Factory.....	Twin Bluffs
H. J. Noyes Cheese Factory .....	Richland City
H. A. Runyan Cheese Factory.....	Dixon
Byrd's Creek Cheese Factory.....	Byrd's Creek
Thos. Johnston .....	Boaz
Robinson & Schumacher .....	Boaz
Pat Cranston .....	Sabin
Viola Cheese Factory .....	Kinder & Warner, Viola
Buck Creek Cheese Factory.....	Howard Huffman, Mgr., Buck Creek
Strausburg Cheese Factory .....	Chas. Strausburg, Loyd
H. J. Noyes .....	West Lima
Cheese Factory .....	Bloom City
Cheese Factory .....	Yuba
Cheese Factory .....	Woodstock

P. Cranston .....	Sabin
Cheese Factory .....	Richland Center
Akam Factory .....	Five Points
Ithaca Factory .....	Ithaca
H. J. Noyes .....	Bear Valley
Excelsior .....	Excelsior
Cheese Factory .....	Byrd's Creek
Chas. Mower .....	Eagle Corners
H. J. Noyes .....	Basswood
Kilmer & Bauer .....	Cazenovia

## ROCK COUNTY.

F. O. Uehling & Co. ....	Hanover
Wm. Borst Cheese Factory .....	Johnstown
Harvey Godfrey Cheese Factory .....	Lima Center
Maple Grove Cheese Factory .....	H. J. Bullock, Janesville
Home Cheese Factory .....	H. Godfrey, Whitewater..
Swiss Cheese Factory .....	Chas. Zerchy, Mgr., Brodhead
Center Cheese Factory .....	J. F. Dickey, Sec., Brodhead
Spring Valley Cheese Factory .....	Robert Jack, Brodhead
Synstegarde Cheese Factory .....	Geo. Bernath, Brodhead
H. Lee Cheese Factory .....	Orfordville
Newark Cheese Factory .....	R. C. Rostad, Beloit
Orfordville Cheese Factory .....	Orfordville
John Drier (Avon Factory) .....	Orfordville
Speich & Co. ....	Brodhead

## SAUK COUNTY.

Rice Bros. Cheese Factory .....	Sandusky
Big Hollow Cheese Factory .....	Henry Ellefson, Spring Green
Geo. Ward Cheese Factory .....	Bear Valley
Josiah Maxwell Cheese Factory .....	Delos Beckwith, Lone Rock
Little Bear Cheese Factory .....	Delos Beckwith, Lone Rock
Dederich Cheese Factory .....	Delos Beckwith, Lone Rock
Chas. Waddell Cheese Factory .....	Baraboo
Ironton Cheese Factory .....	John Doyle, Mgr., Ironton
Cheese Factory .....	Blackhawk

## SHEBOYGAN COUNTY.

Erdmann Cheese Factory .....	Sheboygan R. F. D. No. 2
Herman Benchel .....	Sheboygan R. F. D. No. 2
Wm. Ochs .....	Sheboygan R. F. D. No. 2
Chas. Harms .....	Sheboygan R. F. D. No. 2
G. Kuntz & Co. ....	Sheboygan
Fred A. Gartman .....	Sheboygan
F. Wm. Gartman .....	Sheboygan
John Dassow .....	Sheboygan Falls
Hugo Alves .....	Sheboygan Falls
H. A. Rehm .....	Sheboygan Falls
R. A. Dassow .....	Sheboygan Falls
Chris Reinecke .....	Sheboygan Falls
Geo. Beeck .....	Sheboygan Falls
Chas. Kohl .....	Sheboygan Falls

Berte Hennepe .....	Sheboygan Falls
Fred Wider .....	Sheboygan Falls
H. F. Koenig .....	Sheboygan Falls
Otto Ehrlich .....	Sheboygan Falls
A. B. Melendy .....	Sheboygan Falls
Aug. Dassaw .....	Sheboygan Falls
H. M. Scott .....	Sheboygan Falls
M. McKinnon .....	Sheboygan Falls
F. Fenner .....	Sheboygan Falls
J. E. Curtis .....	Plymouth
H. Schiebe .....	Plymouth
Frank Gowin .....	Plymouth
Wm. Paasch .....	Plymouth
M. L. Mathews .....	Plymouth
Pine Tree Cheese Factory .....	Plymouth
H. A. Chapman .....	Plymouth
Wm. John .....	Plymouth
A. Riese .....	Plymouth
Christ Luecke .....	Plymouth
Joe Rohda .....	Plymouth
Euhler Co. (successor to) .....	Plymouth
Champeny Creamery Co. ....	Plymouth
C. H. Budhern .....	Cascade
E. J. Keyes .....	Cascade
Mechelke Bros. (?) .....	Cascade
L. Goering .....	Parnell
P. Schuler .....	Dacada
Thos. Bickler .....	Dacada
Fred Bemeking .....	Franklin
H. A. Rehm .....	Franklin
Wm. F. Gartman .....	Saint George
Charles Gartman .....	Saint George
J. H. Thackray .....	Glenheulah
Barragar Factory .....	Glenheulah
Albert V. Garling .....	Glenheulah
Geo. E. Webb .....	Glenheulah
H. E. Buechel .....	Mosel
B. Schrieber .....	Mosel
Wm. Ochos .....	Mosel
L. W. Lindow .....	Mosel
Erdman & Boll .....	Erdman
Cleveland Creamery Co. (3) .....	Cleveland
F. Olm .....	Edwards
L. Goehring .....	Edwards
Hersdorf & Hahn (2) .....	Edwards
Fred Luecke .....	Edwards
F. Boldt .....	Gibbsville
John Rowerdink .....	Gibbsville
J. Halwachs .....	Howard
Ed. Schneider (2) .....	Howard
Ed. Erbstoesser .....	Howard
J. F. Kalk .....	Howard
Fred Lueke .....	Howard
Chris. Strassburger .....	Howard
Geo. Horneck .....	Rhine
Henry Horneck .....	Rhine
J. G. Gessert .....	Rhine
Gootenhaus & C. Ronde .....	Cedar Grove
T. Walvoord .....	Cedar Grove

Ed. Teronde .....	Cedar Grove
G. Wissink .....	Cedar Grove
Geo. Bloomers .....	Cedar Grove
Huenink Bros. ....	Cedar Grove
J. E. Dane .....	Cedar Grove
I. DeSmidt .....	Cedar Grove
G. Grootenhais .....	Cedar Grove
John LeRonde .....	Cedar Grove
Ed. Koehl .....	Waldo
J. S. Twoing .....	Waldo
O. G. Eichhorst .....	Waldo
Gus. Brickbauer .....	Elkhart
W. Reinick Cheese Factory .....	Elkhart
Buchel Bros. ....	Adell
Anton Fochs Factory .....	Adell
G. W. Kuehne Factory .....	Adell
John L. Magritz .....	Adell
J. Mulgey .....	Random Lake
Nic Spies .....	Random Lake
J. F. Moehrl .....	Silver Creek
Frank Strauss Factory .....	Random Lake
Emil Speiker .....	Random Lake
F. J. Mulney .....	Hingham
Robert Donath (2) .....	Scott
John Auppelle .....	Scott
Aug. Speath .....	Scott
J. D. Schmitz Cheese Factory .....	St. Anna
G. C. Mayhew .....	Greenbush
F. H. Ubbelohde .....	Greenbush
Keach Factory .....	Greenbush
Chas. Webb .....	Greenbush
Wm. Kuehne .....	Hoard
E. Vandewald .....	Hoard
John Cosgrove .....	Rathburn
W. Zelms .....	Rathburn
F. McNicholas .....	Plus
F. F. Mais .....	Johnsonville
H. Schultz .....	Johnsonville
J. Gessert .....	Johnsonville
Kruening & Hoffinan .....	Oostburg
Robert Koeppel .....	Oostburg
Wm. Huenink .....	Oostburg
L. Sieblink .....	Oostburg
A. J. DeRonde .....	Oostburg
J. Aupperla .....	Bollonville
Koch, Janson & Butzke .....	Beechwood
W. A. Zelm .....	Plymouth
C. H. Leucke .....	Plymouth
F. Seemans .....	Plymouth
L. Helmer .....	Plymouth
C. Kuehn .....	Cedar Grove
I. Fernes .....	Cedar Grove
Mike Bittner .....	Cedar Grove
E. Krennen .....	Oostburg
W. Rowerdink .....	Oostburg
Lemkine & Siebelink .....	Gibbsville
E. Koeppel .....	Gibbsville
M. Mulvey .....	Hingham
W. Toohy .....	Plymouth



A. Zelu .....	Plymouth
T. Gessert .....	Plymouth
Geo. Mayhew .....	Plymouth
A. Leuthe .....	Plymouth
Rich & Franz .....	Plymouth
Emil Wilder .....	Erdman
E. Olm & Co. ....	Edwards
E. Kohl .....	Howard
T. H. Lamb .....	Hoard
B. Huenink .....	Dacada
M. Kramer .....	Ada
T. Spindler .....	Edwards
E. B. Melendy .....	Gibbsville
Otto Ehrlich .....	Gibbsville
Humphrey & Fehlen .....	Sheboygan Falls
F. Widdes .....	Sheboygan Falls
Fred Ries .....	Plymouth
E. Curtis .....	Plymouth
A. Vater .....	Plymouth
W. Elder .....	Plymouth

## SHAWANO COUNTY.

Farmers Cheese Co .....	Pella
F. J. Jeske Cheese Factory .....	Briarton
Albert Eker Cheese Factory .....	Wellhaven
Charley Ganchow Cheese Factory .....	Landsatd
G. B. Mattoon Cheese Factory .....	Mattoon
Cheese Factory .....	J. S. Brummel, Pulcifer
Waukechan Cheese Factory .....	J. J. Lund, Riverside
Birnamwood Cheese Factory .....	Chas. Meisner, Birnamwood
Split Rock Cheese Factory .....	Split Rock
Otto Timreck Cheese Factory .....	Bonduel
Ganham Bros. Cheese Factory .....	Bonduel
Aug. Natzke Cheese Factory .....	Bonduel
Jos. Brommel Cheese Factory .....	Pulcifer
Chas. Hanson Cheese Factory .....	Hilda
F. Krueger Cheese Factory .....	Hofa Park
Belle Plaine Creamery & Cheese Co. ....	Belle Plaine
J. E. Roepke Cheese Factory .....	Birnamwood
W. R. Mills Cheese Factory .....	Bonduel

## ST. CROIX COUNTY.

Gaughans Cheese Factory .....	H. A. Gaughans, Jewetts Mills
Pine Lake Cheese Factory .....	F. Holle, Baldwin
O'Malley Bros. Co-Operative Cheese Factory .....	Stanton
Boardman Cheese Factory .....	Glenwood
Jake Bol Cheese Factory .....	Baldwin
Emerald Cheese Factory .....	H. E. Jepson, Emerald
Somerset Cheese Factory .....	A. Lagrander Mgr., Somerset
Hatchville Cheese Factory .....	Cady
Glenwood Cheese Co .....	J. H. Wall, President, Glenwood

## TREMPEALEAU COUNTY.

Chimney Rock Cheese Co. ....	Wm. J. Ennison, La Crosse
Little Elk Cheese Factory .....	Wm. J. Ennison, La Crosse
Pigeon Cheese Factory Assn. ....	H. A. Frensted, Pigeon Falls
Dilly Cheese Co. ....	John Zigler, Valley
Valley Cheese Co. ....	John Zigler, Valley
Newton Butter & Cheese Assn. ....	Spangler & Becker, Newton
Brick Cheese Factory .....	F. W. Haufgarn, Chaseburg
Greenwood Cheese Factory .....	(Co-op.) A. F. Norg, Debello
Brinkman Cheese Factory .....	C. F. Brinkman, Brinkman

## WASHINGTON COUNTY.

Cheese Factory .....	H. Thoma, Richfield
Phil Kuhn Cheese Factory .....	Rockfield
W. Becker Cheese Factory .....	Rockfield
A. Steiner Cheese Factory .....	Meeker
Riverside Cheese Factory .....	Thos. Jordan, Barton
G. Kopp Cheese Factory .....	West Bend
Frank Foote Cheese Factory .....	Kewaskum
Erin Butter & Cheese Factory .....	Aug. Meier, Thompson
County Line Cheese Factory .....	Mike Murphy, North Lake
Hibernia Cheese Factory .....	Mike Murphy, North Lake
Thompson Cheese Factory .....	Mike Fitzgerald, Neosho
Maple Hill Cheese Factory .....	Mr. Winkler, North Lake
West Side Cheese Factory .....	Hartford
Henry Thoma Cheese Factory .....	Richfield
Lorenz Guth .....	Ackerville
Henry Becker .....	Jackson
Kohlsville Cheese Factory .....	Jac. Hamm, Kohlsville
Wayne Cheese Factory .....	John Petrie, Wayne
Wayne & Addison Cheese & Dairy Co. ....	Martin Horn, Kohlsville
John Dengals Cheese Factory .....	Wayne
West Side Cheese Factory .....	Frank Schuhjahn, Huilsburg
Henry Schowalter & Co. ....	Jackson
Jackson Butter & Cheese Co. ....	J. G. Frank, Jackson
Chas. Stauskey Cheese Co. ....	Salter
Keons Cheese Co. ....	G. Thalen, Keowns
Ed. Kuenze Cheese Factory .....	Richfield
West Bend Cheese Factory .....	Richfield
Hartford Cheese Factory .....	A. F. Reichow, Hartford
C. A. McCormick .....	West Bend
L. Schuyann .....	Hartford
Cedar Lake Cheese Factory .....	Schleisingserville

## WALWORTH COUNTY.

North Saaron Factory .....	Sharon
Troy Butter & Cheese Factory .....	W. J. Webster, Secretary, Troy
Troy Center Butter & Cheese Factory .....	(Wis. B. & C. Co.) Waukesha
Little Prairie B. & C. Factory .....	D. I. McAdams, Little Prairie
Adams Co-operative B. & C. Factory .....	J. Traser, Adams
North Geneva Butter & Cheese Factory .....	Harris & West, Elkhorn
Wisconsin Butter & Cheese Co. ....	Elkhorn
Wis. B. & C. Co. ....	North Geneva

Wis. B. & S. Co. ....	Tibbets
Wis. B. & C Co. ....	Tibbets
J. B. Wilson .....	Troy
Marshall & Krohn .....	Whitewater

WAUKESHA COUNTY.

Wisconsin Butter & Cheese Co.....	Walter A. West, Elkhorn
Mapleton Brick Cheese Co. ....	John Reid, Alderly
Templeton Factory .....	J. & M. Steiner, Milwaukee
Silver Lake Factory .....	Roach & Seeber, Oconomowoc
Monterey Factory .....	Roach & Seeber, Monterey
Factory .....	Hugo Meiswinkel, Marcy

WAUPACA COUNTY.

N. A. Nelson Cheese Factory .....	Weyauwega
Northport Cheese Factory .....	Morris Peterson, Northport
South Mukwa Cheese Factory .....	A. Westfallen, New London
Borhen Cheese Factory .....	A. J. Borhen, Fremont
Jerry Hickman Cheese Factory .....	Fremont
Stfange Cheese Factory .....	Wm. Strange, Fremont
Knoke Cheese Factory.....	J. Verholtz, Readfield
Farmers Co-operative Cheese Factory .....	A. O. Goll, Reams
Dupont Farmers' Cheese Co. ....	John Zern, Marion
Maple Valley Cheese Factory .....	L. D. Churchill, Marion
Enterprise Factory .....	J. Lemkie, Welcome (Outagamie Co.)
Nicholson Factory .....	P. H. Kasper, Nicholson
Poplar Grove Factory .....	F. W. Laux, Clintonville
W. T. Tilkey Factory .....	Clintonville
Nowell Cheese Factory (2 factories) .....	Otto E. Knoke, Nowell
Lebanon Cheese Factory .....	J. H. Roloff, New London
Arnold Grimm Cheese Factory .....	Manawa
John Rose Cheese Factory .....	Clintonville
John Koulsack Cheese Factory .....	Embarrass
Embarrass Silver Star Cheese Factory .....	Embarrass
G. W. Nelson Factory .....	Signaco
Marble Factory .....	S. Zheru, Marble
G. W. Nelson Factory .....	Symco
Marion Cheese Factory .....	Marion
E. A. Behn .....	Lind
C. B. Hall .....	Clintonville
R. H. Moldenhauer .....	Clintonville
Falkman Bros. ....	Dupont
Star Factory .....	Marion
Chas. Delo .....	Nicholson
C. Casper .....	Nicholson
C. A. Johnson .....	Nicholson
J. Zahn .....	Littlewolf
J. Thielke .....	New London
H. Woolrath .....	New London
W. O. Sells .....	New London
Schmall Bros. ....	New London
Factory .....	Weyauwega

## WAUSHARA COUNTY.

Borth Cheese Co. ....	John Kraatz, Borth
Holiday Cheese Factory .....	Wild Rose
Marion Cheese & Butter Co. ....	F. H. Johnson, Spring Lake
Silver Brook Cheese Co. ....	D. J. Jenny Co., Berlin
East Oasis Cheese Factory .....	P. H. Dorintz, Plainfield
Mt. Morris Butter & Cheese Co. ....	Fred Mitchell, Mt. Morris
Herman Koehler Cheese Factory .....	Brushville
Wm. Winter Cheese Factory .....	Tustin
L. N. Winter Cheese Factory .....	Tustin
Tustin Star Creamery Co., Stock Co. ....	Tustin
W. L. Jones Cheese Factory .....	Tustin
N. Simon & Co. ....	Tustin
E. Saxville Co. ....	W. Bloomfield

## WINNEBAGO COUNTY.

Cold Spring Cheese & Butter Co. ....	Jac. Wohld, Neenah
Wolf Hill Cheese Factory .....	H. T. Timm, Metz
Schneider Cheese Factory .....	Peter Schneider, Readfield
Spiegelberg Cheese Factory .....	Fred Spiegelberg, Boom
Pribbernow Cheese Factory .....	Wm. Pribbernow, Zittow
Winchester Cheese & Butter Co. ....	John Peterson, Winchester
Oak Grove Cheese & Butter Co. ....	Boom
Cornelius Cheese Factory .....	Charles B. Cornelius, Boom
C. Eckstein Cheese Factory .....	Winchester
Alb. Drews Cheese Factory .....	Readfield (Waupaca)
Charles Martin Cheese Factory .....	Winneconne
Mikesville Cheese Factory .....	C. Hough, Neenah
Johnsons Corners Factory .....	H. Ondt, Neenah
Wm. Ihde Factory .....	Neenah
C. Boss Factory .....	Clemansville
C. Perrin Factory .....	Clemansville
M. Kittel Factory .....	Oshkosh
John Ryff Factory .....	Oshkosh
John Greenwald Factory .....	Clemansville
Snells Station Cheese Factory .....	Neenah
Robie Cheese Factory .....	Oscar Manley, Mgr., Neenah
Germania Cheese Factory .....	Mark Wohld, Neenah
Faber Factory .....	G. Hauter, Neenah
Allenville Cheese Factory .....	Adolph Grimm, Allenville
Vosburg Cheese Factory .....	Ira Hackett, Allenville
Schneider Cheese Factory .....	Jac. Schneider, Allenville
Nick Grimm Cheese Factory .....	Clemansville
Sam Boss Cheese Factory .....	Clemansville
Scheller Cheese Factory .....	Mrs. H. Scheller, Oshkosh
Hough Cheese Factory .....	F. G. Cross & Co., Winneconne
Winneconne Cheese & Butter Co. ....	E. E. Clemons, Winneconne
Schneider Cheese Factory .....	Jos. Schneider, Winneconne
Butte Des Morts Cheese Factory .....	C. Reuteller, Butte Des Morts
Nekini Cheese Factory .....	I. McKinley, Mgr., Oshkosh
Omro Co-operative Butter & Cheese Co. ....	C. K. Whiting, Omro
Farmers Stock Co. Factory .....	Neenah
Metz Cheese Factory .....	N. Simon, Metz
Excelsior Cheese Co. ....	Neenah
Wolf Creek Creamery & Cheese Factory Co. ....	Eureka

Stacker Bros. ....	Neenah
J. Cowling .....	Clemansville
Casper Pfeiffer .....	Oshkosh
Winchester Butter & Cheese Co. ....	Larson
Johnson Factory .....	Larson
Adam Walters .....	Mikesville
Simon Factory .....	Allensville
M. Klute .....	(State Hospital) Oshkosh

## WOOD COUNTY.

Nick Straeffler Factories (2) .....	Hewitt
Farmers Co-operative Cheese Factory of Auburndale .....	Auburndale
Herman F. Theil Cheese Factory .....	Marshfield
Anton Hensler Cheese Factory .....	Marshfield
Sigel Brick Cheese Co. ....	Johnson & Hill Co., Grand Rapids
Sigel Amer. Cheese Co. ....	Johnson & Hill Co., Grand Rapids
Lorenz Seidl Cheese Factory .....	Blenker
A. J. Empey Cheese Factory .....	Milladore
Seneca Cheese Factory .....	Johnson & Hill Co., West Grand Rapids
Fuller & Hathway .....	Marshfield
Jennings Creamery Co. ....	Marshfield
John Henseler .....	Marshfield

## LIST OF CREAMERIES IN WISCONSIN.

## ADAMS COUNTY.

Spring Creek Creamery .....	Westman, Necedah
Easton Dairy Products Ass'n, W. I. Colby, President .....	Easton
John Mc Grane Creamery .....	Leola
Leola Creamery Co. ....	Leola

## ASHLAND COUNTY.

Creamery .....	W. Whitten, Butternut
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## BARRON COUNTY.

The Spring Hill Creamery Co. ....	C. Burghurst, Mgr., Chetek
Rice Lake Creamery .....	Rice Lake
Prairie Farm Creamery Co. ....	P. Christman, Sec., Prairie Farm
Gathered Cream Factory .....	O. G. Peterson, Prairie Farm
Barron Creamery Co. ....	N. M. Rockman, Barron
Cumberland Creamery Co. ....	S. H. Waterman, Cumberland
Almena Creamery .....	Charles Kammerer, Almena
Arland Co-operative Butter & Cheese Co., .....	Ole Johnson Mgr., Arland
Canton Creamery & Cheese Co. ....	Canton
Bahler Bros. ....	Cambria
Creamery .....	Turtle Lake
Apple River Creamery .....	Reeve
Horsnoe Lake Co-operative Creamery Co. ....	Perley

## BROWN COUNTY.

Oak Grove Dairy .....	H. A. Law, Green Bay
E. R. V. Creamery Co. ....	Jas. Smith, DePere
Lawrence Creamery .....	Dan Longteau, West DePere
White Clover Co-operative Creamery .....	Holland
The W. DePere Co-operative Creamery Co. ....	J. Vanderlinden, Sec., W. DePere
Enz Bros. & Co. ....	Denmark
Frank Sindzinski .....	Langes
Ferd Wittig .....	Fontenoy
Didrich Benecke .....	Fontenoy
Fred Buckman .....	Fontenoy
New Denmark Farmers Co-operat'ive Ass'n.....	Fontenoy

BURNETT COUNTY.

The Grantsburg Creamery .....	Grantsburg
Trade River Creamery .....	Trade River
Farmers Co-operative Creamery Soc. ....	Ed. C. Johnson, Falun
Doctor's Lake Creamery Soc. ....	Dan Johnson, Blanding
Wood River Creamery Co. ....	Aug. Cassel, Wood Lake
Farmers Creamery Co of Trade Lake .....	And Anderson, Trade Lake
Farmers Creamery Co. of Falun .....	A. G. Peterson, Falun
Farmers Creamery Co. of Trade Lake .....	Halmar Swenson, Trade River
Trade Lake Creamery Ass'n .....	Grantsburg

BUFFALO COUNTY.

Fountain City Co-operative Creamery Ass'n .....	A. E. Gerlach, Fountain City
Burnside Creamery Co. ....	C. A. VanBrunt, Mishamokwa
Nelson Creamery .....	Giebel & Armstrong, Nelson
Modena Creamery Co. ....	J. B. Meyer, Mgr., Modena
Frank Tritsch Creamery .....	Alma
Spring Creek Creamery .....	James Allison, Durand
Mondovi Dairymen's Ass'n .....	Mondovi
Gilman Valley Dairymen's Ass'n .....	Gilmanton
Mondovi Creamery Assn. ....	Mondovi

CALUMET COUNTY.

Stockbridge Creamery Co. ....	Stockbridge
F. J. Harder .....	Chilton
John Suyder .....	Brant
A. F. Decker .....	Chilton
W. A. Knauf .....	Chilton City
A. J. Nokes Creamery .....	Hilbert
Frank Zetsche Creamery .....	Greenwood
Darbov Butter & Cheese Co. ....	Darbov
Farmers' Creamery Manufacturing Co. ....	Brillion

CLARK COUNTY.

Longwood Co-op. Creamery .....	Longwood
Clark Co. Butter Co. ....	Mike Proch, Mgr., Globe
Christie Creamery Co. ....	Ross Paulson, Mgr., Granton
Granton Creamery .....	Ross Paulson, Mgr., Granton
H. B. J. Andrus Creamery .....	Neillsville
Pleasant Ridge Creamery .....	W. G. Hyslop, Mgr., Blair
Chas. Schlinsog Creamery .....	Granton
Albert Alberts Creamery .....	Thorp
Skimming Station .....	Geo. Bue, Shortville
Loyal Creamery .....	Jenks Bros., Loyal
Clark Cavitz Butter Co. ....	W. C. Thoma, Prest., Neillsville
Christie Creamery Co., .....	W. K. Armitage, Prest., Christie
Creamery .....	Jerry Danhertz, Thorp
Pine Valley Creamery.....	H. B. Andrews, Owner, Neillsville
Pleasant Ridge Creamery Co. ....	Neillsville
Clark Co. Swimming Station.....	Wm. Dux, Owner, Neillsville
Greenwood & Zetsche .....	Greenwood
Longwood Creamery .....	H. A. Bright, Black River Falls, (Jackson Co.)

## CHIPPEWA COUNTY.

Frank Pritzel .....	Eidsvold
Fagen Bros. ....	Stanley
A. Butcher .....	Boyd
A. P. Geiger .....	Boyd
Stanley Creamery .....	W. C. Bragg, Stanley
Bloomer Creamery Co. ....	Wm. Ruf, Bloomer
Farmers' Store Co. Creamery .....	Farmers' Store Co., Bloomer
Albertville Butter & Cheese Mfg. Co. ....	L. E. Schure, Mgr., Albertville
Silver Star Creamery .....	E. W. Hill, Appollonia
Chippewa Falls Separator and Creamery Co. ....	B. J. Sobdell, Chippewa Falls
Vale Creamery Co. ....	Vale
Cook's Valley Creamery (Co-op. Co.) .....	Cook's Valley
Star Creamery .....	Jens Stenehjelm, Cartwright
Thos. Kelley Creamery .....	Eagle Point
Creamery .....	Eagle Point
The La Fayette Dairying Co. ....	Chippewa Falls
La Fayette Creamery .....	W. V. Dorwin, Chippewa Falls

## COLUMBIA COUNTY.

M. W. Speer .....	Weyocena
Little Gem Creamery .....	Rocky Run
W. Hanson .....	Columbus
Fall River Creamery .....	Dodge & Korth, Fall River
Englewood Creamery .....	Chas. Britzman, Fall River
Sam'l Baehler Creamery .....	Cambria
Ward & Andrus' Creamery .....	Randolph
C. W. Chrisler .....	Lodi
Dodge & Dodge Creamery Co. ....	Lodi
Arians Creamery .....	Arian Bros., North Bristol
Starkers Creamery .....	John Starker, East Bristol
Creamery .....	Haas Bros., Kingston
Centerville Creamery .....	Sanderson & Co., Cambria
Creamery .....	Chas. Christian, Columbus
Kiefer Bros. Creamery .....	Pardeeville
Pielke's Creamery .....	Wm. Mielke, Rio
Field's Creamery .....	Jas. Frawley, Otsego
Doyleston Creamery .....	E. Britzman, Doyleston
Poynette Creamery .....	R. M. Buzzard, Poynette
Arlington Creamery .....	G. A. Kimbal, Mgr., Arlington
Hutchinson Creamery .....	Ward & Andrews, Randolph Center
Portage Creamery Co. ....	Wm. Fulton, Portage
Empire Creamery Co. ....	Morrisonville
Keyser Creamery .....	Keyser
The Henry Creamery .....	Lowville
Centerville Creamery Mfg. Co. ....	Cambria
Lodi Creamery Co. ....	Lodi

## CRAWFORD COUNTY.

Wauzeka Butter Co. ....	John Wunch, Mgr., Wauzeka
Soldiers' Grove Creamery .....	Wm. Ray, Soldiers' Grove
Sugar Creek Creamery .....	Ferryville
Co-operative Creamery Co. ....	Napoleon Coates, Prest., Eastman



Kickapoo Valley Creamery Co. ....	Stauben
Barnum Creamery Co. ....	Barnum
Seneca Dairy Association .....	Seneca
Champenny Creamery Co. ....	Dousman

DANE COUNTY.

Pierceville Creamery Co. ....	Roach & Seeber, Pierceville
Sun Prairie Creamery .....	Roach & Seeber, Sun Prairie
Black Earth Creamery Co. ....	Black Earth
C. F. Greenwood Creamery .....	H. H. Prescott, Rockdale
Fred Luder .....	Mt. Horeb
Fountain Creamery .....	Roach & Seeber, Waterloo
Bannon Creamery .....	E. C. Dodge, Lake Mills
Oak Park Creamery .....	M. B. Bergum, Marshall
Burke Creamery .....	Roach & Seeber, Burke
Token Creamery .....	Dodge & Dodge, Windsor
Storey Creamery .....	D. E. Wood Butter Co., Storey
Marshall Creamery .....	E. Marshall, Owner, Marshall
Medina Butter & Cheese Co. ....	M. Lindas, Secy., Marshall
Deansville Creamery Co. ....	Heber Knapton, Secy., Marshall
Wheeler Prairie Creamery Co. ....	A. J. Roberts, Mgr., Stoughton
Hanerville Creamery .....	Hanerville
North Bristol Co-op. Creamery Assn. ....	J. F. Cary, North Bristol
Golden Rod Creamery .....	Roach & Seeber (Waterloo), Bristol
C. F. Strasburg Creamery .....	Marshall
York Center Creamery .....	Thos. Murphy, Marshall
Half-way Prairie Creamery Co. ....	Wm. Fehlandt, Mgr., Mazomanie
Mazomanie Creamery Co. ....	J. H. Greening, Mazomanie
Belleville Creamery Co. ....	D. E. Wood & Co. (Elgin, Ill.), Belleville
Stuckey Bros. Creamery .....	Fred Stuckey, Elvers
Pleasant Valley Creamery .....	Chas. Bush, Peculiar
Enterprise Creamery .....	A. L. Parmenter, Mazomanie
Oergon Creamery .....	R. G. Ellis & Sons, Oregon
Sun Prairie Creamery .....	Roach & Seeber, Owners, Sun Prairie
Paoli Creamery Co. ....	Wm. Fischer, Mgr., Paoli
DeForest Butter & Cheese Co. ....	Ernst Karow, DeForest
North Windsor Creamery Co. ....	Ernst Karow, DeForest
Eclipse Creamery Co. ....	C. J. Dodge, Windsor
Davis Creamery .....	C. J. Dodge, Windsor
West Middleton Creamery Assn. ....	Frank Bell, Pres., Barwig
Hopkin Bros. Creamery .....	Middleton
Capital City Creamery .....	H. Berkholtz, Buttermaker, Middleton
Henry M. Zander Creamery .....	Cross Plains
Pine Bluff Creamery .....	John Kalschner, Pine Bluff
Cross Plains Dairy Assn. ....	Peter Noeltner, Cross Plains
Sun Prairie Creamery .....	Roach & Seeber, Owners, Sun Prairie
Roxbury Creamery .....	Reuben Hiney, Sauk City
Riverside Creamery .....	Reuben Hiney, Sauk City
Crystal Lake Creamery .....	Dodge Bros., Lodi
Co-operative Dairy Assn. ....	Society of Farmers, Black Earth
Prairie Queen Creamery Co. ....	John Christianson, Mgr., Cambridge
Rockdale Creamery Co. ....	John Torgerson, Mgr., Rockdale
Utica Creamery Co. ....	T. O. Mandt, Mgr., Utica
Capital City Dairy Creamery & Produce Co. ....	John Werin, Madison
University Creamery .....	University of Wis., Madison
Oak Hill Co-op. Creamery Co. ....	Hope
McFarland Creamery .....	Evereth Kock, McFarland

Kegonsa Creamery Co. ....	O. M. Arnold, Stoughton
Oak Hill Creamery Co. ....	T. O. Mandt, Utica
Deerfield Creamery .....	Roach & Seeber, Deerfield
London Creamery .....	Roach & Seeber, London
Dodge Creamery Assn. ....	E. C. Dodge, Deerfield
Oak Park Creamery Assn. ....	K. Evanson, Deerfield
Creamery .....	J. R. Ellis & Sons, Oregon
Melchin Karlscheners Creamery .....	Ashton
Springfield Corners Creamery .....	N. Robinson, Morrisonville
Hyers Corners Creamery .....	N. Robinson, Morrisonville
Syene Creamery .....	Capital City Creamery Co., Madison, Syene
Oak Hall Creamery Co. ....	Floyd
Mt. Horeb Creamery .....	Dahle Bros., Mt. Horeb
Waunakee Creamery Co. ....	Caspar Hilgers, Waunakee
Alblon Creamery .....	S. G. Moore, Alblon
Prairie Green Creamery .....	Deerfield
W. H. Spooner .....	Rutland
Capital City Creamery Co. ....	Madison
The City Ideal Creamery Co. ....	Madison
Farmers' Co-op. Creamery .....	Alblon
The Paoli Creamery Co. ....	Montrose
Patrons' Co-op. Creamery Co. ....	Waunakee
Wilke B. & C. Assn. ....	Verona
Dodge Creamery Assn. ....	Deerfield

## DODGE COUNTY.

Fox Lake Creamery .....	Ward & Andrews, Fox Lake
M. P. Radloff Creamery .....	Hustisford
Upland Creamery .....	Boehmer & Meier, Pondsville
Highland Creamery .....	Oscar Naber, Mayville
C. F. Meyer Creamery .....	Lomira
Lake Shore Creamery .....	Morris & Thomas, Fox Lake
Toland Creamery .....	Julius Webber, Mgr., Toland
Alderley Dairy Assn. ....	J. J. Reid, Mgr., Alderley
Clyman Station Creamery .....	Clyman Station
White Clover Creamery .....	Roach & Seeber, Waterloo
North Portland Creamery .....	Danville
Leader Cheese & Butter Assn. ....	G. H. Kohn, Reeseville
Reeseville Creamery .....	Wm. Ohrmund, Reeseville
Jonely Bros. Creamery .....	Emil Jonely, Mgr., Lomira
Beaver Dam Creamery Co. ....	Jas. Campbell, Prest., Beaver Dam
Riverside Creamery .....	Oscar Naber, Mayville
Griesemer & Heck Creamery .....	Iron Ridge
A. W. Lehmann Creamery .....	Mrs. A. W. Lehmann, Neosho
Juneau Creamery .....	Mansfield & Co., Juneau
Farmers' Co-op. Creamery .....	C. H. Smith, Rolling Prairie.
Gold Medal Creamery .....	G. W. Ohrmundt, Reeseville
Creamery .....	Henry Doroney, Waupun
Creamery .....	Wm. Campbell, Beaver Dam
Creamery .....	Mr. Gibson, Burnett Junction
Mansfield Creamery .....	Mansfield & Co., Juneau
Liberty Butter & Cheese Assn. ....	Jhanke Creamery Co., Mgr., Watertown
Posey Creamery .....	Edw. Barnick, Richwood
Shields Butter & Cheese Assn. ....	Wickert, Mgr., Hubblaton
Westford Butter & Cheese Factory .....	John Banes, Prest., Beaver Dam
Baehler Bros. Cheese & Butter Factory .....	Randolph
West Leroy Creamery .....	Leroy
Knowles Creamery .....	Lomira

Neosho Butter & Creamery Co. ....	Neosho
Richwood Creamery Co. ....	Richwood
Spring Brook Dairy Co. ....	Chester
Roach & Seeber .....	Clyman
E. Weber .....	Beaver Dam
Ell Hull .....	Lowell
E. A. Reese .....	Lowell
Chas. Christian .....	Danville
H. R. Moldenhauer .....	Hubbleton
H. Lenz .....	Watertown
Juneau Creamery .....	Watertown
H. Hicks & Co. ....	Iron Ridge
L. L. Bonniwell .....	Hartford
E. L. Arndt (2 creameries) .....	Beaver Dam
Geo. C. Mansfield & Co. ....	Horicon
Island Creamery .....	C. Prouss, Knowles
J. Jossi .....	Rosendale

## DOOR COUNTY.

Forestville Creamery .....	Stonemann Bros., Forestville
Jarchow's Creamery .....	Louis Jarchow, Forestville
Kolberg Creamery .....	Conrad R. Guth, Kolberg
Brussels Creamery .....	Pierre Verlie & Co., Brussels

## DUNN COUNTY.

Meridian Co-op. Creamery .....	L. E. Hagen, Meridian
Creamery .....	Thos. Wittger, Rusk
Sherman Cheese & Butter Co. ....	N. W. Peck, Menomonie
Washburn Farm Creamery .....	C. O. Thorp, Wheeler
Hudson Road Creamery .....	Martin Fladdon, Menomonie
Elk Mound Creamery Co. ....	Wm. Man, Elk Mound
Eau Galle Creamery .....	R. E. Graves, Mgr., Eau Galle
Tarrant & Sons .....	Claude Phillips, Secy., Durand
Irving Creek Creamery .....	Irvington
Downing Creamery Co. ....	Chas. Montanga, Downing
Dunnville Co-op. Creamery .....	Dunnville
Irvine Creek Creamery Co. ....	Menomonie
O. W. Marsee .....	Louisville
Louisville Creamery .....	Louisville
O. G. Kinnev, Mgr. ....	Colfax
E. L. Hawkins .....	Boyceville
DeWolf Creamery .....	DeWolf
Otter Creek Creamery .....	Wheeler
Spring Brook Creamery .....	Red Cedar
O. G. Peterson .....	Braille Farm

## EAU CLAIRE COUNTY.

Pleasant Valley Co-op. Creamery Co. ....	J. B. Meyer, Hadleyville
Brackett Creamery .....	Mannuel Hancke, Brackett
The Augusta Creamery .....	M. Victory & Co., Augusta
Fall Creek Creamery Co. ....	John Joern, Prest., Fall Creek
Fairchild Creamery Co. ....	Fairchild
Otter Creek Co-op. Creamery .....	Otter Creek

Cleghorn Corners Creamery .....	Eleva
J. B. Iverson .....	Eau Claire
Clear Creek Creamery .....	Augusta

## FOND DU LAC COUNTY.

Oak Grove Creamery .....	Jno. Gibson, Waupun
Creamery .....	L. Cebell, Waupun
Willow Creek Creamery .....	C. A. Atwood, Waupun
Prison City Creamery .....	Dodge, Waupun
Rock River Creamery .....	Bristol & Morgan Co., Oakfield
Rosendale Butter Factory .....	H. J. Grell, Johnson Creek
Atwood Butter Factory .....	Chas. Atwood, Ladoga
Creamery .....	Jenkins, Peebles
Creamery .....	Lewis Loehr, Johnsburg
Creamery .....	Grenel Bros., Silica
Mammoth Spring Creamery .....	Nast Bros., Marblehead
Anton Blonien Creamery & Cheese Factory .....	Albert Blonien, Johnsburg
Albert Behle Creamery & Cheese .....	Albert Behle, St. Cloud
Sand Rock .....	J. E. Amend, Ripon
Oakfield Creamery .....	Bristol & Morgan Co., Oakfield
Silver Spring Creamery .....	Bristol & Morgan Co., Waupun
North Byron Creamery .....	Bristol & Morgan Co., Byron
Highland Creamery .....	Highland Creamery Co., Kinwood
Oak Center Creamery .....	Cebell & Katenberg, Oak Center
Banner Creamery .....	Cebell & Katenberg, Waupun
Brandon Creamery .....	S. B. Friday, Brandon
Waupun Creamery Co. ....	J. C. Dodge, Waupun
Lamartine Creamery .....	C. L. Nash, Lamartine
Alpha Creamery .....	Mathias Michels (5), Garnet
Mathias Moersch Creamery .....	Calumet Harbor
Egidius Korb Creamery .....	Marytown
Fair Water Creamery .....	C. Glaus, Tess Corners
Hobbs Bros.' Creamery .....	Brandon
Rosendale Center Creamery .....	J. Amend, Ripon
West Rosendale Creamery .....	J. Amend, Ripon
Melrose Creamery .....	Zink & Stewart, Fond du Lac
Rosendale Creamery .....	G. E. Hoyt, Fond du Lac
Fountain City Creamery .....	Jenkins & Fisher (2), Fond du Lac
Town Line Creamery .....	Julius Weber, Fond du Lac
Elmwood Creamery .....	Rook & Joinly, Fond du Lac
Friendship Co-op. Creamery Co. ....	Van Dyne
Highpoint Co-op. Creamery Co. ....	Eden
Oakwood Creamery Co. ....	Waupun
Ennison Bros. ....	Eldorado
J. A. Amend Reeds Corners Creamery .....	Ripon
J. Amend, Carters Corners Creamery .....	Ripon
J. Amend, Willow Grove Creamery .....	Ripon

## GRANT COUNTY.

Louisburg Butter & Cheese Co. ....	W. E. Minnick, Louisburg
Kieler Butter & Cheese Co. ....	Louis Brant, Kieler
Mt. Zion Creamery Co. ....	Cornelia
Georgetown Creamery Co. ....	J. P. Jones, Georgetown
Northwestern Creamery Co. ....	Krog & Co., Platteville
Cuba City Creamery .....	Elgin Creamery Co., Cuba

Hazel Green Creamery Co.	Geo. McBride, Mgr., Hazel Green
Mt. Hope Creamery	Hinn, Hildebrand Co., Fennimore
Livingston Creamery	Elgin Creamery Co., Livingston
North Andover Dairy Co.	North Andover
Hinn Bros.' Creamery	Fennimore
Ed. Palmer Creamery	Fennimore
Muscoda Creamery & Cheese Co.	A. W. Ellston, Sec., Muscoda
Hinn Bros.' Creamery	Andersons Mills
Bunkerhill Creamery	Fred Krugg, Platteville
Ellenboro Creamery	Ellenboro
Marion Creamery	F. E. Remington, Boscobel
Platte Ridge No. 1 Creamery	Frank Ambler, Mgr., Platteville
Farmers Co.-op. Creamery	Hinn Bros., Fennimore
Elgin Creamery	Elgin Creamery Co., Fennimore
Elgin Creamery	Elgin Creamery Co., Preston
Creamery	Klindt, Geiger & Co., Cassville
Ideal Creamery Co.	Hinn Bros., Fennimore
Patch Grove Butter and Cheese Co.	A. R. Allen, Patch Grove
Burton Creamery	W. H. Hunt, Potosi
Bloomington Creamery	Hinn & Co., Bloomington
Elgin Creamery Co.	T. F. Blake, Mgr., Montfort
Marietta Creamery Co.	Boscobel
Lancaster Creamery	Baxter & Hinn, Lancaster
Hurricane Creamery	Henry Hunt, Platteville
Fennimore Creamery	Theo. Wehrle, Fennimore
Belmont Creamery	Platteville
North Andover Dairy Co.	Glen Haven
John McVeigh Creamery	Eagle
J. L. Miller	Balmoral
Gault Hollow Creamery	Basswood
Walnut Grove Creamery	Muscoda
C. Hanswell	Boaz
High Prairie Creamery	A. V. C. Eckton, Muscoda
Elgin Creamery Co.	Elk Grove
Platteville Creamery	Elmo
Fred Krog	Elmo
Whig Creamery	Platteville
Elgin Creamery Co.	Stitzer
Richwood Creamery Co.	Wesport
Tavera Creamery	J. Thorp, Westport
P. Dimmick, Mgr.	Muscoda

GREEN COUNTY.

Creamery	J. R. Ellis & Son, owner, Brooklyn
Creamery	Monticello Creamery Co., owner, Attica
Jordan Creamery	F. R. Moles, Chicago, Jordan
Albany Creamery	Ed. Randall, Albany
Cold Spring Creamery	D. E. Wood Butter Co., Evansville
Attica Creamery	Rudy Zimmerman, Attica
Browntown Creamery	D. E. Wood & Co., Browntown
Monticello Creamery Co.	Monticello
Brodhead Creamery	F. O. Uehling & Co., Brodhead
Exeter Creamery Co.	Exeter
Brodhead Dairy Co.	Brodhead

## GREEN LAKE COUNTY.

Hodgson Creek Butter and Cheese Factory .....	C. A. Davenport, Berlin
Mackford Prairie Co-op. Creamery Co. ....	Geo. Boozer, Mgr., Markesan
Markesan Creamery .....	H. P. Friday, Markesan
Princeton Creamery Association .....	Julius Hening, Pres., Princeton
Green Lake Creamery (Center Fac.) .....	J. A. Amend, Ripon
Bluffton Creamery .....	C. A. Davenport, Berlin
St. Marie Creamery .....	Gustav Summerfeld, Princeton
Store Creamery .....	Manchester
D. Jenne & Co. ....	Berlin
J. E. Amend (Mullers Corners) .....	Ripon
J. E. Amend (Brooklyn) .....	Ripon

## IOWA COUNTY.

Belmont Creamery .....	Thos. Davis, Mgr., Rewey
New Providence Creamery .....	Thos. Dolphin, Livingston
Hollandale Creamery .....	John B. Meyer, Mgr., Hollandale
Edmund Creamery (Co-op.) .....	Edmund Creamery Co., Edmund
Harkers Creamery .....	Geo. J. Harker, Dodgeville
Mineral Point Creamery .....	Spenseley & Noare, Mineral Point
Highland Co-op. Creamery Co. ....	P. P. Eagan, Highland
Union Mills Creamery Co. ....	Paul Stennerson, Highland
Jonesdale Creamery .....	Elgin Creamery Co., Waldwick
Otter Creek Creamery .....	P. H. Enger, Union Mills
Mounds Creek Creamery .....	Scutcliffe Bros., Arena
Arena Creamery .....	A. L. Parman, Mazomanie-Arena
Elgin Creamery Co. ....	Mitchell & Griffith, Dodgeville
Salem Creamery .....	Mitchell & Griffiths, Dodgeville
Union Mills Creamery .....	Harker & Henn, Dodgeville
Hollyhead Creamery .....	Jas. Timby, Dodgeville
Wilson Creamery .....	Dodgeville
Hillside Creamery .....	E. Lloyd Jones, Sec., Hillside
Knickerbocker's Factory .....	S. E. Knickerbocker, Wyoming
Creamery .....	John Spenceley, Linden
Meadow Valley Creamery and Cheese Co. ....	Arena
J. P. Younger .....	Cobb
Peck's Bad Boy Creamery .....	Dodgeville
Blue Grass Creamery .....	Ridgeway

## JACKSON COUNTY.

York Creamery Co. ....	York
Morrow & Bush Creamery .....	Merrillan
North Star Creamery .....	Dietrich Bros., Osseo
York Creamery and Mercantile Association .....	Nels Heggen, York
Garden Valley Creamery .....	Morrow & Bush (2 Fac.), Alma Center
Melrose Creamery .....	W. G. Hyslop, Blair
North Bend Association .....	W. H. McAdam, North Bend
Bradley Creamery Co. ....	C. W. Bradley, Mgr., Taylor
Shamrock Creamery .....	Wm. Hatcher, Shamrock
W. G. Hyslop Creamery .....	Alma Center
Levis Creamery Association .....	Levis
I. R. Sechler & Son .....	Sechlerville
Union Creamery Co. ....	W. G. Hyslop, Melrose
Dieterich Bros. ....	Trout

Dieterich Bros. ....	Disco
Hatcher & Roberts .....	Millston
J. R. Sechler & Son .....	Hixton
Creamery .....	Northfield
Wright's Creamery .....	Alma Center

## JEFFERSON COUNTY.

Hoard's Creamery .....	A. R. Hoard, Ft. Atkinson
Roberts & Reese Creamery .....	Owen Reese, Concord
Janke Brother .....	Farmington
Buskirk & Markey's Creamery .....	Sullivan
Rock Lake Creamery .....	Wm. Everson, Mgr., Lake Mills
Union Creamery .....	Frank Wallace, Lake Mills
Star Creamery .....	E. C. Dodge, Lake Mills
Bretzmann & Korth .....	Lake Mills
Hebron Factory and Creamery .....	Gustave H. Krohn, Hebron
Clark & Reynolds Creamery .....	John T. Marshall, Whitewater
Red Clover Creamery .....	Fred Kutz, Hebron
Fairview Creamery .....	R. E. Kaplin, Lake Mills
Faville Grove Creamery .....	R. E. Faville, Lake Mills
Milford Creamery Association .....	C. S. Greenwood, Lake Mills
Aztalan Creamery .....	E. C. Dodge, Lake Mills
Louis Woelfer Creamery .....	Lake Mills
Union Creamery .....	Frank Wallace, Lake Mills
Central Creamery .....	C. F. Greenwood, Lake Mills
Mautz Bros.' Creamery .....	Johnson's Creek
W. E. Bluminstein (Schlauder & Bluminstein) .....	Sullivan
Bluminstein & Golden .....	Rome
Roach Bros. ....	Palmyra
Oak Hill Creamery Co. ....	Oak Hill
Maple Grove Co-op. Creamery and Cheese Association .....	Rome
Riverside Co-op. Creamery .....	H. A. Leich, Mgr., Milford
Monarch Creamery Co-op. ....	Herbert Gallup, Milford
North Road Butter and Cheese Factory .....	Clinton Jenks, Mgr., Hubbleton
Bleeker Creamery .....	Hubbleton
Grell Bros.' Creamery (2) .....	S. C. Wollensack, Mgr., Johnson's Creek
Oakland Center Creamery .....	Ed. L. Arndt, Ft. Atkinson
Central Creamery .....	C. F. Greenwood, Lake Mills
Ward's Creamery .....	C. J. Ward, Ft. Atkinson
Chas. Schumacher Creamery .....	Jefferson
J. F. Duebereiner .....	Jefferson
Palmyra Creamery .....	Perner & Christians, Johnson's Creek
Harvey Marr Creamery .....	Whitewater
Creamery (8 Creameries) .....	H. C. Christians, Johnson's Creek
Creamery .....	Chas. Hein, Hellenville
Melindy Creamery .....	Albert Koch, Palmyra
Creamery .....	Heimerl Co., Hellenville
Geo. C. Mansfield Co. ....	Johnson's Creek
Duck Creek Creamery .....	A. R. Hoard, Ft. Atkinson
North Branch Creamery .....	A. R. Hoard, Ft. Atkinson
Chas. Schumacher Creamery .....	Jefferson
Fountain Creamery .....	Roach & Seeber, Waterloo
Maple Grove Creamery .....	Roach & Seeber, Waterloo
White Clover Creamery .....	Roach & Seeber, Waterloo
Piperville Creamery (4 Creameries) .....	Geo. C. Mansfield, Johnson's Creek
Roberts Creamery .....	H. J. Roberts, Oconomowoc
Jahnke Creamery Co. ....	Louis F. Jahnke, Watertown

Waterloo Butter and Cheese Co. ....	P. H. Fox, Waterloo
Welsh Road Creamery .....	C. Jones, Watertown
Helmerl Creamery Co. ....	Jefferson
Cold Spring Creamery Co. ....	Cold-Spring
Ebenezer Creamery Co. ....	Watertown
Fall River Creamery Association .....	Lake Mills
Gilt Edge Creamery Association .....	Watertown
Maple Leaf Creamery Co. ....	Farmington
Mays Creamery Co. ....	Watertown
Sheridan Creamery Co. ....	Farmington
C. L. Weifer Creamery .....	Lake Mills
Banner Creamery .....	Lake Mills
Union Creamery .....	Lake Mills
R. E. Kepning .....	Lake Mills
So. Koshkonong Creamery .....	Ft. Atkinson
J. C. Galloway .....	Ft. Atkinson
H. Schempf .....	.....
Aug. Kohn .....	Waterloo
A. P. Falk .....	Koshkonong
I. K. Bingham .....	Koshkonong

## JUNEAU COUNTY.

Finley Creamery .....	L. W. Querhammer, Finley
Riverside Creamery .....	Silas Newman, Finley
Elgin Creamery Co. ....	J. N. Wigginton, Hustler
Geo. N. Van Hoosen .....	Hustler
Targa, Lee & Co. ....	Suldal
Necedah Creamery .....	N. H. Westman, Necedah
Mauston Creamery .....	Chas. VanBerg, Mauston
Elgin Creamery Co. ....	Edward Bradlow, Union Center
Elgin Creamery Co. ....	New Lisbon
Elgin Creamery Co. ....	Elroy
Elgin Creamery Co. ....	Mauston
J. Steiner .....	Mauston
Spring Creek Creamery Co. ....	Necedah
Hale's Prairie .....	Necedah
Germantown Creamery Co. ....	Germantown
O. Larson .....	Mauston

## KENOSHA COUNTY.

Bristol Farmers' Creamery .....	C. E. Williams, Sec., Bristol
Woodworth Co-op. Creamery .....	M. O. Myrick, Prest., Woodworth
Bissell Creamery .....	L. P. Devlin, Woodworth
Pikeville Creamery .....	Cornell Bros., Elgin, Illinois
Somers Creamery Association .....	Enoch Haigh, Prest., Somers
Farmers' Dairy Association .....	Henry Beathan, Mgr., Bassett
Star Creamery .....	F. J. Biehn, Kenosha
Farr Corners Creamery .....	Louis Fenske, Farr Corners
Farmers Creamery .....	A. H. Kruckman, Wilnot
Farmers' Creamery .....	Aug. Barthke, Trevor
Farmers' Creamery .....	Herman Scholoski, Salem
Piper & Thomas Creamery .....	Kenosha
Brighton Farmers' Creamery .....	Theo. Fuller, Brighton
Brighton Star Creamery .....	Jas. Brook, Silver Lake
Clondike Creamery .....	F. G. Hartnell, Salem



Farmers Brighton Creamery .....	Brighton
Farmers' Bristol Creamery .....	Bristol
Fox River Creamery Co. ....	Wheatland
Creamery .....	W. J. Rhodes, Sec'y, Somers
Worth Bros.' Fox River Creamery .....	Silver Lake

LANGLADE COUNTY.

Spring Brook Creamery .....	J. C. Lewis, Anitgo
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LA CROSSE COUNTY.

Bangor Co-op. Creamery Association .....	Wm. Smith, Mgr., Bangor
Mindoro Co-op. Creamery .....	H. D. Fuller, Mindoro
Holmen Creamery .....	V. S. Kepple, Holmen
Rockland Creamery .....	Rockland
West Salem Co-op. Creamery Association .....	West Salem
La Crosse Creamery & Butter Co.....	La Crosse

LA FAYETTE COUNTY.

Newman Creamery .....	John Newman, Wiota
Wiota Creamery .....	D. E. Wood Butter Co. (Elgin), Wiota
Bethel Grove Creamery .....	Platteville
Leslie Cheese & Butter Co. ....	Belmont
Wardsville Creamery .....	Robt. Driver, Darlington
Pleasant View Creamery .....	T. J. Vickers, Darlington
Dunbarton Creamery .....	D. E. Wood & Co., Dunbarton
Town Line Creamery .....	D. E. Wood & Co., Gratiot
Dodge Grove Creamery .....	Sam Benson, Leadmine
New Diggings Creamery .....	John Turpin, New Diggings
White Oak Co-op. Dairy .....	Edw. Hancock, Prest., White Oak
Belmont Creamery .....	Fred Krog, Platteville
Columbia Creamery .....	Elgin Creamery Co., Benton
Fayette Creamery Co. ....	L. B. Homery, Secy., Fayette
Yellowstone Creamery .....	Fayette
South Wayne Creamery .....	D. E. Wood & Co., South Wayne
State Line Creamery .....	John Newman Co., Elgin, Wayne
Lamont Creamery Co. ....	John Newman, Elgin, Lamont
Newman Creamery .....	John Newman, Elgin, Argyle
Cottage Inn Butter Co. ....	F. Krog, Platteville
Collins Cheese & Butter Co.....	Gratiot
Blanchardville Dairy Ass'n .....	Blanchardville
Free Silver Butter & Cheese Factory.....	Darlington
Sunnyside Butter & Cheese Factory .....	Shullsburg

MANITOWOC COUNTY.

Anton Kolbeck Creamery .....	Whitelaw
Schultz & Sabel Creamery .....	Cato
Gibson Creamery .....	P. H. Peacock, Sheboygan
Joe Mallman Creamery .....	St. Nazianz
Rusch & Gease Creamery .....	Reedsville
Manitowoc Creamery .....	Hy. Ackerman, Manitowoc
Newton Creamery .....	Herman Strudthoff, Newtonburg

## REPORT OF THE WISCONSIN

Weyer Creamery .....	Albert Weyer, Clover
Appenheim Creamery .....	The Bruchen Creamery Co., Timothy
Schultz Creamery Co. ....	Manitowoc
Bergenbruch Creamery .....	Henry Bergenbruch, Rube
R. C. Behnke .....	Wells
Jonh Bachhaus Creamery .....	Mishicott
Fred Bramer Creamery .....	Manitowoc

## MARATHON COUNTY.

Edgar Creamery Co-op. ....	Gust Herrman, Mgr., Edgar
Stettin Co-op. Creamery Assn. ....	H. A. Wendorff, Mgr., Stettin
Eureka Creamery .....	W. A. Voigt, Naugart
John Schliepke Creamery .....	Halder
Texas Creamery Co. ....	J. B. Kemf, Sec., Wausau
Hamburg Co-op. Creamery .....	Zeigler
Schofield Co-op. Creamery .....	Otto Miller, Schofield
Central Creamery Co. (Co-op.).....	Jac. Horning, Sr., Sec., Marathon

## MARINETTE COUNTY.

Peshigo Creamery Co. ....	Peshigo
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## MARQUETTE COUNTY.

Geske Bros. Creamery .....	Oxford
Shields Creamery & Cheese Assn. ....	Germania
Montello Creamery .....	Apel Kehlet, Westfield
Westfield Creamery Co. ....	Jones & Kleman, Westfield
Montello, Buffalo & Packwaukee Creamery .....	Packwaukee
Packwaukee Creamery .....	A. Kehlet, Westfield
Wm. Heitke Creamery .....	Endeavor
Axel Kehlet Creamery .....	Montello
Axel Kehlet Creamery .....	Oxford
Montello Creamery .....	Montello

## MILWAUKEE COUNTY.

Franklin Dairymen's Assn. ....	Champenny & Co., Milwaukee
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## MONROE COUNTY.

Sparta Co-op. Creamery .....	J. P. Beckler, Prest., Sparta
Elgin Creamery .....	W. Titus, Mgr., Kendall
Buswell Creamery .....	Luther Buswell, Mgr., Kendall
Elgin Creamery Co. ....	Tim Harland, Mgr., Wilton
Farmers' Creamery .....	Portland
Elgin Creamery Co. ....	Herman Vieth, Norwalk
Elgin Creamery Co. ....	Norwalk
Elgin Creamery Co. ....	Tomah
Ridgeville Creamery .....	Elgin Creamery Co., Norwalk
Summit Creamery .....	Elgin Creamery Co., Norwalk
Elgin Creamery Co. ....	Enterprise
A. F. Huber Creamery .....	Norwalk

Portland Creamery Co. ....	N. M. Nelson, Portland
Tunnel City Creamery .....	Elgin Creamery Co., Tunnel City
Union Co-op. Creamery Association .....	Elgin Creamery Co., Lessee, Wilton
Warrens Creamery Co. ....	Warrens
Lorence Shubert Creamery .....	Elgin Creamery Co., Clifton
Henry Senz Creamery .....	Elgin Creamery Co., Clifton
Brush Creek Creamery .....	Elgin Creamery Co., Ontario
Moon Creek Creamery .....	Elgin Creamery Co., Norwalk
Leon Co-op. Creamery Assn .....	J. S. Jones, Leon
Elgin Creamery C. ....	Jos. Hauser, Cashton
Elgin Creamery Co. ....	Melvina
Elgin Creamery Co. ....	W. Wiggington, Cashton
Livingston Creamery Co. ....	Clifton
Wilton Creamery Co. ....	Wilton

## OCONTO COUNTY.

The Anson Eldred Co. ....	Stiles
Maple Leaf Creamery .....	John Thiede, Abrams
Brookside Creamery .....	Walter J. Davis, Brookside
John Thiede Creamery .....	Grosse
Little River Creamery .....	Arthur Young, Oconto
Gillett Creamery Assn. ....	Gillett
Maple Valley Creamery Co. ....	Maple Valley
Lena Creamery Co. ....	Lena
Hayes Creamery Co. ....	Hayes
Spruce Creamery Co. ....	Hayes

## ONEIDA COUNTY.

Oneida Creamery .....	Rhineland
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## OUTAGAMIE COUNTY.

Black Creek Creamery .....	Elmer Hogoboom, Black Creek
Missling Bros. Creamery .....	Black Creek
Apple Creek Creamery .....	Appleton
J. E. Laureckson Creamery .....	Bungert
Welcome Creamery Co. ....	Welcome
Julius Siefert Creamery .....	Appleton
S. L. Reed Creamery .....	Hortonville
M. W. Pearce Creamery .....	Hortonville
Shiocton Creamery .....	E. A. Huebner, Shiocton
Mackville Creamery .....	R. C. Jeske, Mackville
Potts, Wood & Co. Creamery .....	Appleton
Bungert Creamery Co. ....	Bungert
Wisconsin Butter & Cheese Co. ....	S. L. Reed, Medina
Johnson's Creamery .....	Appleton
Dengle & Bauer .....	Welcome

## OZAUKEE COUNTY.

Jacob Jacobson Creamery .....	Port Washington
Emil Schlewvogt Creamery .....	Port Washington
Sam Jacobson Creamery .....	Port Washington

Nic Shenker .....	Port Washington
J. Y. Machtke .....	Port Washington
Five Corner Creamery .....	Thos. Hoppin, Cedarburg
Frank L. Groth Creamery .....	Cedarburg
Riverside Creamery .....	Boerner Co., Saukville
Cold Spring Creamery .....	Boerner Co., Saukville
Darbov Butter & Cheese Co. ....	Jos. Spranger, Darbov

## PEPIN COUNTY.

Farmers' Co-op Creamery .....	B. H. Ridgway, Porcupine
Bear Creek Co-op. Creamery .....	C. K. Averill, Durand
Bear Creek Creamery (Co-op.) .....	Geo. Tarrant & Sons, Durand
Creamery .....	Plummer Merc. Co., Arkansasaw
Brunside Co-op. Creamery Co. ....	C. A. Van Brundt, Misha Mokwa
Dunnville Co-op. Creamery Co. (Dunn Co.) .....	F. A. Vasey, Dunnville
Frankfort Co-op. Creamery Co. ....	Bryant Ridgway, Mgr., Porcupine
Tarrant Creamery .....	Geo. Tarrant & Sons, Tarrant
Tarrant Creamery .....	Geo. Tarrant & Sons, Eau Galle
Waterville Co-op. Creamery .....	Arkansasaw

## PIERCE COUNTY.

Plum Creek Creamery .....	Plum City
Farmhill Creamery .....	Tanberg Bros., Spring Valley
Rock Elm Creamery .....	Aug. Falk, Rock Elm
Spring Valley Creamery Co. ....	J. C. Berg & P. Lorne, Spring Valley
Trim Belle Butter & Cheese Co. ....	John T. Beddall, Trim Belle
Kopp & Co. ....	Ono
A. O. Moe Creamery .....	Ellsworth

## POLK COUNTY.

Wm. F. Koch Creamery .....	East Farmington
Milltown Creamery .....	J. P. Sorenson, Milltown
St. Croix Creamery Co. ....	John Holmberg, Lamar
Farmers' Creamery Assn. ....	West Sweden
Dueholm Creamery .....	Thos. L. Hjort, Dueholm
Atlas Co-op Creamery Co. ....	J. B. Peterson, Mgr., Atlas
Cushing Creamery Co. ....	Simon Twetten, Clerk, Cushing
Apple River & Beaver Co-op. Creamery Assn. ....	A. J. Anderson Pres., Range
Horseshoe Lake Co-op. Creamery Co. ....	L. W. Kingsbury, Turtle Lake
Clayton Co-op. Creamery Co. ....	C. Cundstrom, Clayton
The Clam Falls Creamery Assn. ....	H. C. Fischer, Prest., Clam Falls
The Balsam Lake Co-op Creamery Co. ....	E. W. Overman, Lykens
The Volga Co-op Creamery Assn. ....	O. H. Olson, Secy., Volga
North Valley Creamery .....	Anton T. Johnson, North Valley
Wolf Creek Creamery Assn. ....	E. H. Florschutz, Wolf Creek
Mattson Creamery .....	Mattson & Jensen, Jensen
Osceola Creamery .....	E. B. Von Heyne, Osceola
Dresser Junction Creamery .....	John Mattson, Osceola
Ubet Creamery .....	Mattson & Sons, Ubet
Amery Creamery Co. ....	Balsam Lake

## PORTAGE COUNTY.

Amherst Jersey Creamery Co. ....	G. E. Jordan, Amherst
Nelsonville Creamery .....	P. D. Nelson, Nelsonville
Jersey Valley Creamery .....	Aug. Millins & Sons, Almond
Hetzel Co-op Creamery Co. ....	F. E. McCormick, Hetzel
Buena Vista Co-op. Creamery Co. ....	H. H. Pood, Buena Vista
Farmers' Butter & Cheese Assn. ....	Nels P. Peterson, New Hope
New Hope Butter & Cheese Assn. ....	Knudt Hanson, Peru
Lime Lake Creamery .....	Peter Peterson, Amherst
Creamery .....	Frank Bemanski, Stevens Point
Plover Creamery Co. ....	M. F. Pierce, Plover
Henn Bros. & Co. ....	Junction
Alban Butter & Cheese Assn. ....	Andrew A. Brekke, Alban
Custer Creamery Co. ....	John O'Keefe, Custer
Arnott Creamery Co. ....	M. O'Keefe, Arnott
Blaine Creamery Co. ....	Blaine
Gilt Edge Creamery Co. ....	Stevens Point
North Hope Butter & Cheese Co. ....	Peru
Farmers' Butter & Cheese Assn. ....	New Hope
Garfield Cheese & Butter Assn. ....	Garfield

## RACINE COUNTY.

Norway Butter & Cheese Co. ....	McCanna & Fraser Co., Waterford
North Cape Creamery .....	John Thompson, North Cape
Husher Creamery Co. ....	Paul Feldler, Husher
Husher Creamery Co. ....	Ernest Feldler, Tabor
Thompsonville Creamery .....	Thompsonville
Mt. Pleasant Creamery .....	W. E. Tucker, Sylvania
Kneeland Creamery .....	J. J. Jackson, Mgr., Kneeland
Union Church Creamery .....	Ferdinand Meyer, Union Church
High Street Creamery Co. ....	C. J. Dyson, Burlington
Waterford Creamery .....	McCanna & Fraser Co., Burlington
Caldwell Creamery .....	McCanna & Fraser Co., Burlington
Ives Groves Creamery .....	W. E. Tucker, Sylvania
Yorkville Creamery .....	Kearney & Roessler, Jefferson
Yorkville Creamery .....	W. Shephard, Mgr., Yorkville
Creamery .....	McCanna & Fraser, Beaumont
Creamery .....	McCanna & Fraser, Kansasville
Creamery .....	McCanna & Fraser, Dower
Union Grove Creamery .....	W. E. Tucker, Union Grove
Burlington Farmers' Creamery Co. ....	Burlington

## RICHLAND COUNTY.

Creamery .....	A. Harter, Richland City
Ashridge Creamery .....	J. L. Driscoll, Ashridge
Viola Creamery & Cheese Factory .....	Kinder & Warner, Viola
Maple Grove Creamery & Cheese Factory .....	D. S. Simmons, Viola
Knapp Creek Creamery .....	Bert Reuttenm, Mgr., West Port
Sylvan Creamery Co. ....	Sylvan
Creamery .....	Frank Walker, Sabin
Richwood Creamery Co. ....	J. I. Chitwood, Secy., West Port
Germantown Creamery .....	Henry Kellner, Cazenovia
Sylvan Creamery .....	P. Cranston, Sylvan

Hoffmann Creamery .....	Lloyd
Ithaca Creamery .....	Bear Valley
Richwood .....	Tavera
Creamery .....	Westport
Cassell Bros. ....	Town of Buena Vista
D. S. Simmons Creamery .....	Viola
F. Walker Creamery .....	Sabin
Logansville Creamery .....	Logansville
H. Harter Creamery .....	Richland City
Bloom Valley Creamery Co. ....	Bloom City
Bear Valley Creamery Assn. ....	Ithaca

## ROCK COUNTY.

Cookville Creamery .....	D. E. Wood Butter Co., Evansville
Eagle Cry .....	Geo. Mansfield Creamery Co., Johnsons Creek
White Star Creamery .....	Carlson Creamery Co., Footville
Lima Center Creamery .....	Godfrey & Macomb, Lima Center
Burr Oak Creamery .....	A. D. Conkey, Milton Junction
Spring Brook Creamery .....	H. Wardwell, Whitewater
Frank Lee Creamery .....	Frank Lee, Evansville
Orfordville Creamery .....	F. O. Uehling & Co., Hanover
West Newark Creamery .....	C. H. Oleson, Newark
Newark Creamery .....	Ben Johnson, Beloit
Clinton Creamery .....	Chas. Sallsbury, Clinton
Bower City Creamery .....	E. E. Bullock, Janesville
F. O. Uehling & Co. ....	Hanover
Beloit Creamery .....	D. O. Kline, Beloit
La Prairie Creamery Co. ....	J. E. Gleason, Mgr., Janesville
Harmony Creamery Co. ....	Harvey Godfrey, Whitewater
Columbia Creamery Co. ....	John Beseker, Allen's Grove
Banner Creamery .....	Geo. C. Mansfield & Co., Milton Junction
Emerald Grove Creamery Assn. ....	C. D. Fitch, Emerald Grove
Rock River Creamery .....	Ernest Bulock, Janesville
Riverside Creamery .....	Jenning Bros., Milton Junction
Beloit Creamery .....	Thompson & Rasey, Beloit
Wm. Brinkman Creamery .....	Afton
Ehler Brinkman .....	Willow Dale
Godfried Seiler .....	Willow Dale
Clinton Co-op. Creamery Co. ....	Clinton
Rock River Creamery Co. ....	Fulton
So. Koshkonong Creamery Co. ....	Koshkonong
Roach & Sieber .....	Footville
Roach & Sieber .....	Center
Porter Factory .....	Roach & Sieber, Center
F. B. Steadman .....	Koshkonong
Ellwood Butter Co. ....	Evansville
Magnolia Creamery .....	Magonia
W. Botcher .....	Janesville
Nora Creamery Co. ....	J. T. Nelson, Clinton
W. C. Uehling .....	Shopiere
D. M. Spicer .....	Tiffany
G. C. Mansfield Co. ....	Edgerton
E. E. Bullock .....	Edgerton
S. S. Joiner .....	Willowdale
F. O. Uehling .....	Orfordville
L. H. Skinner .....	Orfordville
J. Hobbs .....	Whitewater
Newark Creamery .....	Newark

## ST. CROIX COUNTY.

Rush River Creamery Co. ....	Ned Nelson, New Centerville
Lorentson's Creamery .....	Nils C. Lorentson, Baldwin
Brookville Creamery .....	Brookville
St. Croix Co-op. Creamery Co. ....	E. B. Rehder, Houlton
Graslie Creamery Co. ....	Jas. B. Graslie, Baldwin
Woodville Creamery Co. ....	Chas. Rhode, Woodville
Roberts Creamery Co. ....	Wm. Hawkins, Roberts
Graslie Creamery Co. ....	Graslie, Hammond
Superior Creamery Co. ....	John Finsted, Star Prairie
Forest Creamery .....	Hedemark & Christopher, Hempel
Pleasant Valley Creamery Co. ....	Haugan & Graslie, Pleasant Valley
Jewitts Mills .....	Wm. Hennessey, Jewetts Mills
Baldwin Creamery Co. ....	Baldwin
Cylon Creamery Co. ....	Cylon
Farmers' Co-op. Creamery .....	Palmer
Hybernia Butter & Cheese Assn. ....	Erin
St. Croix Falls Creamery Co. ....	St. Croix Falls
Greenwood Dairy Assn. ....	Glenwood

## SAUK COUNTY.

Wisconsin Creamery Co. ....	H. S. Bowman, Mgr, Sauk City
Clover Creamery .....	J. L. Connor, Woodlawn
Elgin Creamery Co. ....	N. Stein, Kilbourn
Farmers' Creamery Assn. ....	Henry Sorge, Reedsburg
Valton Creamery Co. ....	W. E. Lavalle, Valton
Oaks Creamery Co. ....	F. G. Wallace, Oaks
Ableman Co-op. Creamery Co. ....	D. B. Smythe, Ableman
Baraboo Creamery Co. ....	Elgin Creamery Co., Baraboo
Winfield Creamery .....	Henry Sorge, Reedsburg
La Valle Creamery .....	Ed. Winters, La Valle
Loganville Butter & Cheese Mfg. Assn. ....	Nic. Hasz, Sec., Loganville
Black Hawk Creamery .....	Spreeker & Co., Black Hawk
Troy & Honey Creek Creamery .....	H. J. Steuber, Witwen
Cassel Creamery .....	Mr. Burchell, Cassel
North Freedom Creamery Co. ....	Elgin Creamery Co., North Freedom
Heimerl Creamery Co. ....	Merrimac
Creamery .....	Prairie du Sac
Woodlawn Creamery .....	Town of Washington
Lime Ridge Creamery .....	Lime Ridge
Winfield Creamery (Sec. 24) .....	(1 mile east) La Valle
Creamery .....	Leland
Leland Creamery .....	North Freedom
Freedom Creamery .....	Prairie du Sac
Honey Creek Creamery .....	Plain
Sumter Creamery .....	Plain
Plain Creamery .....	Reedsburg
Delona Creamery .....	Merrimac
Greenfield Creamery .....	R. C. Hubbard, Reedsburg
Elgin Creamery Co. ....	Spring Green
Spring Green Creamery Co. ....	Spring Green

## SHAWANO COUNTY.

Wittenberg Creamery Co. ....	E. C. Peterson, Wittenberg
Tigerton Creamery Co. ....	E. Hoeft, Secy., Tigerton
W. J. Werner Creamery .....	Galesburgh
A. V. Heimbürg Creamery .....	Cecil
H. W. Main Creamery .....	Marion
H. W. Main Creamery .....	Caroline

## SHEBOYGAN COUNTY.

B. Schreiber & Co. ....	Bernhard Schreiber, Sheboygan
Cleveland Creamery .....	Ed. Wunsch, Sheboygan
A. E. Henry Creamery .....	Sheboygan Falls
Kock & Janssen .....	Beechwood
Habighorst Cheese & Butter Factory .....	Wm. Habighorst, Sheboygan Falls
Creamery & Factory .....	John F. Moehrl, Silver Creek
Creamery & Factory .....	Buchen Bros., Adell
Glenbeulah Creamery .....	Albert & Garling, Glenbeulah
Edgewood Creamery .....	J. H. Thockray, Glenbeulah
Frank Gowin .....	Plymouth
W. A. Zehn .....	Plymouth
C. H. Luecke .....	Plymouth
Wm. Paasch .....	Plymouth
Ferd. Siemers .....	Plymouth
Louis Helmer .....	Plymouth
Champeny Creamery Co. ....	B. Snell, Plymouth
Jos. Rohda .....	Plymouth
F. J. Isserstedt .....	Champeny Creamery Co., Plymouth
Jac. Wolf .....	Champeny Creamery Co., Plymouth

## TAYLOR COUNTY.

Little Black Creamery Co. ....	J. M. Follensby, Medford
Wm. DeLap Creamery Co. ....	Medford
Medford Creamery Co. ....	Medford

## TREMPEALEAU COUNTY.

Creamery .....	J. J. Schaffner, Independence
Unity Co-op. Creamery .....	Anton M. Rognlieu, Strum
Osseo Creamery Co. ....	E. Hagen, Osseo
Elk Creek Creamery .....	McClure & McLain, Elk Creek
Arctic Spring Creamery .....	E. F. Clark, Prest., Galesville
Whitehall Creamery Assn. ....	L. D. Parsons, Secy., Whitehall
Pigeon Falls Creamery .....	P. Ekern, Pigeon Falls
Eleva Creamery .....	O. A. Breakey, Eleva
Dodge Creamery Co. ....	Jos. Brejinski, Dodge
Arcadia Creamery Co. ....	John Maurer, Arcadia



None Such Creamery .....	Fugina Bros. Fertig Co., Arcadia
Etrrick Creamery Co. ....	K. K. Hagestad, Mgr., Etrrick
Hegg Creamery .....	Mc. Manner & McLain, Hegg
Fertig Bros. ....	Arcadia
Centerville Creamery Co. ....	N. H. Cashart, Prest., Centerville
Newton Butter & Cheese Assn. ....	Spangler & Becker, Newton
Elgin Creamery Co. ....	Westby
Hillsboro Creamery .....	H Besta, Mgr., Elroy
Chaseburg Creamery .....	Andrew Gilbertson, Chaseburg
Coon Valley Creamery Assn. ....	Elgin Creamery Co., Coon Valley
Elgin Creamery Co. ....	Ontario
Preston Creamery .....	W. G. Hyslop, Blair
Russell Creamery Co. ....	Russell
North Star Creamery .....	Dietrich Bros., Osseo

VERNON COUNTY.

Chaseburg Creamery .....	A. Gilbertson, Chaseburg
Mt. Tabor .....	Elgin Creamery Co., Mt. Tabor
The Rocky Run Dairy Co. ....	Wood
Ontario Creamery Assn. ....	Ontario
E. V. Warnsick Creamery .....	Hillsboro
Newry Co. Creamery .....	Newry
Davis & Rankin Creamery .....	Newton
Spangler & Co. Creamery .....	Bristow
Dilley & Co. Creamery .....	Valley
A. F. Nevy Creamery .....	Debello

WALWORTH COUNTY.

Walworth Creamery Co. ....	H. S. Bell, Walworth
N. Bloomfield Creamery .....	And. Kull, Lake Geneva
Geneva Center Butter Factory (Co-op.).....	E. Davidson, Lake Geneva
Kayes Park Creamery Assn. ....	Lake Geneva
Maple Ridge Creamery .....	Lake Geneva
Lake View Creamery .....	Lake Geneva
Farmers' Creamery .....	Lake Geneva
Center Bloomfield Creamery .....	E. T. Hibbard, Lake Geneva
Richmond Creamery .....	J. L. Kilkenney, Richmond
Whitewater & Richmond Creamery .....	D. F. Zuill, Whitewater
East Richmond Cry .....	Kachell & Marlette, Whitewater
Prairie Creamery .....	Beach & McCutchan, Whitewater
Nonpareil Creamery .....	Beach & McCutchan, Whitewater
Reliance Creamery .....	Farmers' Stock Co., Whitewater
Clover Valley Creamery .....	Wright & McIntyre, Whitewater
W. Marshall .....	Whitewater
Jas. Dyer .....	Whitewater
Clover Hill Creamery .....	John Cox, Whitewater
Harry Godfred .....	Whitewater
Spring Prairie Creamery .....	J. C. Kochert, Whitewater
La Fayette Creamery .....	E. A. West, Elkhorn
Fayetteville Creamery .....	Walter West, Elkhorn
N. Geneva Butter & Cheese Factory .....	Harris & West, Elkhorn
Elkhorn Creamery Co. ....	Elkhorn
South Sugar Creek Creamery.....	Cornell Bros., Elkhorn
Bowers Creamery .....	M. B. Ranney, Bowers
Silver Lake Creamery .....	W. Ellis, Tibbets

## REPORT OF THE WISCONSIN

South Sugar Creek Creamery Co. ....	F. A. Sage, Mgr., Jacobsville
Sharon Dairy Co. ....	C. A. Sikes, Secy., Sharon
North Sharon Creamery Co. ....	Sharon
State Line Creamery ....	B. Chilson, Sharon
Elgin Creamery Co. ....	Sharon
Troy Butter & Cheese Co-op. Factory ....	W. J. Webster, Troy
W. Randolph ....	E. Troy
Little Prairie Butter & Cheese Factory.....	I. McAdams, Little Prairie
Adams Co-op. Butter & Cheese Factory.....	Adams
Wisconsin Butter & Cheese Co. ....	Adams
Darlen Creamery Co. ....	Farmers' Co-op. Co., Darlen
Darlen Creamery Co. ....	M. E. Cusack, Darlen
Mrs. D. H. Hopper ....	Adams
Fairfield Creamery Co. ....	Palmer & Rice, Fairfield
Lyons Creamery ....	C. H. Stubbs, Lyons
Springfield Creamery Co. ....	J. E. Brett, Springfield
W. Rouse ....	Springfield
Lake Lawn Creamery ....	B. C. Martin, Delavan
E. Delavan Creamery ....	W. C. Winkleman, E. Delavan
Island Creamery ....	Delavan
Delavan Creamery Co. ....	Delavan
J. Quigley ....	Delavan
Chas. Bessecker (Union Creamery) ....	Delavan
C. Q. Fish ....	Delavan
Fairfield Creamery ....	Darlen
Genoa Junction Creamery Co. ....	Genoa Junction
W. J. Hall & Co. ....	Johnstown
Dan. Zull ....	Johnstown
Heart Prairie Creamery ....	H. Mann, Johnstown
Newell Creamery ....	W. Borst( Johnstown
Honey Creek Co-op. Creamery ....	W. E. Babcock, Honey Creek
Delavan Creamery ....	Williams Bay
J. B. Wells (Columbia Creamery).....	Allen Grove

## WASHBURN COUNTY.

Farmers' Co-op. Creamery .....	Andrew Lyon, Mgr., Shell Lake
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## WASHINGTON COUNTY.

Gilt Edge Creamery .....	Binniwell & Turck, Hartford
Creamery .....	Dow Maxon, Cedar Creek
Kewaskum Creamery .....	M. & A. Rosenheimer, Kewaskum
J. Gehl Creamery .....	So. Germantown
Wm. Schessow Creamery .....	So. Germantown
Erin Butter & Cheese Factory .....	Aug. Meier, Thomson
West Bend Co-op. Creamery Co. ....	Geo. W. Jones, Mgr., West Bend
Wayne & Addison Cheese & Dairy Co. ....	Martin Huron, Kohlsville
E. W. Wittig .....	Fillmore
J. H. Klessig .....	Fredonia
Peter Woog .....	Boltonville
W. H. Graskamp & Co.....	Fillmore
Wm. Donath .....	Boltonville
Anson Weinreich .....	Fillmore
Kirchhayne Butter Co. ....	Kirchhayne P. O.
Maple Hill Creamery Co.....	Hartford

## WAUKESHA COUNTY.

Helmery Creamery Co. ....	Otto Helmerl, Wales
North Prairie Creamery Co. ....	Chas. Mitchell, North Prairie
Genessee Creamery .....	E. G. Thomas, Genessee
Saylesville Butter & Cheese Co. ....	Harris Bros., Genessee
Delafield Creamery .....	Chas. Bente, Delafield
Creameries (2) .....	Winkler & Becker, North Lake
Creameries (3) .....	T. M. Champeny Co., Sussex
Farmers' Creamery .....	Joe Rambough, Pewaukee
Pewaukee Stock Creamery .....	Miss Kate Peffer, Pewaukee
Vernon Creamery Co. ....	Guthrie
Butter Factory .....	Harris Bros., Waukesha
C. B. McCanna & Co. ....	Burlington
Jericho Creamery Co. ....	A. T. Stebbins, Eagle
Wis. Butter & Cheese Co. ....	Walter A. West, Elkhorn
Creamery .....	T. Y. Champney Co., Brookfield
Roach Bros. Co. ....	Palmyra
Hartland Creamery .....	Hartland
Brown St. Creamery .....	Becker & Winkler, Oconomowoc
Monterey Creamery .....	Roach & Seeber, Monterey
North Lisbon Creamery .....	T. M. Champeny, Sussex
Prospect Creamery .....	Chas. Champeny, Prospect
Calhoun Creamery .....	Wis. Butter & Cheese Co., Waukesha
Champeny Creamery Co. ....	Monches
Stone Bank Creamery Co. ....	Stone Bank
Mapleton Dairy Co. ....	Oconomowoc
Waukesha Butter Co. ....	Waukesha
Big Bend Dairymen's Assn. ....	Big Bend
Borth Creamery & Butter Mfg. Co. ....	Poysippi
J. J. Billings .....	Pewaukee
Chas. Clasen .....	Marey
Chris. Clasen .....	Duplainville
Cold Spring Dairy .....	Menomonee Falls
Wm. Dawe .....	Ottawa
Elgin Creamery Co. ....	Marey
McKenna & Fraser Co. ....	Prospect
Muskego Creamery Co. ....	Muskego
H. Patrick .....	Oconomowoc
Prince of Wales Creamery .....	Wales
Andrew Russell .....	Summit Center
Saylesville Butter & Cheese Co. ....	Genessee
Silver Spring Creamery .....	Tess Corners
Vernon Co. Operative Creamery Co. ....	Guthrie
Winkler & Becker .....	North Lake
Wisconsin Butter & Cheese Co. ....	Waukesha
Chas. Bente .....	Summit

## WAUPACA COUNTY.

Waupaca Creamery .....	Frank Kizer, Waupaca
Royalton Creamery Assn. ....	Chris. Jensen, Royalton
Baldwin Creamery Co. ....	C. P. Baldwin, Baldwin's Mills
Upland Creamery .....	Edmund Treager & Co., Welcome
Glit Edge Creamery .....	Folkman Bros., Clintonville
Creamery of Lebanon .....	W. E. Carter, New London
St. Lawrence Co-op. Creamery Co. ....	W. Pray, Prest., Scandinavia

Silver Lake Co-op. Creamery Co. ....	H. Hartvig, Prest., Scandinavia
Creamery .....	C. P. Baldwin, Weyauwega
B. C. Carter Creamery .....	New London
W. J. Tilkey .....	Clintonville
Symco Creamery Co. ....	Symco
Iola Creamery Ass'n. ....	C. L. Passmen, Iola
Marion Creamery Co. ....	Marion
Pigeon River Cheese & Butter Co. ....	Waupaca
Walla Walla Brook Creamery Co. ....	Lind
Fountain Valley Co-op. Co. ....	Clintonville
L. D. Churchill .....	Fremont
R. O. Sells .....	Royalton
Creamery .....	Lind

## WAUSHARA COUNTY.

Poysippi Creamery .....	E. M. Mathews, Poysippi
Spring Lake Butter & Cheese Co. ....	J. Hefferren, Spring Lake
Marion Cheese & Butter Co. ....	T. H. Johnson, Spring Lake
Waushara Creamery .....	A. High, Berlin
Auroraville Creamery .....	A. High, Berlin
Coloma Creamery .....	A. Kehlet, Westfield
Plainfield Creamery Co. ....	John Benson, Plainfield
Mt. Morris Butter & Cheese Co. ....	Fred Mitchell, Mt. Morris
Creamery (Marquette Co.) .....	Mr. Dure, Westfield
Terrill Creamery .....	D. J. Jennie & Co., Berlin
Pine River Creamery .....	E. Mathews, Saxeville
Creamery .....	C. J. Walter, Brushville
Tustin Star Creamery Co. ....	Stock Co., Tustin
Wautoma Creamery .....	W. Tyler, Wautoma
West Bloomfield Creamery.....	Louis Frederic, W. Bloomfield
Saxeville Co. ....	E. Mathews, Saxeville
C. A. Davenport, Creamery .....	Berlin
Fountain Valley Creamery .....	Poysippi
Duncan Dewar (Dakota Creek), Creamery.....	Coloma
Aug. Miller (Almond Creamery) .....	Plainfield

## WINNEBAGO COUNTY.

Oak Hill Creamery .....	H. J. Frank, Neenah
Rush Lake Creamery Co. ....	Albert Wilson, Sec., Rush Lake
Nolting Creamery Co. ....	A. Webster, Mgr., Omro
L. E. Scott Creamery .....	L. E. Scott, Neenah
Creamery .....	A. E. Zillmer, Oshkosh
Allenville Spring Creamery .....	Y. B. Calkins, Pres., Winneconne
Reliance Creamery .....	S. E. Amend, Rush Lake
Eureka Creamery .....	Nottleman Bros., Oshkosh
Ring Co-op Creamery .....	John Owens, Mgr., Ring
Nekimi Corners Dairy Assn. ....	Ennisson Bros., Eldorado
Omro Junction Creamery .....	A. Speich, Oshkosh
Omro Creamery .....	B. F. Webster, Mgr., Omro
Cold Spring Butter & Cheese Co. ....	Jac. Wohld, Neenah
Rush Lake Creamery Co. ....	Rush Lake
Mt. Sterling Creamery Co. ....	Neenah
Clover Leaf Creamery .....	Aug. Werth, Neenah

Alder Creek Creamery .....	J. Vogt, Neenah
Twin City Creamery .....	C. Reed, Neenah
E. Trelevan Co-op. Co. Creamery .....	Omro
J. H. Foster, Mgr. ....	Koro
D. Jeffries .....	Allensville
J. E. Amend .....	Zion
J. E. Amend .....	Pickett
J. E. Amend .....	Fisk

WOOD COUNTY.

Richfield Creamery .....	Holcomb, Dobratz & Lundt Creamery Co., Marshfield
Seneca Creamery .....	C. Otto, Vesper
Rocky Run Dairy Co. ....	Pittsville
Pittsville Creamery .....	L. W. Querhammer, Findley
Rudolph Creamery .....	A. J. Chambers, Rudolph
Marshfield Creamery .....	Fuller & Hathway, Marshfield
Klondike No. 1 Creamery .....	Holcomb, Dobratz & Lundt, Marshfield
Hansen Creamery .....	Holcomb, Dobratz & Lundt, Marshfield
Mitchell & Griffiths Creamery .....	F. Parks, Blenker
Grand Rapids Creamery Co. ....	Grand Rapids

## PRESERVATIVES IN MILK.

### IOWA SUPREME COURT DECISION.

In the Supreme Court of Iowa. October term, 1900.  
 The State of Iowa, Appellant, vs. B. F. Schlenker, Appellee.  
 Appeal from Polk County District Court.  
 Hon. C. A. Bishop, Judge.

Defendant was convicted of the crime of selling adulterated milk. His motion in arrest of judgment based on the proposition that the statute was and is unconstitutional, was sustained, and he was released and his bond exonerated. From this order the state appeals.

Milton Remley, Attorney General, and Charles A. Van Vlack, Assistant and Attorney General, for the State. W. N. Jordan and James C. Hume, for Appellee.

DEEMER, J.—The statute under which the information was filed reads as follows: "If any person shall sell \* \* \* any adulterated \* \* \* milk \* \* \* he shall be fined," etc. Section 4989. Section 4990 reads: "For the purpose of this chapter the addition of water or any other substance or thing to whole milk or skimmed milk or partly skimmed milk is hereby declared an adulteration," etc.

There is no question that defendant sold milk to various persons into which he had put and mixed boracic acid. Some of them were notified of the adulteration, but others were not. He testifies that he dissolved five pounds of the acid in twenty gallons of water, and added one pint of the solution to ten gallons of milk; that he used it as a preservative and told quite a number of his customers that he was using the solution for the purpose indicated; that he never attempted to deceive any of his customers regarding the use of the solution, and that its use was necessary "to keep the milk from souring." He also introduced experts to show that the quantity of boracic acid used tended to prevent decomposition and would have no deleterious effect upon the consumers.

For the purposes of this case we must assume that the quantity of acid used by the defendant in the milk sold by him had no deleterious effect, but tended to prevent decomposition and the development of germs.

The experts also testified, however, that the addition of an excessive amount of boracic acid would have a deleterious effect in that it would retard the development of the gastric juice in the stomach. The learned district judge filed an opinion, in which he held in effect that the statute construed literally was unconstitutional, and that the evident intention of the legislature was to prohibit the sale of anything that would operate as a fraud upon the buyer or prove deleterious to his health, and that as defendant was guilty of no fraud and the adulteration was harmless, he had violated no law.

These propositions are insisted upon by the appellee and further contention is made that if the statute is not so construed it is unconstitutional, for various reasons that will be referred to during the course of this opinion.

It seems to us that the construction placed upon the statute by the trial court is a strained and unnatural one. The language of the enactment is plain and in view of the previous legislation there is no doubt that the act should have a literal interpretation. That the legislature so intended is not open to serious debate. So construed are the acts constitutional? Section 4990 is said to be void because it invades the judicial province in that it is not permissible for the legislature to make certain evidence conclusive of a question that may be submitted to judicial determination. No doubt the legislature cannot indirectly dispose of a cause by prescribing conclusive rules of evidence; and it has no power to direct the judiciary in the interpretation of existing statutes.

Groesbeck vs. Seeley, 13 Mich., 329.

Johns vs. State, 55 Md., 362.

Reiser vs. Asser, 36 Pa. St., 137.

Salters vs. Tobias, 3 Paige, 338.

But it does have power to prescribe legal definitions of its own language and when an act passed by it embodies a definition it is binding on the courts.

Smith vs. State, 28 Ind., 321.

Bird vs. State, 57 Miss., 243.

Herold vs. State, 21 Neb., 50.

People vs. New York, 16 N. Y., 424.

Iowa vs. Surprise, 64 N. H., 243.

S. C., 34 Am. Rep., 440.

Clay vs. Cent. R. R., 84 Ga., 345.

Even declaratory statutes are entitled to respectful consideration by the courts though not always binding.

Cooley's Statute Crimes, 2d Edition, section 91.

People vs. New York, supra.

Lambertson vs. Hogan, 2 Pa. St., 25.

The definition given by the legislature in section 4990 of the Code as to the term adulteration is valid and binding. Such legislation does not trench on the powers of the judiciary and is not invalid for the reason suggested.

But it is said that the legislature had no power to forbid the sale without deceit or fraud of a harmless or wholesome article of food. This may be true as a general proposition, but it is also true that in virtue of the police power it may pass such laws as are or may reasonably appear to be necessary for the health, comfort, or safety of the people. No clear or comprehensive definition of the police power has ever been given, and it is doubtful if one can be framed that will be accurate and cover every conceivable case that may arise. It is much easier to determine whether the particular case comes within the scope of the power, than to give a definition that will be applicable to all cases.

In *Hannibal R. R. Co. vs. Husen*, 95 U. S., 465, it is said: "The police power of a state extends to the protection of the lives, limbs, health, comfort and quiet of all persons, and to the protection of all property within the state, and hence to the making of all regulations promotive of domestic order, morals, health and safety."

The power belongs to the several states and not to the Federal government, save in exceptional cases; and so long as the legislature does not pass the limits prescribed by the Federal or State Constitutions, Courts have no authority to interfere on the ground that the acts in question violate natural principles of right and justice. Ordinarily the legislature determines when the public welfare and safety demand its exercise; and as a general rule courts have nothing to do with the policy, wisdom or necessity of the enactment. Of course a state cannot by arbitrarily assuming that a commodity is injurious to the health or comfort of the people, impair individual rights guaranteed by the Constitution. The police power of the state, like every other, is subject to the constitution, and cannot be used as a cloak under which to disregard constitutional rights or restrictions.

*R. R. vs. Hausen*, supra.

*In re Jacobs*, 98 N. Y., 98.



The question is of a necessity primarily with the legislature and its decision should not be lightly disregarded. Courts will not interfere as a rule, unless there is a plain excess or usurpation of power; and in case of doubt it should be solved in favor of the power of the legislature to make the enactment.

It was an indictable offense at common law, to mix unwholesome ingredients, such as alum in bread, or to mix unwholesome substances in anything intended for food for man.

There is an ancient statute, 51 Hen., III, prohibiting the sale of corrupted wine, contagious or unwholesome flesh, or flesh that is bought of a Jew.

4 Black. Com., 162.

In *Rex vs. Dixon*, 3 M. & S., II, defendant was indicted for furnishing bread not fit for food. It appeared that the loaves were strongly impregnated with alum, and that large pieces of crude alum were found in them. Defendant's motion for a new trial, filed after a verdict of guilty, was overruled, the court saying "that alum being perilous to health in the form used, it was immaterial that if used in certain quantities it was not noxious but wholesome."

Statutes enacted to secure the sale of pure food and to prevent adulteration are quite common in this country, and have ever been referred to the police power.

See English Sale of Food and Drugs, act of 1875.

Laws of Tenn. C. I., Sec. 4, acts 1859 and 1860.

Mass. Rev. Statutes, C. 131, Sec. 1.

They are enacted to prevent fraud and to conserve the public health, and as such are a valid exercise of the police power.

*State vs. Campbell*, 64 N. H., 492.

*Butler vs. Chambers*, 36 Minn., 69.

*Powell vs. Com.*, 127 U. S., 679.

*People vs. Arensburg*, 105 N. Y., 123.

*Waterbury vs. Newton*, 50 N. J. L., 534.

*Com. vs. Waste*, 11 Allen, Mass., 264, and 87 Am. Dec., 711.

*State vs. Smythe*, 14 R. I., 100.

51 Am. Dec., 711, 343.

*People vs. Cleperly*, 101 N. Y., 634.

*Com. vs. Gordon*, 159 Mass., 8.

*Com. vs. Schaffner*, 146 Mass., 512.

That the sale of milk to which water and boracic acid have been added may amount to a fraud upon the purchaser is evident. He has a right to assume that the milk he buys is unadulterated and that it will go through the natural process of oxidation and decomposi-

tion. He may wish to use sour milk for culinary purposes, and has the right to assume that nothing has been added to prevent chemical changes. Counsel for the appellee responds to this thought by saying that defendant notified all persons to whom he sold milk that boracic acid had been added, and that no one of the witnesses for the state was deceived. The record does not bear them out in this contention, but even if it did we would have no help therefrom in solving the non-constitutional question involved. It may be conceded that the milk sold by defendant was not harmful to the health of those who used it; but it is certainly dangerous to the public to permit milkmen and those dealing in milk to adulterate it in such a manner as to change its constituent properties.

The statute does not deprive the defendant of his property but it does impose upon him the duty of so using it that no injury shall result to others most likely to be affected by a disregard on his part of the reasonable health regulations that it enacts. Almost every police regulation affects to a greater or less extent some property right; but these rights are subject to such reasonable limitations in their enjoyment as will prevent them from being injurious, and to such reasonable regulations as the legislature under the constitution may deem necessary and expedient. In the Schaffer case from Massachusetts and the Campbell case from New Hampshire, it is expressly held to be immaterial whether the foreign matter is or is not injurious to health. The court said in the latter case, "that if the legislature has power to fix a standard it must judge whether or not milk below that standard is unwholesome;" and in the former it was held, that the addition of pure water to milk was an adulteration under the statute. In *State vs. Gordon*, supra, it is expressly held that the addition of boracic acid to cream was an offense under the statute of Massachusetts.

See also *Com. vs. Wetherbee*, 26 N. E. Rep., 414.

In *Com. vs. Waite*, 11 Allen, 264, the exact question made by this defendant in this case was decided, the court using the following language: "It is innocent and lawful to sell pure milk, and it is innocent and lawful to sell pure water, and the argument is that the legislature has no power to make the sale of milk and water when mixed a penal offense, unless it is done with a fraudulent intent. But it is notorious that the sale of milk adulterated with water is extensively practiced with fraudulent intent. It is for the legislature to judge what reasonable laws ought to be enacted to protect the people against this fraud and to adapt the protection to the nature of the case. They have seen fit to require that every man who sells

milk shall take the risk of selling a pure article. No man is obliged to go into the business, and by using proper precautions any dealer can ascertain whether the milk he offers for sale has been watered. The court can see no ground for pronouncing the law unreasonable and has no authority to judge as to its expediency."

It is not enough to show that the defendant did not intend to defraud or that the milk he sold was wholesome. If that were true almost any law intended to protect the public health and safety might be overthrown. It is enough that an adulteration such as prescribed by the statute may defraud or prove deleterious to the public health or comfort.

The legislature may well determine that the adulteration of milk tends to facilitate vicious practices, and that it ought to be prohibited. To defeat the act prohibiting such conduct, it is not enough to show that in a particular case the article sold was innocuous. Criminal intent is not an essential element of the offense described in the statute and need not be shown in order to justify a conviction.

Com. vs. Smith, 103 Mass., 444.

Com. vs. Nichols, 10 Allen, 199.

Com. vs. Farren, 9 Allen, 489.

People vs. Kibber, 106 N. Y., 321.

State vs. Smith, 10 R. I., 258.

If the statute required knowledge or intent of course these matters should be shown. These propositions are sufficient answer to the opinion of the trial court holding that an intent to defraud is necessary. Appellee further contends that the statute in question is a violation of the 14th amendment to the Federal Constitution. Such contention is not sound for it is fundamental that this amendment does not impose any restraints on the exercise of the police power of the state for the protection of the safety or the morals of the community.

Barbier vs. Connolly, 113 U. S., 27.

Kidd vs. Pearson, 128 U. S. 1.

In re Rahrer, 140 U. S., 541.

People vs. King, 110 N. Y., 418.

The conclusion of the learned trial judge was made to depend almost wholly on the facts developed by the evidence. If the jury had found the milk as adulterated unwholesome, we have no doubt that the trial court would have sustained the conviction. That the constitutionality of a statute ought not to be made to depend upon the finding of a jury of the facts of a case, is manifest.

If the plain provisions of the constitution have been violated or if the act cannot be said to be a proper exercise of the police power

in view of the facts of which judicial notice may be taken, then the duty of declaring the act invalid is clear. But in the absence of such finding, the act should stand. Ordinarily, it cannot, we think, be a question of fact for a jury.

See *People vs. Sipperly*, supra.

*People vs. Smith*, 66 N. W. R., 382.

*People vs. Marx*, 99 N. Y., 377, is relied upon by appellee. That case involved the right to sell oleomargarine and not the question of adulteration. That it is not in conflict with anything we have announced clearly appears from the *Sipperly* case in 101 N. Y., 634.

See also *People vs. Arensburg*, 103 N. Y., 388.

*Schollenberger vs. Penn.*, 171 U. S., 1, involved the commerce clause of the constitution and it was held that the legislature could not under the guise of a police power, absolutely prohibit the sale of articles which are the subjects of interstate commerce. It does not overrule *Powell vs. Penn.*, 127 U. S., 678, or *Plumley vs. Mass.*, 155 U. S., 461, and as those cases sustain our holding, we may well rest thereon.

Lastly, it is said that section 4990 of the Code is void because the subject is not expressed in the title. The act is found in the Code of 1897. Whether or not it existed prior to that time is immaterial to our present inquiry. Some claim is made that the title of the act adopting the Code and particularly that part of it under consideration, is insufficient. Our attention has not been called to any defects in the enactment of the Code as a whole or by titles and chapters, and in the absence of such a showing and of the most cogent arguments in support of the claim, we are not justified in holding that either the Code or any section or chapter thereof is void, because of the constitutional provision defining what shall be embraced in the title of an act. The title to the original act was sufficiently specific.

*State vs. Forkner*, 62 N. W. R., 772.

*State vs. Lunn*, 81 Iowa, 642.

*Christy vs. Ins. Co.*, 82 Iowa, 360.

We have covered all the points made in argument and reach the conclusion that the trial court was in error in his conclusions of law and we therefore reverse the same, to the end that the proper rule may be established for such cases.

Reversed.

FINANCIAL STATEMENT.

DAIRY AND FOOD COMMISSION.

DISBURSEMENTS FOR THE YEAR ENDING SEPTEMBER 30, 1899.

Adams, H. C., com'r, salary .....	\$2,500 00
Adams, H. C., com'r, expenses.....	269 76
Chadwick, W. W., asst. com'r, salary.....	1,600 00
Chadwick, W. W., asst. com'r, expenses.....	1,539 63
Mitchell, A. S., chemist, salary .....	1,800 00
Mitchell, A. S., chemist, expenses .....	300 49
Norton, F. Q., stenographer and clerk, salary .....	900 00
Field, N. J., dairy inspector, per diem and expenses.....	1,692 72
Hicks, E. R., attorney general, expenses.....	9 78
Democrat Printing Co., printing blanks.....	8 28
Democrat Printing Co., printing report.....	1,325 67
Madison post office, postage .....	277 00
Madison post office, box rent .....	8 00
Wisconsin Telephone Co., messages .....	14 65
Dane County Telephone Co., rental.....	24 00
Western Union Telegraph Co., telegrams.....	31 97
Postal Telegraph Cable Co., telegrams.....	1 24
American & U. S. Express Co., expressage .....	70 82
<b>Laboratory—</b>	
Vilas, W. F., rent .....	500 00
Madison Gas & Electric Co., gas.....	14 35
Frank, H. O., mdse .....	9 55
Dohmen, F., Co., mdse.....	5 00
Sargent, E. H., & Co., mdse.....	63 96
Creamery Package Mfg. Co., mdse.....	6 10
Drake Bros. Co., mdse.....	2 95
Hollister's Pharmacy, mdse.....	4 55
Goodyear Rubber Co., mdse.....	4 33
	\$12,984 80

# 220 REPORT OF THE WISCONSIN DAIRY & FOOD COMMISSIONER.

## DISBURSEMENTS FOR THE YEAR ENDING SEPTEMBER 30TH, 1900.

<b>Dairy and Food Commissioner's Department—</b>	
Adams, H. C., com'r, salary.....	\$2,500 00
Adams, H. C., com'r, expenses.....	568 40
Sweeting, C. W., asst. com'r, salary.....	1,334 00
Sweeting, C. W., asst. com'r, expenses.....	1,089 44
Chadwick, W. W., asst. com'r, salary.....	266 00
Chadwick, W. W., asst. com'r, expenses.....	443 67
Mitchell, A. S., chemist, salary.....	1,800 00
Mitchell, A. S., chemist, expenses.....	180 00
Norton, F. Q., stenographer and clerk, salary.....	900 00
Field, N. J., dairy inspector, salary and expenses.....	1,906 10
Democrat Printing Co., printing blanks.....	118 15
Madison Post Office, postage .....	259 00
Madison Post Office, box rent.....	8 00
Wisconsin Telephone Co., messages .....	9 75
Dane Co. Telephone Co., rental .....	24 00
Western Union Telegraph Co., telegrams.....	57 68
Postal Telegraph Cable Co., telegrams.....	1 96
American Express Co., expressage .....	144 32
United States Express Co., expressage.....	67 95
American & U. S. Express Co., expressage.....	16 70
 <b>Laboratory—</b>	
Vilas, Wm. F., rent .....	250 00
Cornish, Curtis & Greene .....	6 16
Sexton & O'Neill .....	4 45
Greig, J. ....	1 35
Drake Bros. Co. ....	8 43
Blued Bros. ....	1 65
Madison City, water rent.....	20 59
Richards & Co. ....	62 29
Elmer & Amend .....	47 90
Sargent, E. H. & Co. ....	3 28
Hollister's Pharmacy .....	2 75
Williams, Ed. ....	2 60
Madison Gas & Electric Co. ....	13 68
	\$12,120 25

# INDEX.

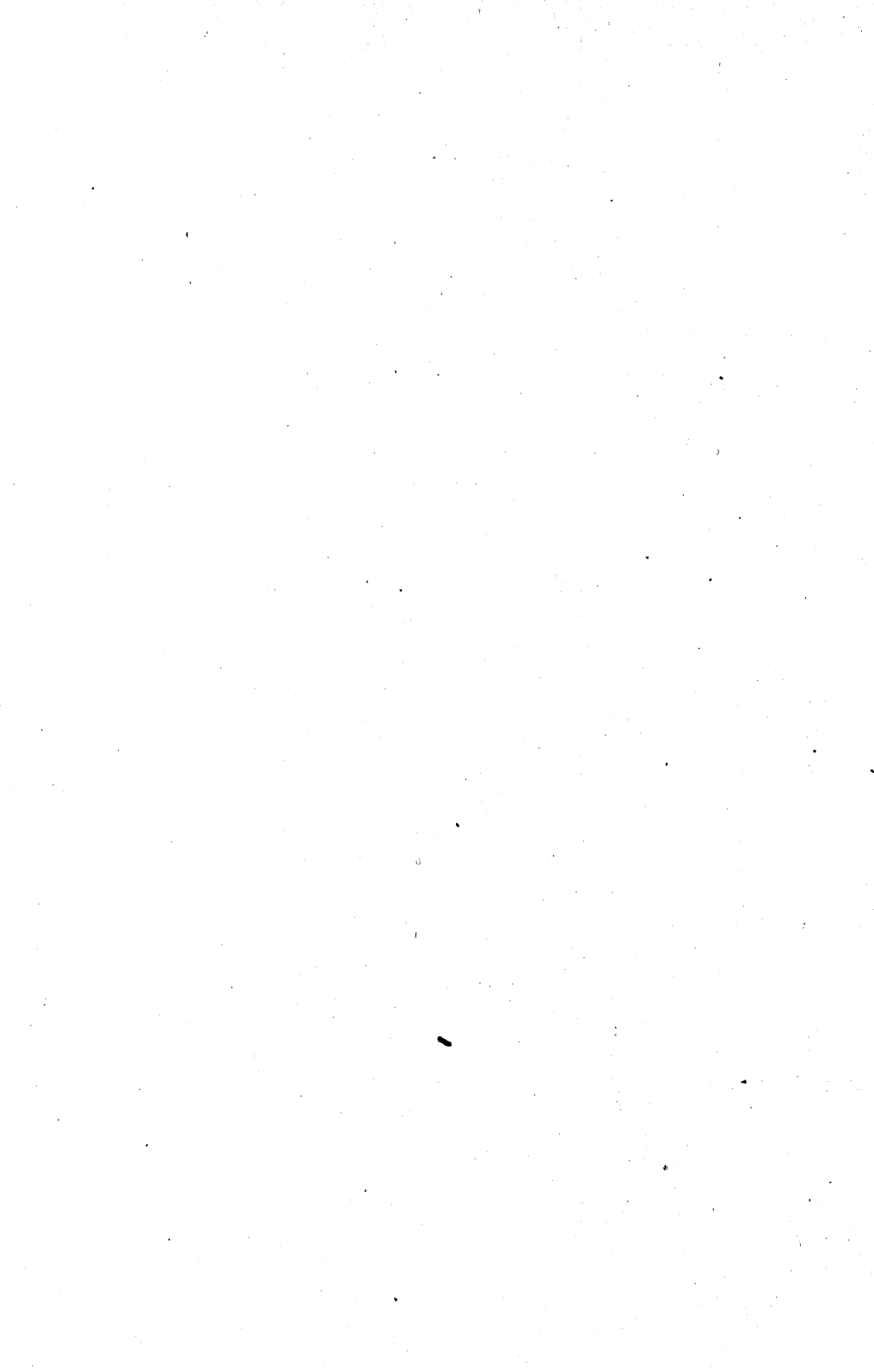
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	Page
Letter of Transmittal .....	3
Rulings Made by the Commissioner .....	5
Dairy and Food Laws .....	9
Report of the Commissioner .....	41
Dairy Education .....	44
Creameries .....	45
Cheese .....	47
Oleomargarine .....	48
National Legislation .....	51
Oleomargarine Product .....	53
Adulteration of Foods, Drugs and Liquors .....	56
Preservatives .....	57
Additional Legislation .....	58
Report of Assistant Commissioner .....	61
Report of the Chemist .....	63
Preservatives .....	63
Milk .....	70
Methods of Analysis .....	71
Milk Analyses .....	73
Milks Examined for Preservatives .....	77
Preservatives and Milk Adulterants .....	78
Cream .....	79
Examinations of Cream .....	73
Butter and Oleomargarine .....	80
Analyses of Butter and Butter Substitutes (table) ...	81
Renovated Butter .....	85
Cheese .....	85
Lard .....	85
Vinegar .....	86
Analyses of Vinegar (table) .....	88
Honey .....	89
Molasses .....	89
Syrup .....	89
Candy .....	90

	Page
Report of the Chemist—continued	
Lemon Flavoring Extracts .....	90
Extracts of Vanilla .....	92
Fruit Syrups (table) .....	92
Cream of Tartar .....	93
Baking Powder .....	93
Buckwheat .....	93
Flours .....	94
Mustard .....	94
Peppers .....	94
Alspice .....	94
Catsups .....	95
Ginger .....	95
Linseed Oils .....	95
Sugar .....	95
Granulated Sugar .....	95
Miscellaneous .....	96
Water Analyses .....	97
Milk Tests .....	128
List of Convictions .....	157
List of Cheese Factories and Creameries in Wisconsin,	
1900 .....	159
Cheese Factories .....	159
Creameries .....	188
Preservatives in Milk (Iowa Supreme Court Decision) ..	212
Financial Statement .....	219







# BIENNIAL REPORT

OF THE

## COMMISSIONERS

OF THE

# PUBLIC LANDS

OF THE

## STATE OF WISCONSIN,

For the Fiscal Years Ending September 30, 1899 and 1900.



MADISON  
DEMOCRAT PRINTING COMPANY, STA PRINTER  
1901



**BIENNIAL REPORT**

OF THE

**Commissioners of the Public Lands**

OF THE

**STATE OF WISCONSIN,**

For the Biennial Fiscal Term Ending September 30, 1900.

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OFFICE OF THE COMMISSIONERS OF THE PUBLIC LANDS,

MADISON, Wisconsin, October 10, 1900.

*To His Excellency,* EDWARD SCOFIELD,

*Governor of the State of Wisconsin:*

As required by law we have the honor to submit the following report of the transactions of this office during the biennial fiscal term ending September 30, 1900. The reports of the secretary of state and state treasurer exhibit detailed statements of the receipts and disbursements on account of the several funds affected by our action and to them we respectfully refer.

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*Sales of Public Lands.*


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## SALES OF PUBLIC LANDS.

## SCHOOL LANDS.

The sales of School lands during the fiscal term ending Sept. 30, 1900, amounted to 5,505.45 acres for the sum of \$29,285.26. From these sales the state received \$27,602.50 as principal, and other charges \$366.41, and \$380.35 of a surplus on a forfeited sale, leaving a balance due of \$936.00, upon which the state receives seven per centum interest.

The following tables show the sales for the years 1899 and 1900, viz.:

*Sales of School Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Prin- cipal paid.	Interest paid.	Other charges paid.	Deposit paid.	Balance due state.
Adams .....	120.00	\$125 06	\$38 00	\$ 32	3 06		\$51 00
Ashland .....	40.00	50 00	13 00	65			37 00
Burnett .....	160.00	163 70	44 07	2 29	3 63		116 00
Crawford .....	129.43	194 15	194 15				
Dane .....	40.00	405 00	14 92		9 73	\$380 35	
Douglas .....	160.00	152 69	43 39	4 27	23 30		86 00
Dunn .....	40.00	29 53	8 89	89	2 64		18 00
Eau Claire .....	40.00	42 12	40 00				
Forest .....	40.00	53 04	39 59		13 45		
Iron .....	80.00	1,060 00	1,060 00				
Jackson .....	280.00	356 72	123 95	7 26	64 77		168 00
Juneau .....	400.00	415 98	143 89	11 52	63 09		209 00
Langlade .....	40.00	50 93	42 18		8 75		
Marinette .....	179.11	244 96	240 00		4 96		
Oneida .....	59.05	73 82	73 82				
Outagamie .....	64.47	87 80	33 69	04	16 11		38 00
Pepin .....	40.00	60 62	49 22		11 40		
Polk .....	40.00	40 20	8 96	04	10 24		21 00
Portage .....	40.00	60 00	49 22		10 78		
St. Croix .....	80.00	106 84	30 44	14	8 40		68 00
Sawyer .....	360.00	335 48	331 40		4 08		
Shawano .....	80.00	65 72	17 92	08	5 80		42 00
Vernon .....	120.00	177 75	161 46		16 29		
Vilas .....	1,380.00	19,970 00	19,970 00				
Washburn .....	280.00	253 76	253 76				
Waushara .....	80.00	85 79	76 80		8 99		
Winnebago .....	.65	65 00	65 00				
Total .....	\$4,352 71	\$24,726 66	\$23,197 72	\$27 50	\$291 59	\$380 35	\$857 00

*Sales of University Lands.*

*Sale of School Lands for the year ending September 30, 1900.*

Counties.	No. of Acres.	Amount sold for.	Principal paid.	Interest paid.	Other charges pd	Balance due.
Burnett.....	80.00	\$104 30	\$90 95		\$13 35	
Chippewa.....	40.00	40 20	8 96	\$ 04	10 24	\$21 00
Iron.....	652.20	2,750 00	2,750 00			
Juneau.....	40.00	39 10	8 89	04	10 21	20 00
Outagamie.....	40.00	66 40	16 57	08	11 83	38 00
Sawyer.....	90.00	75 40	55 64		19 76	
Vilas.....	180.54	1,465 00	1465 00			
Waupaca.....	40.00	18 20	8 77		9 43	
Total.....	1,152.74	\$4,558 60	\$4,404 78	\$ 16	\$74 82	\$79 00

UNIVERSITY LANDS.

The sales of University lands during the fiscal term ending September 30, 1900, amounted to 80 acres for the sum of \$82.00. From this sale the state received \$70.58 as principal, and other charges \$11.42, being the amount in full.

The following table shows the sales for the year 1899—no sales having been made during the fiscal year 1900, viz.:

*Sale of University Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Principal paid.	Interest paid.	Oth'r chg's paid.
Pierce.....	80.00	\$82 00	\$70 58		\$11 42

---

*Sales of Agricultural College Lands.*


---

## AGRICULTURAL COLLEGE LANDS.

The sales of Agricultural College lands during the fiscal term ending September 30, 1900, amounted to 160 acres for the sum \$197.18. From these sales the state received \$104.36 as principal, and other charges \$31.82 and \$7.00 surplus on a forfeited sale leaving a balance of \$54.00, upon which the state receives seven per centum interest.

The following tables show the sales for the years 1899 and 1900 viz.:

*Sales of Agricultural College Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Principal paid.	Other c'gs paid.
Shawano.....	80 00	\$99 38	\$79 18	\$20 20

*Sales of Agricultural College Lands for the year ending September 30, 1900.*

Counties.	No. of acres.	Amount sold for.	Prin- cipal paid.	Interest paid	Other charges paid.	Deposit paid.	Balance due.
Polk.....	40 00	\$52 40	\$12 59	06	\$5 81	\$7 00	\$27 00
Shawano.....	40 00	45 40	12 59	06	5 81	.....	27 00
Total..	80.00	\$97 80	\$25 18	12	\$11 62	\$7 00	\$54 00



*Sales of Normal School Lands.*

NORMAL SCHOOL LANDS.

The sales of Normal School lands during the fiscal term ending September 30, 1900, amounted to 10,004.18 acres for the sum of \$15,723.41. From these sales the state received \$15,409.14 as principal, and other charges \$68.27, leaving a balance of \$246.00, upon which the state receives seven per centum interest.

The following table shows the sales for the year 1899, no sales having been made during the year 1900, viz.:

*Sale of Normal School Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Paid principal.	Interest paid.	Other charges.	Balance due state.
Adams .....	40.00	\$50 00	\$50 00			
Barron .....	40.00	50 00	50 00			
Bayfield .....	230.00	770 00	770 00			
Buffalo .....	06	18	18			
Burnett .....	941.88	1,207 35	1,207 35			
Chippewa .....	50.00	150 00	150 00			
Clark .....	40.00	120 00	120 00			
Door .....	80.00	53 12	42 80		\$10 32	
Douglas .....	240.00	650 00	650 00			
Dunn .....	40.00	120 00	120 00			
Florence .....	756.00	945 00	945 00			
Forest .....	1,011.39	1,404 24	1,404 24			
Iron .....	240.00	440 00	440 00			
Juneau .....	56.58	79 73	70 72			
Langlade .....	1,986.80	3,323 51	3,323 51			
Lincoln .....	400.00	920 00	920 00			
Marathon .....	689.70	892 99	887 43		5 56	
Marquette .....	240.00	236 84	230 00		6 84	
Marquette .....	40.00	50 00	50 00			
Monroe .....	80.00	172 27	163 15		4 12	
Oconto .....	969.81	1,453 16	1,165 73	\$14 85	41 43	\$246 00
Oneida .....	320.00	930 00	930 00			
Polk .....	80.45	148 99	148 99			
Portage .....	510.89	383 17	383 17			
Price .....	120.00	150 00	150 00			
Shawano .....	200.00	390 00	390 00			
Vilas .....	80.00	170 00	170 00			
Washburn .....	280.00	420 00	420 00			
Waupaca .....	.62	1 86	1 86			
Waushara .....	40.00	200 00	200 00			
Total .....	10,004 18	\$15,723 41	\$15,409 14	\$14 85	\$68 27	\$246

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*Sales of Drainage Lands.*


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## DRAINAGE LANDS.

The sales of Drainage lands during the fiscal term ending September 30, 1900, amounted to 10,290.71 acres for the sum of \$14,948.53. From these sales the state received \$14,821.82 as principal, and other charges \$126.71.

The following table shows the sales for the year 1899, no sales having been made during the fiscal year 1900, viz. :

*Sales of Drainage Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Principal paid.	Other charges paid.
Adams.....	40.00	\$50 00	\$50 00	.....
Ashland.....	40.00	50 00	50 00	.....
Barron.....	80.00	170 00	170 00	.....
Bayfield.....	200 00	460 00	460 00	.....
Buffalo.....	443.66	490 17	405 50	\$84 67
Burnett.....	1,106.00	1,592 52	1,592 52	.....
Chippewa.....	40.00	120 00	120 00	.....
Dodge.....	40.00	54 58	50 00	4 58
Douglas.....	205.92	407 76	407 76	.....
Florence.....	635.81	794 76	794 76	.....
Forest.....	958.18	1,267 73	1,267 73	.....
Iron.....	200.00	530 00	530 00	.....
Juneau.....	40.00	50 00	50 00	.....
La Crosse.....	79.55	238 65	238 65	.....
Langlade.....	2,125.57	3,356 96	3,356 96	.....
Lincoln.....	521.40	1,214 20	1,214 20	.....
Manitowoc.....	43.55	36 55	30 00	6 55
Marathon.....	40.00	120 00	120 00	.....
Monroe.....	127.17	71 00	63 59	7 41
Oconto.....	80.12	100 15	100 15	.....
Oneida.....	942.25	1,317 82	1,317 82	.....
Polk.....	80.00	100 00	100 00	.....
Portage.....	1,553.95	1,169 01	1,165 46	3 55
Price.....	160.00	300 00	300 00	.....
Shawano.....	120.00	360 00	360 00	.....
Vilas.....	84.00	182 00	182 00	.....
Washburn.....	200.00	250 00	250 00	.....
Waupaca.....	103.58	94 67	74 72	19 95
<b>Total.....</b>	<b>10,290.71</b>	<b>\$14,948 53</b>	<b>\$14,821 82</b>	<b>\$126 71</b>

*Sales of Indemnity Swamp Lands.*

INDEMNITY SWAMP LANDS.

The lands known as Indemnity lands are the lands which the state received as indemnity, and selected in lieu of swamp lands located by United States land warrants. The sales of such lands during the fiscal term ending September 30, 1900, amounted to 1,685.36 acres for the sum of \$5,056.08 as principal.

The following table shows the sales for the year 1899, no sales having been made during the fiscal year 1900, viz.:

*Sales of Indemnity Swamp Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Principal paid.
Chippewa.....	118.61	\$355 83	\$355 83
Forest.....	623.74	1,886 22	1,886 22
Lincoln.....	778.01	2,334 03	2,334 03
Marinette.....	40.00	120 00	120 00
Oconto.....	40.00	120 00	120 00
Oneida.....	40.00	120 00	120 00
Sawyer.....	40.00	120 00	120 00
Total.....	1,685.36	\$5,056 08	\$5,056 08

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*Sales of State Park Lands.*


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## STATE PARK LANDS.

The sales of "State Park Lands" during the fiscal term ending September, 30, 1900, amounted to 8,366.04 acres for the sum of \$60,485.00. From these sales the state received \$60,485.00.

The following tables show the sales for the years 1899 and 1900, viz.:

*Sales of State Park Lands for the year ending September 30, 1899.*

Counties.	Acres.	Amount sold for.	Principal paid.
Iron.....	732.80	\$9,350 00	\$9,350 00
Vilas.....	2,025.70	17,375 00	17,375 00
Total.....	2,758.50	\$26,725 00	\$26,725 00

*Sales of State Park Lands for the year ending September 30, 1900.*

Counties.	Number of acres.	Amount sold for.	Principal paid.
Iron.....	2,953.86	\$14,835 00	\$14,835 00
Vilas.....	2,653.68	18,925 00	18,925 00
Total.....	5,607.54	\$33,760 00	\$33,760 00

*Forfeiture of State Lands.*

SUMMARY.

The following shows the aggregate sales of land during the fiscal term ending September 30, 1900, viz:

CLASS OF LANDS.	No. acres sold.	Amount paid.
School.....	5,505.45	27,602.50
University.....	80.00	70.58
Agricultural College.....	160.00	104.36
Normal School.....	10,004.18	15,409.14
Drainage.....	10,290.71	14,821.82
Indemnity.....	1,685.36	5,056.08
State Park.....	8,866.04	60,485.00
Total.....	36,091.74	123,549.43

FORFEITURE OF STATE LANDS.

The following tables show the number of acres held on certificates in the several counties and the amounts due that were forfeited for the non-payment of interest during the fiscal years ending September 30, 1899, and 1900.

*Forfeitures for the year ending September 30, 1899.*

COUNTIES.	SCHOOL FUND.		UNIVERSITY FUND.		NORMAL FUND.	
	Acres.	Dues.	Acres.	Dues.	Acres.	Dues.
Bayfield.....	160.00	\$104 00				
Burnett.....	160.00	129 00				
Dane.....	40.00	11 17				
Green Lake.....	40.00	28 00				
Jackson.....	80.00	62 00				
Oconto.....					119.18	\$129 00
Oneida.....	80.00	74 00				
Outagamie.....	40.00	51 00				
Pierce.....			80.00	\$66 00		
Polk.....	40 00	28 00				
Portage.....	40.00	46 00				
St. Croix.....	80.00	92 00				
Shawano.....	80.00	56 00				
Taylor.....	50.00	74 00				
Vernon.....	120.00	150 90				
Washburn.....	668.28	364 00				
Total.....	1,708.28	\$1,270 07	80.00	\$66 00	119.18	\$129 00

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*Forfeiture of State Lands.*


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*Forfeitures for the year ending September 30, 1900.*

COUNTIES.	SCHOOL FUND.		AGRICULTURAL COLLEGE FUND.	
	Acres.	Dues.	Acres.	Dues.
Ashland.....	40.00	\$37 00	.....	.....
Bayfield.....	600.00	390 00	.....	.....
Burnett.....	120.00	122 00	.....	.....
Chippewa.....	40.00	28 00	.....	.....
Douglas.....	640.00	456 00	.....	.....
Juneau.....	40.00	27 00	.....	.....
Monroe.....	480.00	335 00	.....	.....
Oconto.....	120.00	122 00	.....	.....
Outagamie.....	40.00	51 00	.....	.....
Polk.....	.....	.....	40.00	\$37 00
Sawyer.....	80.00	52 00	.....	.....
Shawano.....	.....	.....	40.00	37 00
Washburn.....	144.18	96 00	.....	.....
Waupaca.....	40.00	1 00	.....	.....
Total.....	2,384.18	\$1,717 00	80.00	\$74 00

*Dues.*

TOTAL DUES.

The following table shows the amounts due the several Funds upon lands held on certificates in the different counties outstanding for the fiscal term ending September 30, 1900, on which the state receives annually seven per centum interest.

This statement, compared with same in former reports, shows a large and continuous decrease of principal and income from this source, which is accounted for by the increase of full payments on outstanding certificates and fewer purchases of land on contract.

TOTAL DUES ON CERTIFICATES.

*Statement of total dues on certificates for the fiscal term ending September 30, 1900.*

Counties.	Amount School Fund.	University Fund.	Agricultural College Fund.	Normal School Fund.	Drainage Fund.	Aggregate amount due the state.
Adams .....	\$1,882 00			\$184 00		\$2,066 00
Ashland .....	212 00					212 00
Barron .....	112 00					112 00
Bayfield .....	143 00					143 00
Brown .....	279 72					279 72
Buffalo .....	488 00				\$49 00	537 00
Burnett .....	880 00					880 00
Calumet .....	60 00				20 00	80 00
Chippewa .....	301 00	\$93 00				394 00
Clark .....	260 00					260 00
Columbia .....	1,486 60	85 00		75 00		1,646 60
Crawford .....	799 46	105 00				904 46
Dane .....	894 00					894 00
Door .....	22 00			90 00		112 00
Douglas .....	1,151 00					1,151 00
Dunn .....	591 00		\$87 00	74 00		732 00
Eau Claire .....	396 00	1,514 00				1,910 00
Florence .....	716 00					716 00
Forest .....	1,140 00					1,140 00
Grant .....	296 00					296 00
Green Lake .....	85 00					85 00
Iowa .....	216 00	41 00				257 00
Iron .....	111 00					111 00
Jackson .....	2,632 80			197 00		2,829 80
Jefferson .....	52 00					52 00
Juneau .....	1,854 00					1,854 00
Kenosha .....	181 00					181 00
La Crosse .....	331 40					331 40
La Fayette .....	25 00					25 00

## Dues.

## TOTAL DUES ON CERTIFICATES.

Statement of total dues on certificates for the fiscal term ending September 30, 1900.

Counties.	Amount School Fund.	University Fund.	Agricultural College Fund.	Normal School Fund.	Drainage Fund.	Aggregate amount due the state.
Langlade.....	\$1,332 00		\$259 00			\$1,591 00
Lincoln.....	715 00		228 00			943 00
Manitowoc.....	342 00			\$112 00		454 00
Marathon.....	217 00					217 00
Marquette.....	28 00					28 00
Marquette.....	313 00			115 00	\$179 00	607 00
Monroe.....	734 00			92 00		826 00
Oconto.....	1,141 00		65 00	1,142 00		2,348 00
Oncida.....	230 60					230 00
Outagamie.....	490 00			515 00		1,005 00
Pepin.....	40 00	\$793 00				833 00
Pierce.....	465 32	1,684 00				2,149 32
Polk.....	1,939 00		26,870 00			28,809 00
Portage.....	925 00	54 00		386 00		1,365 00
Price.....	252 00					252 00
Racine.....	537 00					537 00
Richland.....	1,105 00	146 00				1,251 00
Rock.....	622 00					622 00
St. Croix.....	2,534 86					2,534 86
Sauk.....	365 90					365 90
Sawyer.....	179 00					179 00
Shawano.....	1,360 60		378 00	856 00		2,594 60
Sheboygan.....	200 00					200 00
Taylor.....	97 00		54 00			151 00
Trempealeau.....	361 72					361 72
Vernon.....	1,472 60					1,472 60
Vilas.....	105 00					105 00
Washburn.....	656 00					656 00
Washington.....	25 00					25 00
Waukesha.....	90 00					90 00
Waupaca.....	685 00					685 00
Waushara.....	785 00			237 00	45 00	1,067 00
Winnebago.....	113 00				290 00	403 00
Wood.....	121 00					121 00
Total.....	\$38,226 98	\$4,515 00	\$27,921 00	\$4,075 00	\$583 00	\$75,320 98



*Loans.*

LOANS.

The following table shows the amount due the Trust Funds for the fiscal term ending September 30, 1900, on account of loans to individuals. No loans to individuals have been made since 1865, and the amount is gradually diminishing by payments and forfeitures as shown by the following table for the years 1899 and 1900.

INDIVIDUAL LOANS.

*Statement of the Trust Funds on account of loans made to individuals in the several counties September 30, 1900, compared with the amounts due September 30, 1898.*

Counties.	Outstanding September 30, 1898.	Paid dur- ing 1899 and 1900.	Outstanding September 30, 1900.
Adams .....	\$535 00		\$535 00
Brown .....	250 00	\$250 00	
Chippewa .....	300 00		300 00
Columbia .....	1,100 00	350 00	750 00
Dane .....	950 00	700 00	250 00
Dodge .....	740 00	240 00	500 00
Green Lake .....	500 00	500 00	
Iowa .....	2,149 24	500 00	1,649 24
Jackson .....	200 00		200 00
Jefferson .....	400 00	400 00	
Juneau .....	450 00	150 00	300 00
Lafayette .....	250 00	250 00	
Manitowoc .....	450 00		450 00
Marquette .....	661 50		661 50
Monroe .....	620 00		620 00
Pierce .....	133 00	133 00	
Portage .....	200 00	100 00	100 00
Racine .....	400 00		400 00
Racine, city .....	434 10		434 10
Richland .....	125 00		125 00
Waushara .....	450 00		450 00
Total.....	\$11,297 84	\$3,573 00	\$7,724 84

## Loans.

## LOANS.

The following table shows the outstanding Loans to School Districts September 30, 1898, new loans made and amount of principal paid for the fiscal term ending September 30, 1900.

Statement of School District Loans for fiscal term ending September 30, 1900.

No.	Name of District.	County.	Fund.	Out- standing Septem- ber 30, 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Septem- ber 30, 1900.
2	Monroe	Adams	School	\$87 50	\$87 50		
Jt. 1	Lincoln & New Chest- er	do	do	100 00	100 00		
Jt. 1	Strong's Prairie and Monroe	do	do	100 00	100 00		
3	Leola	do	do	100 00	50 00		\$50 00
Jt. 10	Jackson and New Haven	do	do	300 00	200 00		100 00
2	Leola	do	do	175 00	87 50		87 50
Jt. 2	Richfield & Colburn	do	do	300 00	100 00		200 00
5	Preston	do	do		40 00	\$200 00	160 00
Jt. 9	Jackson and New Chester	do	do		58 34	175 00	116 66
3	Richfield	do	do		50 00	300 00	250 00
4	Dell Prairie	do	do		100 00	400 00	300 00
Jt. 2	Monroe & Big Flats	do	do			123 00	123 00
2	Colbourn	do	do			500 00	500 00
6	Butternut	Ashland	do	125 00	125 00		
	Morse School Di- rectors	do	do	4,000 00	800 00		3,200 00
2	Maple Grove	Barron	do	120 00	60 00		60 00
3	Stanley	do	do	243 75	162 50		81 25
10	Cumberland	do	do	200 00	200 00		
3	Sumner	do	do	90 00	63 00		30 00
Jt. 1	Stanford, Stanley and Barron	do	do	352 00	176 00		176 00
5	Prairie Farm	do	do	400 00	200 00		200 00
9	Turtle Lake	do	do	126 00	84 00		42 00
8	Turtle Lake	do	do	162 50	162 50		
3	Cumberland	do	do	280 00	140 00		140 00
1	Cumberland	do	do	600 00	200 00		400 00
11	Barron & Stanford	do	do	240 00	48 00		192 00
Jt. 6	Stanford	do	do	200 00	40 00		160 00
8	Clinton	do	do	270 00	54 00		216 00
7	Turtle Lake	do	do	250 00	50 00		200 00
11	Barron	do	do		39 00	195 00	156 00
5	Turtle Lake	do	do		40 00	200 00	160 00
6	Cumberland	do	do		180 00	270 00	90 00
16	Clinton	do	do		60 00	300 00	240 00
9	Clinton	do	do		50 00	300 00	250 00
8	Turtle Lake	do	do		60 00	300 00	240 00
10	Maple Grove	do	do			200 00	200 00
8	Clinton	do	do			300 00	300 00
2	Maple Grove	do	do			250 00	250 00
3	Chetek	do	do			322 00	322 00
7	Town & City of Barron	do	do			390 00	390 00
Jt. 1	Washburn School Di- rectors	Bayfield	do	12,500 00	5,000 00	7,000 00	7,000 00
	Iron River School Di- rectors	do	do	1,000 00	1,000 00		
	Washburn School Di- rectors	do	do	6,000 00	2,000 00		4,000 00

Loans.

Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing September 30, 1898.	Princi-pal paid in 1899 and 1900.	New loan made.	Out-standing September 30, 1900.
1	Bayfield High School	Bayfield	School	\$17,500 00	\$5,000 00		\$12,500 00
2	City of Green Bay	Brown	Normal	980 00	280 00		700 00
5	Suamico	do	School			\$552 00	552 00
3	Lawrence	do	do			1,000 00	1,000 00
2	City of De Pere	do	do			4,500 00	4,500 00
4	Buffalo	Buffalo	do	50 00	50 00		
5	Nelson	do	do	440 00	440 00		
Jt. 1	Mondovi & Naples	do	do	200 00	100 00		100 00
Jt. 3	Maxville	do	do			200 00	200 00
5	Dover and Naples	do	do			800 00	800 00
5	Rusk	Burnett	do	300 00	100 00		200 00
6	Wood Lake	do	do	300 00	100 00		200 00
5	Wood Lake	do	do	140 00	93 34		46 66
3	Rusk	do	do	100 00	40 00		60 00
6	Wood Lake	do	do		50 00	200 00	150 00
2	Grantsburg	do	do		100 00	500 00	400 00
10	Grantsburg	do	do			75 00	75 00
5	Chilton	Calumet	do	300 00	200 00		100 00
7	Brillion	do	do	500 00	500 00		
6	Arthur	Chippewa	do	100 00	100 00		
7	Arthur	do	do	100 00	100 00		
3	Edson	do	do	300 00	200 00		100 00
8	Big Bend	do	do	500 00	200 00		300 00
11	Edson	do	do	3,200 00	800 00		2,400 00
7	Wheaton	do	do	300 00	100 00		200 00
9	Edson	do	do	720 00	160 00		560 00
8	Edson	do	do	525 00	150 00		375 00
7	Edson	do	do	540 00	120 00		420 00
6	Lafayette	do	do	150 00	100 00		50 00
2	Auburn	do	do	200 00	50 00		150 00
3	Wheaton	do	do	990 00	220 00		770 00
Jt. 2	Edson & Vil. of Boyd	do	do	3,000 00	600 00		2,400 00
13	Edson	do	do	500 00	100 00		400 00
4	Wheaton	do	do		70 00	700 00	630 00
4	Anson	do	do		100 00	600 00	500 00
9	Big Bend	do	do		59 00	500 00	531 00
11	Edson	do	do		60 00	600 00	540 00
6	Sampson	do	do		350 00	700 00	350 00
15	Edson	do	do			500 00	500 00
1	Anson	do	do			600 00	600 00
4	Sampson	do	do			500 00	500 00
Jt. 8	Bloomer and Sampson	do	do			250 00	250 00
4	Edson	do	do		60 00	600 00	540 00
17	Big Bend	do	do		42 00	420 00	378 00
2	Anson	do	do			500 00	500 00
8	Arthur	do	do			250 00	250 00
6	Edson	do	do			400 00	400 00
Jt. 3	Green Grove & Colby	Clark	do	100 00	100 00		
Jt. 4	Hoard and Mayville	do	do	50 00	50 00		
2	Pine Valley	do	do	250 00	100 00		150 00
2	Loyal	do	do	900 00	300 00		600 00
4	Unity	do	do	100 00	100 00		
2	Hewitt	do	do	300 00	200 00		100 00
2	Withee	do	do	200 00	200 00		
5	Levis	do	do	228 58	114 28		114 30
3	York and Grant	do	Norm'l School	600 00	200 00		400 00
2	Hixon	do	do	333 34	334 34		
2	Green Grove	do	do	400 00	200 00		200 00
1	Lynn	do	do	640 00	320 00		320 00
Jt. 1	Colby City and Town and (Hull Marathon Co.	do	do	600 00	200 00		400 00
6	Levis	do	do	352 00	176 00		176 00

## Loans.

## Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out- standing Sept. 30, 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
4	Hixon.....	Clark	School	\$593 54	\$237 42		\$353 12
1	Weston.....	do	do	400 00	200 00		200 00
Jt. 1	Thorp and Withee and Village of Thorp.....	do	do	1,500 00	600 00		900 00
3	Hewitt.....	do	do	200 00	100 00		100 00
2	Lynn.....	do	do	255 00	170 00		85 00
Jt. 1	Colby & Green Grove	do	do	600 00	200 00		400 00
Jt. 1	Mayville, Colby and Village of Abbots- ford and Hull and Holeton, Marathon Co.....	do	do	1,100 00	220 00		880 00
Jt. 1	Hixon and Hoard.....	do	do		50 00	\$500 00	450 00
6	Worden.....	do	do			300 00	300 00
5	Worden.....	do	do			600 00	600 00
7	Levis.....	do	do			345 00	345 00
1	Pine Valley.....	do	do			300 00	300 00
4	Levis.....	do	do			500 00	500 00
1	Washburn.....	do	do			400 00	400 00
Jt. 1	De Korra.....	Columbia	do	300 00	200 00		100 00
Jt. 5	Village of Rio, & Ot- sego and Lowville.....	do	do	1,500 00	300 00		1,200 00
Jt. 2	Randolph, Courtland Springvale and Vil- lage of Cambria.....	do	do	7,000 00	2,000 00		5,000 00
7	Scott.....	Crawford	do	180 00	120 00		60 00
Jt. 6	Freeman and Seneca.....	do	do	500 00	200 00		300 00
Jt. 11	Utica and Clayton.....	do	do	960 00	240 00		720 00
Jt. 2	Eastman & Marietta.....	do	do	250 00	100 00		150 00
Jt. 4	Clayton and Village of Soldiers Grové.....	do	do	2,250 00	500 00		1,750 00
6	Clayton.....	do	do	400 00	160 00		240 00
9	Prairie du Chien.....	do	do		110 00	550 00	440 00
Jt. 2	Wauzeka, Village & Town.....	do	do		.95 00	950 00	855 00
6	Wauzeka.....	do	do			300 00	300 00
Jt. 2	Marietta & Eastman.....	do	do			400 00	400 00
Jt. 11	Wauzeka & Marietta.....	do	do			330 00	330 00
11	Madison.....	Dane	do	383 33	383 33		
5	Albion.....	do	do	200 00	200 00		
1	Oregon.....	do	do	7,200 00	1,800 00		5,400 00
1	Oregon.....	do	do	900 00	200 00		700 00
Jt. 6	Middleton and Madi- son.....	do	do	383 33	383 33		
Jt. 1	Windsor and Burke.....	do	do	162 50	162 50		
Jt. 5	Christiana and Oak- land.....	Dane and Jefferson	do	1,300 00	520 00		780 00
1	Blue Mounds.....	Dane	do	2,100 00	600 00		1,500 00
3	Blue Mounds.....	do	do			400 00	400 00
Jt. 7	Albion and Fulton.....	do	do			1,900 00	1,000 00
9	Cross Plains & Spring- dale.....	do	do			800 00	800 00
11	Madison.....	do	do			1,500 00	1,500 00
Jt. 5	Village and Town of Deerfield.....	do	do			2,500 00	2,500 00
Jt. 3	City of Stoughton & Town of Dunkirk.....	do	do			5,000 00	5,000 00
7	Oak Grove.....	Dodge	do	500 00	500 00		
Jt. 9	Beaver Dam and Low- ell.....	do	do	250 00	250 00		
	Jt. Free High School, Williamstown and City of Mayville.....	do	do	5,000 00	1,000 00		4,000 00

Loans.

Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi-pal paid in 1899 and 1900.	New loans made.	Out-standing Sept. 30, 1900.
7	Oak Grove.....	Dodge	School				
5	Nasewaupée.....	Door	do			\$2,000 00	\$2,000 00
2	Egg Harbor.....	do	do	\$56 25	\$56 25		
3	Clay Banks.....	do	do	500 00	100 00		400 00
2	Jacksonport.....	do	do	200 00	100 00		100 00
Jt. 3	Nasewaupée & S'g' B'y	do	do	187 50	187 50		
8	Sevatopol.....	do	do	661 10	188 90		472 20
3	Giberalter.....	do	do	650 00	216 67		433 33
1	Clay Banks.....	do	do	400 00	100 00		300 00
1	Nasewaupée.....	do	do		100 00	500 00	400 00
4	Nasewaupée.....	do	do		200 00	1,000 00	800 00
6	Liberty Grove.....	do	do			500 00	500 00
	Brule Directors.....	Douglas	do			40 00	400 00
	Superior Sch. Direc's.	do	do	500 00	500 00		
	Nebagamin Sch. D't's	do	do	2,500 00	1,000 00		1,500 00
	Nebagamin Sch. D't's	do	do	250 00	250 00		
3	Colfax.....	do	do		500 00	5,000 00	4,500 00
7	Spring Brook.....	Dunn	do	100 00	100 00		
1	Tiffany.....	do	do	80 00	80 00		
9	Menomonie.....	do	do	200 00	200 00		
5	Sherman.....	do	do	100 00	100 00		
2	Colfax.....	do	do	200 00	200 00		
Jt. 4	Otter Creek, Colfax,	do	do	80 00	80 00		
	Grant and Taintor.....	do	do				
5	Colfax.....	do	do	150 00	75 00		75 00
5	Stanton.....	do	do	100 00	100 00		
5	Lucas.....	do	do	100 00	100 00		
5	Hay River.....	do	do	100 00	100 00		
Jt. 8	Stanton and Tiffany	do	do	220 00	55 00		165 00
3	Grant.....	do	do	150 00	60 00		90 00
3	Otter Creek.....	do	do	160 00	50 00		50 00
4	Weston.....	do	do	300 00	46 00		254 00
Jt. 6	Taintor & Otter Creek	do	do	600 00	200 00		400 00
Jt. 5	Sheridan and New	do	do	150 00	30 00		120 00
	Haven.....	do	do				
3	Hay River.....	do	do		45 00	360 00	315 00
6	Stanton.....	do	do		70 00	350 00	280 00
2	Tiffany.....	do	do			230 00	230 00
4	Weston.....	do	do			300 00	300 00
Jt. 7	Colfax and Taintor..	do	do			125 00	125 00
Jt. 5	Grant and Colfax.....	do	do			400 00	400 00
2	Grant.....	do	do			500 00	500 00
	City of Eau Claire.....	Eau Claire	do			300 00	300 00
5	Brunswick.....	do	do	28,000 00	4,000 00		24,000 00
3	Clear Creek.....	do	do	300 00	200 00		100 00
2	Fairchild.....	do	do		100 00	600 00	500 00
6	Clear Creek.....	do	do			140 00	140 00
12	Metomen.....	do	do			300 00	300 00
1	Commonwealth.....	F'd d' L'c	do	5,000 00	2,000 00		3,000 00
5	Homestead.....	Florence	do	600 00	400 00		200 00
1	Homestead.....	do	do			1,000 00	1,000 00
3	High School—Wing-	do	do			1,500 00	1,500 00
	ville.....	Grant	do				
2	Fennimore.....	do	do	5,000 00			5,000 00
4	Platteville.....	do	do	4,385 00	1,455 00		2,910 00
Jt. 17	Lancaster, Beetown	do	do	1,500 00	1,000 00		500 00
	and Little Grant.....	do	do				
Jt. 11	Castle Rock & Wing-	do	do	300 00	200 00		100 00
	ville.....	do	do				
Jt. 1	Boscobel, Marion and	do	do	180 00	40 00		140 00
	Watterstown.....	do	do				
Jt. 10	Lima and Ellenboro..	do	do	9,000 00	2,000 00		7,000 00
12	Lancaster.....	do	do	400 00	80 00		320 00
		do	do		130 00	650 00	520 00

## Loans.

## Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out- standing Sept. 30 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
Jt. 1	Boscobel, Marion and Watterstown .....	Grant....	School	.....	.....	\$1,000 00	\$1,000 00
Jt. 1	Town and Village of Potosi.....	do .....	do .....	.....	.....	1,800 00	1,800 00
3	Mount Pleasant.....	Green .....	do .....	\$400 00	\$400 00	.....	2,000 00
1	New Glarus.....	do .....	do .....	4,000 00	2,000 00	.....	.....
Jt.13	Brooklyn, Rutland, Oregon and Union.....	do .....	do .....	3,000 00	600 00	2,550 00	2,400 00
8	Albany.....	do .....	do .....	.....	.....	.....	2,550 00
Jt.11	Moscow Perry and York, Dane Co.....	Iowa .....	do .....	300 00	100 00	.....	200 00
9	Moscow.....	do .....	do .....	400 00	200 00	.....	200 00
1	Moscow.....	do .....	do .....	1,440 00	360 00	.....	1,080 00
2	Ridgeway.....	do .....	do .....	.....	.....	1,200 00	1,200 00
8	Highland.....	do .....	do .....	.....	.....	3,000 00	3,600 00
4	Mifflin.....	do .....	do .....	.....	.....	3,000 00	8,000 00
4	Saxon Sch'l Direct'rs	Iron.....	do .....	2,000 00	1,000 00	.....	1,000 00
4	Vaughn.....	do .....	do .....	600 00	120 00	10,000 00	450 00
1	Vaughn.....	do .....	do .....	.....	.....	.....	10,000 00
Jt. 3	Garden Valley, North- field, Hixton and Curran.....	Jackson..	do .....	71 00	71 00	.....	.....
7	Alma.....	do .....	do .....	216 67	216 67	.....	.....
1	Northfield.....	do .....	do .....	50 00	50 00	.....	40 00
4	Garden Valley.....	do .....	do .....	80 00	40 00	.....	50 00
3	Northfield.....	do .....	do .....	150 00	100 00	.....	.....
Jt. 5	Springfield and Cur- ran.....	do .....	do .....	300 00	200 00	.....	100 00
Jt. 4	Hixton and Curran...	do .....	do .....	1,200 00	400 00	.....	800 00
3	Springfield.....	do .....	do .....	300 00	200 00	.....	100 00
Jt. 4	Hixton and Curran...	do .....	do .....	600 00	240 00	.....	360 00
Jt. 1	Albion and City Black River Falls.....	do .....	do .....	8,000 00	.....	.....	8,000 00
Jt. 1	Albion and City Black River Falls.....	do .....	do .....	2,000 00	400 00	.....	1,600 00
Jt. 5	Northfield and Gar- den Valley.....	do .....	do .....	400 00	200 00	.....	200 00
Jt.10	Hixton and Albion...	do .....	do .....	200 00	50 00	.....	150 00
Jt. 8	Albion and Irving...	do .....	do .....	.....	66 67	400 00	333 33
7	Hixton.....	do .....	do .....	.....	50 00	350 00	300 00
4	City Point.....	do .....	do .....	.....	.....	300 00	300 00
Jt. 1	Melrose and Irving...	do .....	do .....	.....	.....	2,580 00	2,580 00
Jt. 8	Garden Valley, Alma and Cleveland.....	do .....	do .....	.....	.....	400 00	400 00
1	Palmyra.....	Jefferson.	do .....	8,800 00	2,200 00	.....	6,600 00
Jt. 8	Aztalan and Farming- ton.....	do .....	do .....	3,150 00	700 00	.....	2,450 00
1	Waterloo Village.....	do .....	do .....	7,000 00	2,000 00	.....	5,000 00
3	Armenia.....	Juneau..	Norm'l School	75 00	75 00	.....	20 00
4	Clearfield.....	do .....	do .....	60 00	40 00	.....	35 00
5	Armenia.....	do .....	do .....	105 00	70 00	.....	60 00
3	Kingston.....	do .....	do .....	180 00	120 00	.....	150 00
6	Armenia.....	do .....	do .....	250 00	131 00	.....	228 55
2	Armenia.....	do .....	do .....	342 85	114 30	.....	424 00
5	Keldare.....	do .....	do .....	530 00	108 00	.....	133 33
6	Armenia.....	do .....	do .....	.....	66 67	200 00	250 00
Jt. 1	Wonevoc, Summit and Village Wone- voc and Woodland, Sauk Co.....	do .....	do .....	.....	.....	9,000 00	9,000 00
1	Finley.....	do .....	do .....	.....	.....	700 00	700 00
1	Carlton.....	Kewaunee	do .....	233 34	233 34	.....	.....
4	Carlton.....	do .....	do .....	333 33	333 33	.....	.....

Loans.

Statement of School District Loans. — Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi-pal paid 1899 and 1900.	New loans made.	Out-standing Sept. 30, 1900.
Jt. 1	Ahnapee, city and town	Kewaunee	School	\$2,000 00	\$400 00		\$1,600 00
6	Campbell	La Crosse	do	195 00	195 00		
6	Campbell	do	do	300 00	200 00		100 00
5	Campbell	do	do	1,000 00	500 00		500 00
7	Onalaska	do	do	600 00	400 00		200 00
Jt. 1	Blanchardville and Moscow, Iowa Co.	Lafayette	do	300 00	200 00		100 00
2	New Diggings	do	do	300 00	300 00		
9	Willow Springs	do	do	400 00	200 00		200 00
1	New Diggings	do	do	600 00	200 00		400 00
9	Willow Springs	do	do	276 00			276 00
6	Shullsburg	do	do			\$10,000 00	10,000 00
4	Summit	Langlade	do	30 00	30 00		
2	Summit	do	do	22 00	22 00		
2	Rolling	do	do	180 00	60 00		120 00
2	Norwood	do	do	100 00	100 00		
5	Langlade	do	do	375 00	250 00		125 00
1	Rolling	do	do	380 00	90 00		270 00
1	Rolling	do	do	864 00	192 00		672 00
4	Norwood	do	do	288 00	64 00		224 00
3	Norwood	do	do	250 00	50 00		200 00
4	Town of Rock Falls	Lincoln	do	686 50	686 50		
5	Russell	do	do	100 00	100 00		
3	Merrill Sch'l Direct'rs	do	do	900 00	600 00		300 00
4	Harrison	do	do	400 00	200 00		200 00
4	Scott	do	do	400 00	80 00		320 00
4	Russell	do	do			600 00	600 00
2	Eaton	Manit'woc	do	250 00	250 00		
4	Manitowoc city	do	do	6,000 00	4,000 00		2,000 00
Jt. 4	Manitowoc, town and city	do	do	5,000 00	1,000 00		4,000 00
4	McMillan	Marathon	do	100 00	100 00		
1	Wein	do	do	150 00	100 00		50 00
Jt. 2	Frankfort and Hull	do	do	150 00	100 00		50 00
4	Frankfort	do	do	146 66	97 78		48 88
2	Easton	do	do	150 00	60 00		90 00
Jt. 9	Wausau and Texas	do	do	220 00	110 00		110 00
5	Cleveland	do	do	96 00	96 00		
1	Kronenwetter	do	do	100 00	100 00		
Jt. 6	Village of Edgar and Castle	do	do	327 00	109 00		218 00
Jt. 3	Harrison and Plover	do	do	200 00	100 00		100 00
2	Eau Pleine	do	do	200 00	100 00		100 00
4	Wein	do	do	200 00	200 00		
1	Hull	do	do	350 00	100 00		250 00
1	Bergen	do	do	120 00	120 00		
1	Hull	do	do	192 50	55 00		137 50
5	Day	do	do	420 00	120 00		300 00
3	Marathon	do	do	200 00	200 00		
Jt. 5	Brighton and Unity, Clark Co.	do	do	41 66	41 66		
2	Halsey	do	do	165 00	110 00		55 00
1	McMillan	do	do	240 00	240 00		
1	Day	do	do	200 00	100 00		100 00
5	Eldron	do	do	240 00	60 00		180 00
3	Frankfort	do	do	480 00	120 00		360 00
5	Frankfort	do	do	320 00	80 00		240 00
4	Easton	do	do	225 00	150 00		75 00
1	Norris	do	do	400 00	400 00		
Jt. 6	Wausau and Easton	do	do	300 00	200 00		100 00
1	Harrison	do	do	250 00	83 34		166 66
6	Emmett	do	do	250 00	100 00		150 00
1	Pike Lake	do	do	420 00	52 50		367 50

## Loans.

Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
7	Weston .....	Marathon	School		\$50 00	\$200 00	\$150 00
4	Ribb Falls .....	do	do		100 00	500 00	400 00
3	Wein .....	do	do		50 00	500 00	450 00
5	Wein .....	do	do			500 00	500 00
4	Wein .....	do	do			600 00	600 00
1	Plover .....	do	do			250 00	250 00
5	Cleveland .....	do	do			700 00	700 00
5	Halsey .....	do	do			600 00	600 00
Jt. 7	Emmett and Cleve- land .....	do	do		80 00	400 00	320 00
4	Bergen .....	do	do			200 00	200 00
2	Knowlton .....	do	do		140 00	700 00	560 00
1	Village of Mosinee .....	do	do			8,000 00	8,000 00
6	Elderon .....	do	do			500 00	500 00
4	Bergen .....	do	do			75 00	75 00
4	Pike Lake .....	do	do			360 00	360 00
2	Wein .....	do	do			700 00	700 00
5	Texas .....	do	do			750 00	750 00
2	Weston .....	do	do			1,000 00	1,000 00
Jt. 4	Plover and Norrie .....	do	do			400 00	400 00
14	Mosinee .....	do	do			300 00	300 00
Jt. 2	Halsey, Reitbrock and Johnson .....	do	do			2,200 00	2,200 00
Jt. 1	Halsey and Reitbrock Stettin .....	do	do			100 00	100 00
2	Stettin .....	do	do			500 00	500 00
10	Coleman .....	Marinette	do	\$100 00	100 00		
11	Coleman .....	do	do	300 00	50 00		150 00
7	Peshigo .....	do	do	225 00	50 00		175 00
4	Peshigo .....	do	do	400 00	200 00		200 00
4	Peshigo .....	do	do	750 00	150 00		350 00
4	Grover .....	do	do	450 00	100 00		350 00
5	Coleman .....	do	do	300 00	100 00		200 00
8	Amberg .....	do	do	300 00	300 00		
	Crivitz School Direct- ors .....	do	do	900 00	200 00		700 00
8	Peshigo .....	do	do	500 00	100 00		400 00
9	Peshigo .....	do	do	400 00	80 00		320 00
10	Peshigo .....	do	do			350 00	350 00
11	Peshigo .....	do	do			500 00	500 00
7	Amberg .....	do	do			3,500 00	3,500 00
12	Peshigo .....	do	do			400 00	400 00
8	Coleman .....	do	do			800 00	800 00
8	Peshigo .....	do	do			500 00	300 00
Jt. 4	Montello .....	Marquette	do	5,280 00	1,320 00		3,960 00
	Crystal Lake and Neshkora .....	do	do	133 33	133 33		
5	City of Wauwatosa .....	Milwaukee	do	6,000 00	2,000 00		4,000 00
Jt.17	Granville & N. Milwke Milwaukee .....	do	do	2,285 71	1,142 86		1,142 85
4	Milwaukee .....	do	do	733 32	366 68		366 64
Jt.16	Wa'watosa & Grnfield Wauwatosa .....	do	do	7,000 00	2,000 00		5,000 00
8	Wauwatosa .....	do	do	4,960 00	2,480 00		2,480 00
6	Wauwatosa .....	do	do	6,300 00	630 00		5,670 00
2	Byron .....	Monroe	do	50 00	50 00		
Jt. 8	Scott & Lincoln .....	do	do	30 00	30 00		
8	Lincoln .....	do	do	105 00	30 00		75 00
Jt. 2	Lagrange, Lincoln, Byron & Scott .....	do	do	90 00	60 00		30 00
5	Byron .....	do	do	120 00	60 00		60 00
3	Wilton .....	do	do	116 66	116 66		
2	Wilton .....	do	do	250 00	83 33		166 67
4	Byron .....	do	do	163 00	32 60		130 40
8	Byron .....	do	do		15 56	140 00	124 44
6	Portland .....	do	do		25 00	125 00	100 00
Jt. 1	Portland, Jefferson & Village of Cashton .....	do	do		300 00	4,500 00	4,200 00



Loans.

Statement of School Districts Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi-pal paid 1899 and 1900.	New loans made.	Out-standing Sept. 30, 1900.
Jt. 1	Grant	Monroe	School			\$300 00	\$300 00
1	Jefferson, Portland & Village of Cashton.	do	do			3,500 00	3,500 00
2	Stiles	Oconto	do	\$300 00	\$200 00		100 00
5	Pensaukee	do	do	240 00	240 00		
Jt. 6	Little River	do	do	255 60	170 40		85 20
3	Oconto Falls & Stiles.	do	do	195 00	130 00		65 00
3	Lena	do	do	375 00	250 00		125 00
1	Gillett	do	do	2,500 00	500 00		2,000 00
3	Howe	do	do	250 00	250 00		
3	Pensaukee	do	do	315 00	70 00		245 00
3	Armstrng Sch'l Dcrtcs	do	do	1,000 00	400 00		600 00
3	Little River	do	do	850 00	212 50		637 50
3	Pensaukee	do	do	200 00	80 00		120 00
3	Brazeau	do	do			450 00	450 00
3	Maple Valley	do	do			600 00	600 00
2	Oconto Falls	do	do			700 00	700 00
2	Lena	do	do			2,000 00	2,000 00
4	do	do	do			500 00	500 00
	Pelican Sch'l Dir'ct'rs	do	do	450 00	450 00		
	Pelican	do	do	600 00	600 00		
	Pelican Sch'l Dir'ct'rs	do	do	2,500 00	1,000 00		1,500 00
	Pelican Sch'l Dir'ct'rs	do	do	1,600 00	400 00		1,200 00
	Pelican Sch'l Dir'ct'rs	do	do	1,500 00	300 00		1,200 00
2	City of Appleton	Outagmie	do	12,500 00	5,000 00		7,500 00
4	Deer Creek	do	do	200 00	200 00		
3	Black Creek & Osborn	do	do	125 00	125 00		
1	Bovina	do	do	400 00	100 00		300 00
6	Bovina	do	do	350 00	100 00		250 00
4	Maine	do	do	392 85	157 14		235 71
Jt. 2	Kakauna, City & Town & Vil. Little Chute	do	do	10,000 00	1,250 00		8,750 00
1	City of Appleton	do	do	9,000 00	2,000 00		7,000 00
2	City of Appleton	do	do	24,750 00	500 00		24,250 00
4	Bovina	do	do	500 00	100 00		400 00
9	Seymour	do	do		100 00	150 00	350 00
7	Buchanan	do	do		133 33	400 00	266 67
1	Bovina	do	do			700 00	700 00
Jt. 4	Port Washington, City and Town.	Ozaukee.	do	1,866 66	933 34		933 32
4	Albany	Pepin.	do	120 00	80 00		40 00
9	Waterville	do	do	300 00	200 00		100 00
2	Frankfort	do	do		200 00	800 00	600 00
3	Pepin	do	do			500 00	500 00
1	Spring Lake	Pierce	do	120 00	120 00		
7	Trim Belle	do	do	900 00	200 00		700 00
3	Union	do	do	910 00	260 00		650 00
5	Hartland	do	do	250 00	250 00		
1	Union	do	do	300 00	200 00		100 00
8	River Falls	do	do	540 00	120 00		420 00
Jt. 2	Ellsworth & Hartland	do	do	600 00	300 00		300 00
9	Ellsworth	do	do	400 00	200 00		200 00
1	Diamond Bluff	do	do		90 00	390 00	270 00
3	Trim Belle	do	do		62 50	625 00	562 50
8	Maiden Rock	do	do			400 00	400 00
Jt. 1	Clear Lake and Black Brook	Polk	do	510 00	340 00		170 00
2	Balsam Lake	do	do	240 00	120 00		120 00
2	Apple River	do	do	70 00	70 00		
Jt. 1	Lincoln and Village of Emery	do	do	1,410 00	470 00		940 00
4	Alden	do	do	385 00	110 00		275 00
2	Johnston	do	do	280 00	280 00		
3	Osceola	do	do	150 00	100 00		50 00

## Loans.

Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi- pal paid 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
3	Black Brook.....	Polk	School.	\$400 00	\$200 00	.....	\$200 00
1	Eureka.....	do	do	300 00	200 00	.....	100 00
6	Loraine.....	do	do	533 33	533 33	.....	.....
3	St. Croix Falls.....	do	do	100 00	100 00	.....	.....
3	Apple River.....	do	do	425 00	141 66	.....	283 34
2	Osceola Village.....	do	do	4,000 00	800 00	.....	3,200 00
2	Black Brook.....	do	do	108 00	27 00	.....	81 00
Jt. 1	Alden and Osceola.....	do	do	500 00	200 00	.....	300 00
4	Clayton.....	do	do	.....	100 00	\$500 00	400 00
2	Farmington.....	do	do	.....	100 00	700 00	600 00
1	Milltown.....	do	do	.....	.....	300 00	300 00
6	Clear Lake.....	do	do	.....	40 00	400 00	360 00
3	Milltown.....	do	do	.....	.....	400 00	400 00
2	Sterling.....	do	do	.....	.....	300 00	300 00
3	St. Croix Falls.....	do	do	.....	.....	250 00	250 00
Jt. 1	Grant.....	Portage	do	50 00	50 00	.....	.....
3	Almond a d Pine Grove and Plainfield and Oasis, Waushara Co.	do	do	200 00	200 00	.....	.....
6	Carson.....	do	do	186 64	166 64	.....	.....
7	Carson.....	do	do	199 99	133 34	.....	66 65
14	Amherst.....	do	do	700 00	200 00	.....	500 00
6	Stockton.....	do	do	150 00	150 00	.....	.....
1	Plover.....	do	do	212 00	103 00	.....	106 00
9	Grant.....	do	do	450 00	150 00	.....	300 00
Jt. 6	Plover.....	do	do	1,000 00	400 00	.....	600 00
2	Belmont and Almond.	do	do	500 00	200 00	.....	300 00
7	Carson.....	do	do	500 00	200 00	.....	300 00
Jt. 4	Buena Vista.....	do	do	166 67	166 67	.....	.....
6	Lanark and Buena Vista.....	do	do	75 00	75 00	.....	.....
Jt. 2	Hull.....	do	do	294 00	98 00	.....	196 00
7	Carson and Eau Pleine a d Milladore, Wood County.....	do	do	500 00	100 00	.....	400 00
4	Hull.....	do	do	.....	100 00	400 00	300 00
1	Eau Pleiue.....	do	do	.....	59 80	299 00	239 20
7	Eau Pleiue.....	do	do	.....	.....	290 00	290 00
2	Carson.....	do	do	.....	.....	200 00	200 00
2	Lake.....	Price	do	1,200 00	400 00	.....	800 00
11	Knox.....	do	do	400 00	200 00	.....	200 00
5	Kennan.....	do	do	.....	600 00	1,800 00	1,200 00
8	Ogema.....	do	do	.....	.....	392 00	392 00
3	Prentice.....	do	do	.....	.....	500 00	500 00
4	Ogema.....	do	do	.....	.....	350 00	350 00
3	Kennan.....	do	do	.....	.....	500 00	500 00
Jt. 8	Knox.....	do	do	.....	.....	345 00	345 00
4	Westford and Iron- ton, Sauk County.....	Richland.	do	520 00	520 00	.....	.....
Jt. 3	Westford.....	do	do	525 00	350 00	.....	175 00
5	Dayton and Akan.....	do	do	350 00	233 34	.....	116 66
Jt. 1	Forest.....	do	do	.....	.....	625 00	625 00
Jt. 1	City New Richmond, Richmond, Star Prairie and Stant'n	St. Croix.	do	1,400 00	700 00	.....	700 00
Jt. 1	Hammond and Village Hammond.....	do	do	570 00	570 00	.....	.....
Jt. 1	City New Richmond, Richmond, Star Prairie and Stant'n	do	do	2,000 00	1,000 00	.....	1,000 00
3	Eau Galle.....	do	do	200 00	200 00	.....	.....
1	Kinnickinnic.....	do	do	200 00	200 00	.....	.....
1	Glenwood.....	do	do	4,500 00	3,000 00	.....	1,500 00

Loans.

Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
Jt. 3	Cady and Springfield.	St. Croix.	School	\$200 00	\$100 00		\$100 00
Jt. 5	Stanton and Star Prairie.....	do	do	600 00			600 00
Jt. 7	Glenwood and Tiffany, Dunn County.....	do	do	233 32	233 32		
Jt. 1	Hammond, Vill. and Town.....	do	do	700 00	200 00		500 00
2	Glenwood.....	do	do	500 00	200 00		300 00
Jt. 5	Stanton and Star Prairie.....	do	do	320 00	80 00		240 00
2	Stanton.....	do	do	1,080 00	240 00		840 00
7	Somerset.....	do	do	300 00	200 00		100 00
Jt. 1	Cady and Lucas, Dunn County.....	do	do	500 00	200 00		300 00
Jt. 8	Glenwood, Emerald, Baldwin & Spring- field.....	do	do	270 00	60 00		210 00
4	Forest.....	do	do	305 00	122 00		183 00
1	Cylon.....	do	do		130 00	\$1,300 00	1,170 00
5	St. Joseph.....	do	do			600 00	600 00
Jt. 9	Hammond and Erin.....	do	do			750 00	750 00
2	Spring Green.....	Sauk	do	600 00	600 00		
Jt. 2	La Valle, Town and Village.....	do	do	600 00	200 00		400 00
Jt. 7	Woodland and West- ford, Richland Co.....	do	do		187 50	750 00	562 50
7	Birnamwood.....	Shawano	do	180 00	180 00		
5	Green Valley.....	do	do	100 00	100 00		
3	Aniwa.....	do	do	112 50	75 00		37 50
5	Hutchins.....	do	do	108 60	108 60		
2	Fairbanks.....	do	do	2,000 00	800 00		1,200 00
2	Wittenberg.....	do	do	50 00	50 00		
1	Richmond.....	do	do	190 00	190 00		
3	Green Valley.....	do	do	400 00	200 00		200 00
1	Morris.....	do	do	180 00	180 00		
Jt. 1	Richmond and Her- man.....	do	do	200 00	200 00		
4	Angelica.....	do	do	300 00	100 00		200 00
Jt. 1	Lessor, Angelica, Hartland and Ma- ple Grove.....	do	do	280 00	80 00		200 00
2	Angelica.....	do	do	116 66	116 66		
1	Wittenberg.....	do	do	640 00	160 00		480 00
6	Richmond.....	do	do	444 44	111 12		333 32
Jt. 3	Maple Grove and Pittsfield, Brown County.....	do	do	800 00	200 00		600 00
7	Birnamwood.....	do	do	800 00	200 00		600 00
6	Hutchins.....	do	do	366 67	366 67		
Jt. 6	Maple Grove and Pittsfield, Brown County.....	do	do	332 80	83 20		249 60
7	Richmond.....	do	do	375 00			375 00
Jt. 6	Angelica, Green Val- ley, N. and S. Chase, Oconto County.....	do	do	450 00	100 00		350 00
3	Germania.....	do	do	262 50	75 00		187 50
3	Wittenberg.....	do	do	3,780 00	840 00		2,940 00
6	Birnamwood.....	do	do	900 00	200 00		700 00
4	Germania.....	do	do	333 33	133 34		199 99
Jt. 5	Almon, Morris and Seneca.....	do	do	500 00	200 00		300 00
	Shawano City.....	do	do	4,000 00	2,000 00		2,000 00

## Loans.

## Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out- standing Sept. 30, 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
3	Herman, Grant, Seneca and Pella	Shawano	School.	\$1,600 00	\$320 00		\$1,280 00
6	Seneca	do	do	300 00	200 00		100 00
4	Grant	do	do		50 00	\$300 00	250 00
14	Holland	Sheboygan	do	1,083 33	433 34		649 99
6	Sheboygan	do	do	800 00	100 00		700 00
13	Mitchell	do	do			600 00	600 00
4	Pine Creek	Taylor	do	160 00	160 00		
4	Little Black	do	do	80 00	40 00		40 00
5	Deer Creek	do	do	62 50	62 50		
2	Pine Creek	do	do	140 00	140 00		
Jt. 1	Medford City and town.	do	do	1,000 00	1,000 00		
Jt. 1	Medford City and town.	do	do	502 00	502 00		
3	Grover	do	do	100 00	100 00		
1	Rib Lake	do	Norm'l	560 00	560 00		
4	Grover	do	School.	195 00	130 00		65 00
5	Chelsea	do	do	100 00	100 00		
2	Grover	do	do	700 00	234 00		466 00
2	Rib Lake	do	do	600 00	120 00		480 00
Jt. 1	Grover and Cleveland	do	do	700 00	100 00		600 00
Jt. 9	Hammel and Grover	do	do	150 00	60 00		90 00
2	Medford	do	do		41 67	375 00	333 33
2	Cleveland	do	do		140 00	700 00	560 00
4	Deer Creek	do	do			330 00	330 00
7	Little Black	do	do			300 00	300 00
11	Medford	do	do			100 00	100 00
Jt. 2	Etrick and Gale	Trimp'l'u.	do	300 00	200 00		100 00
1	Trempealeau	do	do	750 00	500 00		250 00
2	Sumner	do	do	168 64	111 12		55 52
1	Albion	do	do	100 00	100 00		
13	Trempealeau	do	do	100 00	100 00		
1	Lincoln	do	do	2,500 00	1,000 00		1,500 00
1	Sumner	do	do	660 00	220 00		440 00
Jt. 8	Arcadia and (Glencoe, Buffalo Co.)	do	do	225 00	150 00		75 00
6	Hale	do	do	210 00	60 00		150 00
4	Pigeon	do	do	375 00	125 00		250 00
5	Pigeon	do	do	300 00	100 00		200 00
Jt. 5	Etrick and (Franklin, Jackson Co.)	do	do	337 50	75 00		262 50
Jt. 1	Hale, Pigeon and Lincoln	do	do	300 00	100 00		200 00
Jt. 2	Unity and Albion	do	do	280 00	140 00		140 00
Jt. 6	Etrick and Preston	do	do			250 00	250 00
Jt. 5	Liberty and Webster	Vernon	do	50 00	50 00		
7	Union	do	do	100 00	100 00		
Jt. 1	Jefferson and Viroqua	do	do	500 00	200 00		300 00
Jt. 1	Jefferson and Viroqua	do	do	240 00	80 00		160 00
Jt. 9	Liberty and (Forest, Richland Co.)	do	do	2,010 00	670 00		1,340 00
7	Christiana	do	do	1,260 00	360 00		900 00
Jt. 9	Forest, Union, Whites-town and Stark	do	do	700 00	200 00		500 00
7	Forest	do	do	100 00	100 00		
3	Jefferson	do	do	100 00	100 00		
Jt. 5	Viroqua and Jefferson	do	do	300 00	200 00		100 00
15	Stark	do	do	800 00	200 00		600 00
Jt. 6	Jefferson and Coon	do	do	240 00	160 00		80 00
5	Bergen	do	do	200 00	200 00		
Jt. 6	Jefferson and Coon	do	do	125 00			125 00
5	Hillsboro	do	do	500 00	100 00		400 00

Loans.

Statement of School District Loans.—Continued.

No.	Name of district.	County.	Fund.	Out-standing Sept. 30, 1898.	Princi-pal paid 1899 and 1900.	New loans made.	Out-standing Sept. 30, 1900.
Jt. 3	Wheatland and (Free- man, Crawford Co.)	Vernon...	School	.....	\$110 00	\$550 00	\$440 00
9	Jefferson	do	do	.....	.....	800 00	800 00
Jt. 3	Village of Hillsboro, Hillsboro & Green- wood	do	do	.....	.....	4,000 00	4,000 00
Jt.15	Stark and Village La Farge	do	do	.....	.....	4,500 00	4,500 00
Jt. 7	Clinton and Webster Eagle River School Directors	do	do	.....	.....	800 00	800 00
	Minoqua School Di- rectors	Vilas	do	\$1,600 00	1,600 00	.....	.....
	Town of Minoqua	do	do	900 00	900 00	.....	.....
3	Walworth	Walworth	do	1,000 00	1,000 00	.....	.....
Jt. 7	Walworth, Dealvan, Geneva and Lynn	do	do	1,000 00	400 00	.....	600 00
2	Shell Lake	Washburn	do	1,800 00	1,200 00	3,000 00	3,000 00
	Veazie School Direct- ors	do	do	100 00	100 00	.....	.....
Jt. 1	Bashaw & Shell Lake Veazie School Direct- ors	do	do	500 00	500 00	.....	.....
	Minong School Direct- ors	do	do	200 00	200 00	.....	.....
	Veazie School Direct- ors	do	do	550 00	220 00	.....	330 00
	Spooner School Di- rectors	do	do	1,000 00	200 00	.....	800 00
6	Bashaw	do	do	.....	300 00	600 00	300 00
3	Bashaw	do	do	.....	.....	900 00	900 00
1	Genesee	Waukesha	do	1,120 00	280 00	350 00	350 00
4	Harrison	Waupaca	do	100 00	100 00	.....	840 00
2	Mattison	do	do	300 00	200 00	.....	100 00
Jt. 1	Farmington and Scan- dinavia	do	do	400 00	200 00	.....	200 00
1	City of Clintonville	do	do	8,100 00	1,800 00	.....	6,300 00
2	Little Wolf	do	do	3,332 80	833 20	.....	2,499 60
6	Mattison	do	do	297 00	198 00	.....	99 00
5	Mattison	do	do	300 00	100 00	.....	200 00
2	Little Wolf	do	do	.....	.....	1,908 00	1,908 00
2	Wyoming	do	do	.....	.....	600 00	600 00
Jt. 1	Wautoma and Dakota	Waushara	do	750 00	500 00	.....	250 00
Jt. 2	Rose and Springwater	do	do	537 00	358 00	.....	179 00
Jt. 1	Leon and Saxville	do	do	600 00	400 00	.....	200 00
11	Hancock	do	do	150 00	150 00	.....	.....
9	Hancock	do	do	.....	.....	1,000 00	1,000 00
5	Omro 1st Loan	Winn' bago	do	4,000 00	2,000 00	.....	2,000 00
5	Omro 2d Loan	do	do	2,000 00	.....	.....	2,000 00
4	Milladore	Wood	do	150 00	100 00	.....	50 00
5	Siegel	do	do	194 68	97 34	.....	97 34
Jt. 1	Wood and City of Pittsville	do	do	100 00	100 00	.....	.....
Jt. 6	Nekoosa Village	do	do	750 00	300 00	.....	450 00
	Sheery and Carson Portage Co.	do	do	200 00	200 00	.....	.....
3	Rock	do	do	400 00	200 00	.....	200 00
Jt. 1	Marshfield City	do	do	4,000 00	4,000 00	.....	.....
Jt. 5	Milladore and (Eau Pleine, Portage Co.)	do	do	285 00	190 00	.....	95 00
4	Remington	do	do	400 00	200 00	.....	200 00
Jt. 2	Auburndale and (Day Marathon Co.	do	do	300 00	200 00	.....	100 00

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*Loans.*


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*Statement of School District Loans. — Continued.*

No.	Name of district.	County.	Fund.	Out- standing Sept. 30, 1898.	Princi- pal paid in 1899 and 1900.	New loans made.	Out- standing Sept. 30, 1900.
5	Remington.....	Wood ....	School.	\$380 00	\$80 00	.....	\$280 00
6	Lincoln .....	do .....	do ..	250 00	100 00	.....	150 00
6	Remington .....	do .....	do ..	485 00	200 00	.....	285 00
1	Grand Rapids.....	do .....	do ..	.....	100 00	\$1,000 00	900 00
Jt. 5	Auburndale and Ves- per.....	do .....	do ..	.....	30 00	300 00	270 00
5	Rock .....	do .....	do ..	.....	147 00	441 00	294 00
2	Remington.....	do .....	do ..	.....	.....	400 00	400 00
4	Vesper .....	do .....	do ..	.....	.....	318 00	318 00
8	Wood.....	do .....	do ..	.....	.....	300 00	300 00
7	Wood.....	do .....	do ..	.....	.....	300 00	300 00
3	Vesper.....	do .....	do ..	.....	.....	400 00	400 00
Totals.....				\$468,457 76	\$166,638 55	\$187,510 00	\$489,329 21

*The Productive Trust Funds.*

THE PRODUCTIVE TRUST FUNDS.

The following statement shows the amount of Productive Trust Funds outstanding on the 30th day of September, 1900:

SCHOOL FUND.

Due on Certificates of Sales.....	\$38,226 98
Due on School District Loans.....	483,514 91
Due on Individual Loans.....	4,124 84
Certificates of Indebtedness.....	1,563,700 00
Ashland County Bonds.....	20,000 00
Ashland City Bonds.....	25,000 00
Bayfield County Bonds.....	89,000 00
Boscobel City Bonds.....	9,000 00
Chippewa Falls City Bonds.....	20,000 00
Columbus City Bonds.....	25,000 00
Chilton City Bonds.....	7,600 00
Elroy City Bonds.....	17,400 00
Eau Claire City Bonds.....	13,350 00
Highland Village Bonds.....	30,000 00
Milwaukee City Bonds.....	2,800 00
Milwaukee School Bonds.....	119,000 00
Oshkosh City Bonds.....	60,000 00
Oconomowoc City Bonds.....	50,000 00
Stoughton City Bonds.....	9,500 00
Superior City Bonds.....	12,000 00
Tomahawk City Bonds.....	250,000 00
Wausau City Bonds.....	12,000 00
West Bend City Bonds.....	30,000 00
Loan to Brown County.....	10,000 00
Loan to Chippewa County.....	47,850 00
Loan to Oneida County.....	35,368 40
Loan to Trempealeau County.....	20,000 00
Loan to City of Chippewa Falls.....	74,000 00
Loan to City of Green Bay.....	9,000 00
Loan to City of Jefferson.....	35,000 00
Loan to City of Menasha.....	10,000 00
Loan to City of New London.....	12,000 00
Loan to City of Oconto.....	5,000 00
Loan to City of Phillips.....	24,500 00
Loan to City of Rice Lake.....	3,733 33
Loan to City of Waupaca.....	5,500 00
Loan to Town of Knight.....	12,000 00
Loan to Town of Maine.....	3,500 00
Loan to Town of Waldwick.....	550 00
Loan to Board of Education, Washburn.....	3,400 00
Loan to Board of Education, Florence.....	10,000 00
Loan to Board of Education, Madison.....	7,000 00
Loan to Board of Education, Sugar Camp.....	18,000 00
Loan to State Historical Library Building Association.....	800 00
Total.....	\$3,331,418 46

UNIVERSITY FUND.

Due on Certificates of Sale.....	\$4,515 00
Due on Individual Loans.....	350 00
Certificates of Indebtedness.....	111,000 00
Eau Claire County Bonds.....	10,000 00
Greenwood City Bonds.....	2,000 00
Manitowoc County Bonds.....	4,000 00
De Pere City Bonds.....	8,000 00
Platteville City Bonds.....	2,000 00
Loan to Board of Education, City of Ripon.....	1,250 00
Loan to Winnebago County.....	4,000 00
Loan to City of Sturgeon Bay.....	11,400 00

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*The Productive Trust Funds.*


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Loan to City of Antigo.....	\$15,000 00
Loan to City of Menomonie.....	8,000 00
Loan to City of Rhinelander.....	5,700 00
Loan to City of Gillette.....	900 00
Loan to City of Hixon.....	2,500 00
Loan to City of Saxon.....	2,000 00
Loan to City of Underhill.....	525 00
Loan to Board of School, Directors Newbold.....	2,400 00
Loan to Village of Thorp.....	1,000 00
Total.....	\$196,540 00

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 AGRICULTURAL COLLEGE FUND.
 

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Due on Certificates of Sales.....	\$27,921 00
Certificates of Indebtedness.....	60,600 00
Eau Claire County Bonds.....	10,000 00
Eau Claire Bridge Bonds.....	15,000 00
Black River Falls City Bonds.....	9,000 00
Milwaukee City Bonds.....	20,000 00
Tomahawk City Bonds.....	3,500 00
Loan to Forest County.....	1,800 00
Loan to Iron County.....	10,200 00
Loan to City of Antigo.....	5,600 00
Loan to City of New Richmond.....	21,400 00
Loan to City of Waupaca.....	1,000 00
Loan to Town of Bayfield.....	4,000 00
Loan to Town of Bovina.....	2,000 00
Loan to Town of Crandon.....	1,200 00
Loan to Town of Day.....	233 34
Loan to Town of Harrison.....	550 00
Loan to Town of Grantsburg.....	600 00
Loan to Town of Oconto Falls.....	3,200 00
Loan to Town of Sumner.....	5,025 67
Loan to Town of Weir.....	900 00
Loan to Village of Osseo.....	1,974 33
Loan to Board of Education, City of New London.....	11,000 00
Loan to Board of Education, City and Town of Ripon.....	3,500 00
Loan to Board of Education, City Sturgeon Bay.....	2,000 00
Loan to Board of Education, Town of Crandon.....	5,000 00
Total.....	\$227,204 34

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 NORMAL SCHOOL FUND.
 

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Due on Certificates of Sale.....	\$4,075 00
Due on School District Loans.....	5,814 30
Due on Individual Loans.....	3,250 00
Certificates of Indebtedness.....	515,700 00
Ashland County Bonds.....	45,000 00
Vernon County Bonds.....	23,000 00
Ashland City Bonds.....	22,000 00
Antigo City Bonds.....	18,000 00
Chippewa Falls City Bonds.....	5,000 00
Columbus city hall bonds.....	11,000 00
Beaver Dam City Bonds.....	10,000 00
Durand City Bonds.....	3,000 00
Edgerton City Bonds.....	8,000 00
Eau Claire City Bonds.....	10,000 00
Glenwood Town Bonds.....	9,000 00
Hudson City Bonds.....	34,000 00
La Crosse City Bonds.....	10,000 00
Madison City Bonds.....	25,000 00
Milwaukee City Bonds.....	107,000 00
Oshkosh City Bonds.....	14,000 00
Plymouth City School Bonds.....	8,000 00
Portage County Bonds.....	24,000 00
Manitowoc County Bonds.....	70,000 00
Richland Center Water Bonds.....	2,000 00
Loan to Dunn County.....	30,000 00
Loan to Door County.....	57,000 00



*The Productive Trust Funds.*

Loan to Eau Claire County .....	\$33,333 28
Loan to Jackson County .....	12,000 00
Loan to Sawyer County .....	45,000 00
Loan to Washburn county .....	40,750 00
Loan to Chippewa County .....	12,526 32
Loan to Vilas County .....	35,000 00
Loan to Winnebago County .....	44,000 00
Loan to Board of Education, Madison .....	35,000 00
Loan to Board of Education, Grand Rapids .....	5,700 00
Loan to Town of Remington .....	3,000 00
Loan to Town of Pelican .....	2,520 00
Loan to Village of Bloomer .....	3,000 00
Loan to Village of Hammond .....	996 00
Loan to Village of Whitefish Bay .....	3,600 00
Loan to City of Cumberland .....	3,540 00
Loan to City of Clintonville .....	2,800 00
Loan to City of Fond du Lac .....	16,000 00
Loan to City of Kewaunee .....	19,000 00
Loan to City of Menomonie .....	42,000 00
Loan to City of Mineral Point .....	7,000 00
Loan to City of Madison .....	5,000 00
Loan to City of New London .....	11,000 00
Loan to City of Prairie du Chien .....	10,000 00
Loan to City of Rhinelander .....	1,000 00
Loan to City of Phillips .....	4,686 66
Loan to City of Shawano .....	1,920 00
Loan to City of Waupaca .....	5,500 00
Loan to Town of Bayfield .....	3,000 00
Loan to Town of Cleveland .....	665 00
Loan to Town of Finley .....	1,500 00
Loan to Town of Florence .....	3,500 00
Loan to Town of Mosinee .....	300 00
Loan to Town of Minocqua .....	7,500 00
Loan to Town of Richmond .....	4,000 00
Loan to Town of Schoepke .....	1,350 00
Loan to Town of Seneca .....	1,200 00
Loan to Town of Spooner .....	3,100 00
Loan to Town of West Kewaunee .....	10,000 00
Loan to Town of Wood .....	2,000 00
Loan to Town of Withee .....	400 00
Loan to Board of Education, Town of Minocqua .....	3,500 00
Loan to Eau Claire Light Guard Armory .....	10,000 00
Loan to Light Horse Squadron .....	30,000 00
Loan to State Historical Library Building Association .....	175,000 00
Loan to Board of Normal School Regents .....	40,000 00
Total .....	\$1,776,706 56

DRAINAGE FUND.

Due on Certificates of Sale .....	\$583 00
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*Trespass Penalties.*


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The following table shows the amount of monies received and collected in the different counties and credited to the different funds from trespass on vacant and contracted State lands. All expenses incurred in looking up and a survey of such lands was collected of the trespassers and turned into the general fund. Monies received from sales of material and stumpage has been turned into the treasury and placed to the credit of the funds entitled thereto:

*Trespass Moneys collected for the fiscal term ending Sept. 30, 1900.*

Counties.	Fiscal year 1898 and 1899.	Fiscal year 1899 and 1900.	Totals.
<b>GENERAL FUND:</b>			
Vilas.....	\$15 00		\$15 00
Iron.....		\$25 50	25 50
Oneida.....		105 22	105 22
Price.....		162 30	162 30
Vilas.....		1,155 10	1,155 10
Total.....	\$15 00	\$1,448 12	\$1,463 12
<b>SCHOOL FUND:</b>			
Polk.....		\$150 00	\$150 00
<b>NORMAL SCHOOL FUND:</b>			
Burnett.....		\$40 00	\$40 00
Langlade.....		20 00	20 00
Lincoln.....		29 30	29 30
Price.....		518 07	518 07
Total.....		\$607 37	\$607 37
<b>DRAINAGE FUND:</b>			
Price.....	\$100 00		\$100 00
Burnett.....		\$20 00	20 00
Vilas.....		109 96	109 96
Total.....	\$100 00	\$129 96	\$229 96
<b>AGRICULTURAL COLLEGE FUND:</b>			
Polk.....		\$15 00	\$15 00

*Drainage Fund.*

*Statement of Drainage Moneys received in the several counties for the year ending September 30, 1899, and the sources from whence derived.*

Counties.	Amount of sales.	Total dues paid.	Amount of interest paid	Total due counties.
Adams .....	\$50 00			\$50 00
Ashland .....	50 00			50 00
Barron .....	170 00			170 00
Bayfield .....	460 00			460 00
Buffalo .....	417 30		\$3 43	417 73
Burnett .....	1,542 52			1,542 52
Chippewa .....	120 00			120 00
Dane .....			30 10	30 10
Dodge .....	54 58			54 58
Douglas .....	357 76			357 76
Florence .....	794 76			794 76
Forest .....	1,267 73			1,267 73
Iron .....	530 00			530 00
Juneau .....	50 00			50 00
La Crosse .....	238 65			238 65
Langlade .....	3,356 96			3,356 96
Lincoln .....	1,214 20			1,214 20
Manitowoc .....	30 00	\$36 00	20	66 20
Marathon .....	120 00			120 00
Marquette .....		45 00	15 09	60 09
Monroe .....	63 59			63 59
Oconto .....	100 15			100 15
Oneida .....	1,317 82			1,317 82
Polk .....	100 00			100 00
Portage .....	1,165 48			1,165 48
Price .....	300 00			300 00
Shawano .....	360 00			360 00
Vilas .....	232 00			232 00
Washburn .....	250 00			250 00
Wapaca .....	74 72		3 15	77 87
Winnebago .....			20 30	20 30
Total.....	\$14,785 20	\$81 00	\$72 27	\$14,938 47

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*Drainage Fund.*


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*Statement of Drainage Moneys received in the several counties for the year ending Sept. 30, 1900, and the sources from whence derived.*

Counties.	Amount of dues.	Amount of interest	Total amount due counties.
Buffalo.....		\$3 43	\$ 43
Dane.....		53 27	53 27
Marquette.....	\$108 00	12 53	120 53
Waushara.....		3 15	3 15
Waupaca.....	115 00	70	115 70
Winnebago.....		20 30	20 30
<b>Total.....</b>	<b>\$223 00</b>	<b>\$93 38</b>	<b>\$316 38</b>

*Drainage Fund Apportionment.*

*Apportionment of Drainage Moneys in accordance with section 251a, Wisconsin Statutes, 1898, showing the amount due the several counties for the year ending Sept. 30, 1899.*

Counties.	No. of acres selected.	Amount due counties.	Counties.	No. of acres selected.	Amount due counties.
Adams .....	1,707.23	\$61 41	Lincoln .....	121.38	\$4 37
Ashland .....	181.24	6 52	Manitowoc .....	1,825.91	65 73
Barron .....	160.00	5 76	Marathon .....	1,679.71	60 42
Bayfield .....	67.70	2 44	Marquette .....	1,642.32	59 12
Brown .....	720.00	25 92	Marinette .....	1,583.37	57 00
Buffalo .....	3,108.26	111 74	Monroe .....	1,950.89	70 23
Burnett .....	360.00	12 96	Oconto .....	2,069.70	74 50
Calumet .....	177.57	6 39	Outagamie .....	1,626.11	58 49
Chippewa .....	1,424.76	51 24	Pepin .....	1,775.20	63 75
Clark .....	1,280.00	46 08	Polk .....	360.18	12 97
Columbia .....	2,248.70	80 90	Portage .....	1,067.60	38 43
Crawford .....	1,620.54	58 34	Racine .....	40.00	1 44
Dane .....	1,796.66	64 63	Richland .....	1,261.29	45 40
Dodge .....	2,133.87	76 82	Rock .....	756.22	27 22
Door .....	1,133.73	40 81	Sauk .....	1,879.26	67 60
Douglas .....	339.96	12 24	Shawano .....	1,242.10	44 61
Dunn .....	6,145.66	221 19	Sheboygan .....	359.99	12 90
Eau Claire .....	1,282.02	46 15	Trempealeau .....	861.56	31 01
Fond du Lac .....	760.00	27 36	Vernon .....	1,534.22	55 23
Grant .....	37.30	1 34	Walworth .....	1,315.08	47 34
Green .....	360.00	12 96	Washington .....	680.88	24 51
Green Lake .....	453.75	16 33	Waukesha .....	80.00	2 83
Jackson .....	1,050.79	37 82	Waupaca .....	4,722.50	170 01
Jefferson .....	1,360.00	48 96	Waushara .....	1,490.70	53 61
Juneau .....	1,247.33	44 90	Winnebago .....	809.33	29 12
Kenosha .....	80.00	2 88	Wood .....	1,730.83	62 30
Kewaunee .....	515.02	18 54			
La Crosse .....	4,035.42	145 27	Total .....	70,250.84	\$2,528 04

Statement of Lands held by the State, September 30, 1900.

Counties.	16th section school	University.	500,000 acre tract.	Selected Normal school.	Indemnity school.	Agricultural college.	Marathon county.	Indemnity swamp.	Forfeited mortgag'd.	Escheated school.	Swamp land normal & drainage.	Total number acres.
Adams.....	640.00				80.00				169.10		804.57	1,693.67
Ashland.....	121.90				40.00						5,602.61	5,764.51
Barron.....											329.46	329.46
Bayfield.....	1,200.00				40.00						5,433.37	6,673.37
Buffalo.....	120.00				80.00						419.72	619.72
Burnett.....	5,828.24				800.00						24,419.43	31,047.67
Calumet.....											80.00	80.00
Chippewa.....	173.70							2,751.79		120.00	4,989.59	8,035.08
Clark.....	40.00	40.00			40.00						1,145.12	1,265.12
Columbia.....	.36								47.15		40.92	88.43
Crawford.....	66.43										1,502.33	1,568.76
Dane.....											81.44	81.44
Dodge.....											140.56	140.56
Door.....	220.00										901.73	1,121.73
Douglas.....	2,130.00										7,310.23	9,460.23
Dunn.....	640.00										592.65	1,232.65
Eau Claire.....	600.00	329.42									453.37	1,382.79
Florence.....					40.00						3,883.16	3,923.16
Fond du Lac.....											40.00	40.00
Forest.....	1,404.50				40.00			1,200.51			33,503.29	36,148.30
Grant.....											448.63	448.63
Green Lake.....											81.87	81.87
Iron.....	1,400.00				203.00						26,936.49	28,539.49
Jackson.....	1,527.73		399.27						160.00		3,382.10	5,469.10
Jefferson.....	55.80										98.75	154.55
Juneau.....	394.50								111.00		425.79	931.29
Kewaunee.....											40.00	40.00
La Crosse.....											243.61	243.61
Langlade.....	240.00										6,912.34	7,152.34
Lincoln.....	541.85				40.00			5,391.24			10,749.90	16,722.99
Manitowoc.....											40.00	40.00
Marathon.....	80.00						326.93				2,172.19	2,579.12
Marinette.....	720.00							10,178.03		440.00	3,505.91	14,843.94
Marquette.....	80.00								100.00		174.68	354.68
Mounre.....	1,160.00								40.00		691.95	1,891.95
Oconto.....	280.00			1,674.16				160.00	40.00		13,828.12	15,982.28
Oneida.....	1,154.92				360.00			489.75			36,021.92	38,026.59
Outagamie.....											2,085.13	2,085.13

State Lands.

Pepin.....	80.00	36.90									182.40	299.80
Pierce.....											129.98	129.98
Pol.....	1,080.00				40.00	40.00					1,993.12	3,153.12
Portage.....	40.00	152.32									1,171.28	1,383.34
Price.....	761.78								19.74		31,014.03	31,775.81
Richland.....											45.58	45.58
Sawyer.....	640.00										9,651.76	15,140.48
Shawano.....	40.00		80.00					4,848.72			7,905.82	8,025.82
Sheboygan.....											40.00	40.00
Taylor.....	120.00										6,389.11	8,949.59
Trempealeau.....						40.00					258.11	258.11
Vernon.....	80.00							2,400.48			891.30	971.30
Vilas.....	2,978.10				120.00						18,947.26	22,045.36
Washburn.....	2,568.71	27.25									11,874.35	14,470.31
Waupaca.....											729.20	729.20
Waushara.....	160.00										40.00	200.00
Wood.....	120.00										657.98	777.98
Total...	29,478.52	585.89	479.27	1,674.16	1,923.00	80.00	326.93	27,420.52	686.99	560.00	291,464.21	354,679.49

State Lands.

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Under the provisions of Chapter 345 of the laws of 1899, lands belonging to the state, except in the state park, in the counties of Iron and Vilas were withdrawn from market until they will be examined and appraised. As the state has a claim upon the United States for a large quantity of land, under the Swamp Land Grant approved September 28th, 1850, for which the state has received no patents, and as an effort is being made by congressional enactment to adjust this claim, the Commissioners deemed it proper to defer the examination and appraisal of the lands withdrawn from market by chapter 345 of the laws of 1899 until such claim will be allowed or finally rejected. If this claim will be allowed, the expense will be less to have all the state lands examined at one time than to have examinations and appraisals made at different times. As all lands in the state have considerably advanced in value during the past two years, no loss has been sustained by this delay, which was contemplated in the act withdrawing the lands from market.

The office of the commissioners of the public lands, more commonly known as the State Land Office, has existed as a separate department of the state government for more than fifty years. In this office is contained the original plats and field notes of the government surveys of all the lands in the state, and the records showing the origin of the title and first conveyance to more than twelve millions of acres of land. The Commissioners as the constitutional trustees of the trust funds, amounting to some millions of dollars, and being charged with their safe investment, feel that their trust is one of such magnitude and importance that the department in which their business is transacted should be kept separate from any other department of the state government and that they should be furnished such clerical assistance as may be necessary for the proper dispatch of business. There is still unsold, belonging to the state, more than 354,000 acres of land, but for many years after the last acre will be sold, the office will still continue as a bureau of information, and its records will be consulted just as are records in the office of the Register of Deeds in the different counties of the state.

The Executive, in recommending legislation affecting the land office never intended that an act would be passed making



such a radical change as was made by chapter 258 of the laws of 1899. Entertaining these views and with the experience of the past two years to guide us in forming a correct judgment, we believe that the enactment of this law, which abolishes the land office as a separate department and places its supervision under the direction of the Secretary of State will not subserve any useful purpose and we therefore respectfully recommend its repeal.

Respectfully submitted,

WM. H. FROELICH,  
Secretary of State,

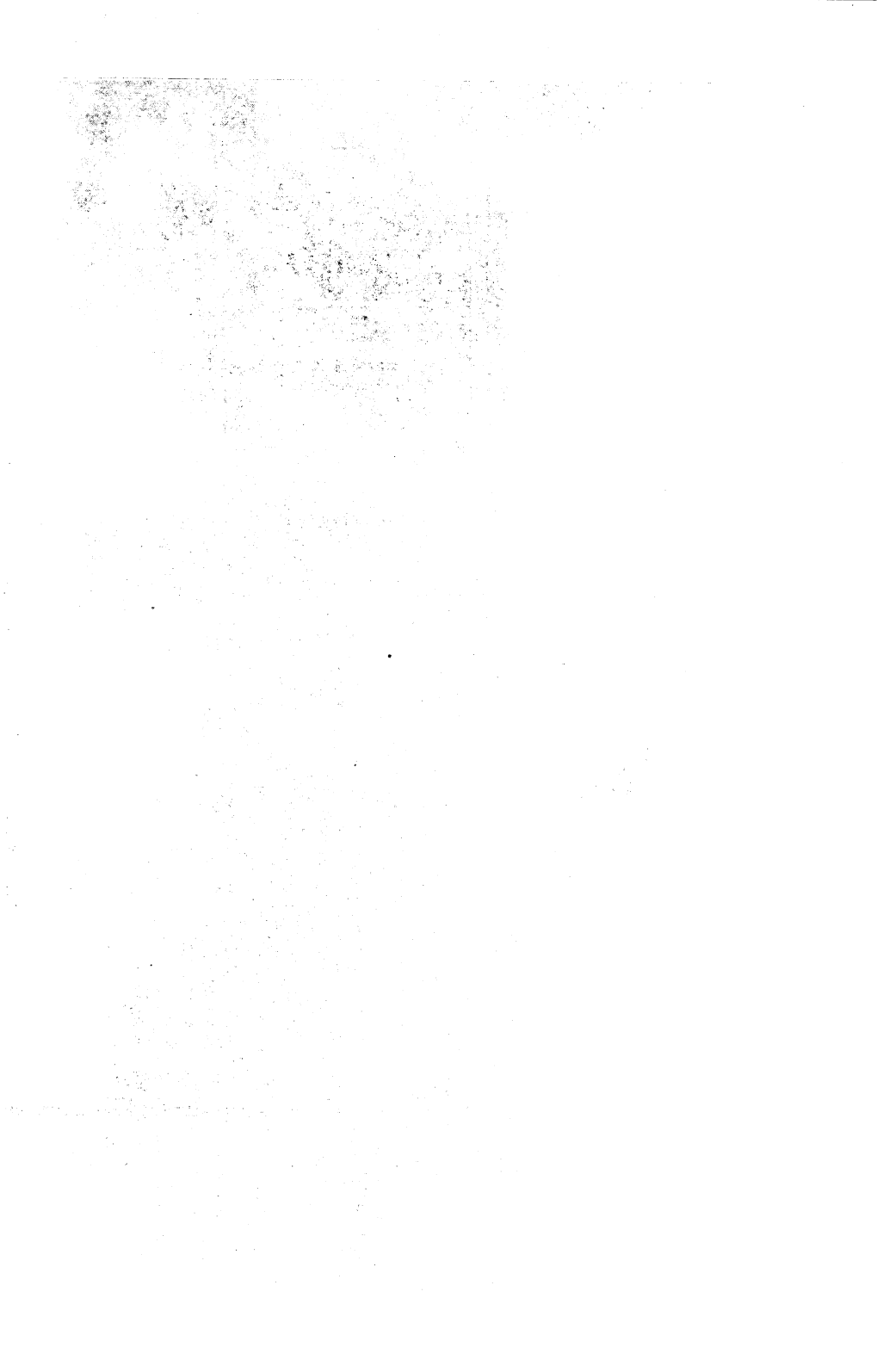
J. O. DAVIDSON,  
State Treasurer,

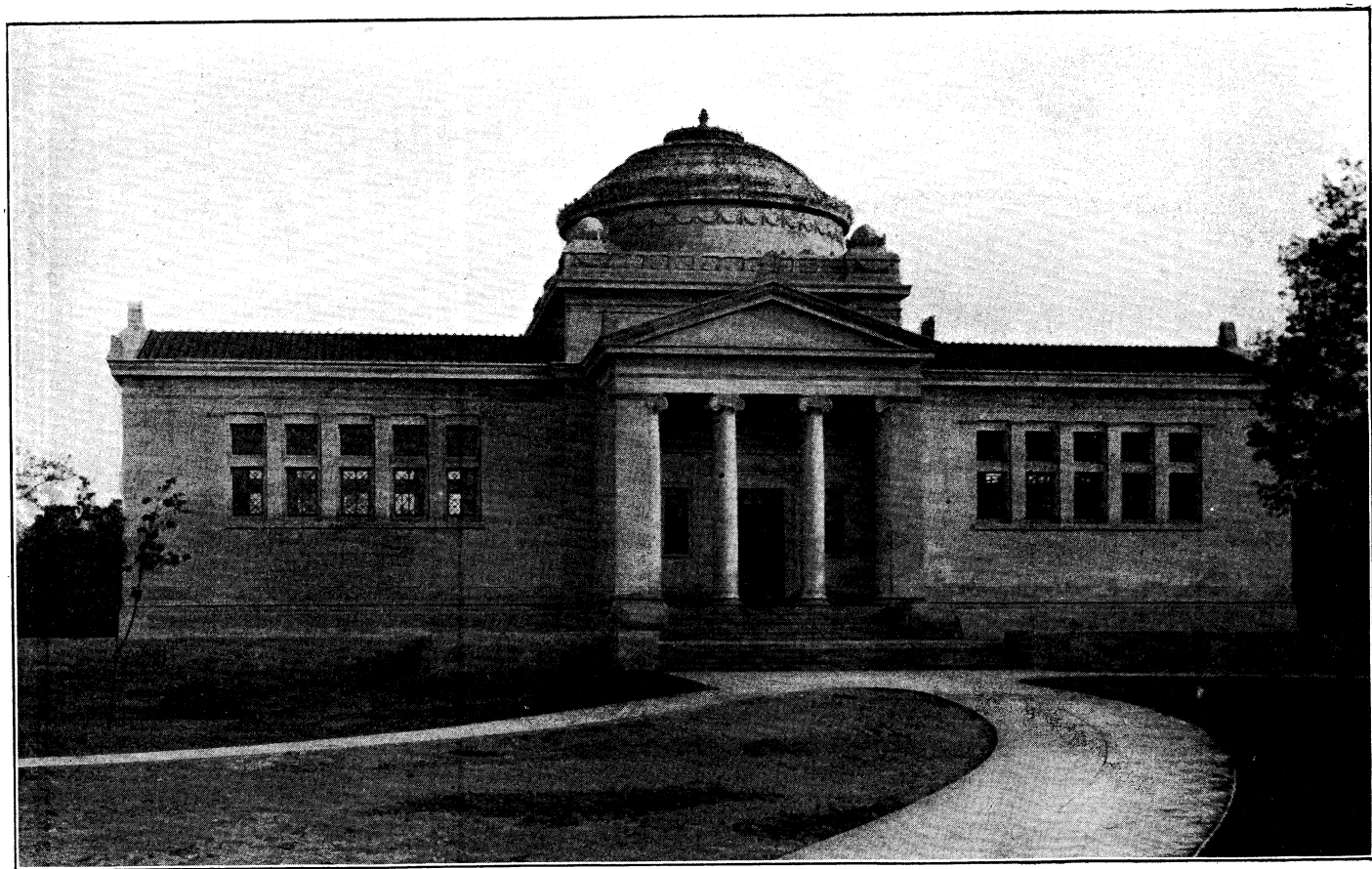
E. R. HICKS,  
Attorney General,

*Commissioners of the Public Lands.*

C. E. MORLEY,  
*Chief Clerk.*







Gilbert M. Simmons' Memorial Library, Kenosha, Wis.

THIRD BIENNIAL REPORT

OF THE

FREE LIBRARY COMMISSION

OF WISCONSIN

1899-1900

*Published by Authority of Law*

MADISON  
DEMOCRAT PRINTING COMPANY, STATE PRINTER  
1900

# WISCONSIN FREE LIBRARY COMMISSION

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OFFICE: MADISON, WIS.

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## EX-OFFICIO:

CHARLES KENDALL ADAMS,  
President of the University of Wisconsin,  
MADISON, WIS.

LORENZO D. HARVEY,  
State Superintendent,  
MADISON, WIS.

REUBEN GOLD THWAITES,  
Secretary State Historical Society,  
MADISON, WIS.

## APPOINTED BY THE GOVERNOR:

J. H. STOUT,  
MENOMONIE, WIS.

MRS. CHAS. S. MORRIS,  
BERLIN, WIS.

## OFFICERS:

J. H. STOUT, Chairman,  
MENOMONIE, WIS.

FRANK A. HUTCHINS, Secretary,  
MADISON, WIS.

MISS L. E. STEARNS, Organizer,  
MILWAUKEE, WIS.

MISS CORNELIA MARVIN, Instructor,  
MADISON, WIS.

## LETTER OF TRANSMITTAL.

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MADISON, September 31, 1900.

TO HON. EDWARD SCOFIELD,

*Governor:*

SIR — I have the honor to transmit herewith the Third Biennial Report (1899-1900) of the Wisconsin Free Library Commission, in accordance with the provisions of section 383*a*, of the Wisconsin Statutes of 1898.

Very respectfully,

Jas. H. Stout,

*Chairman.*

## CONTENTS.

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	Page
<b>TWO YEARS' PROGRESS</b> .....	1
Legislation—New libraries—New buildings—Gifts and bequests— Organizing libraries—Traveling libraries—Periodicals for travel- ing libraries—Clearing house for magazines—Summer school for library training—Library privileges for farmers—News from some of the libraries.	
Proceedings of the Commission .....	31
Special Meeting, May 27, 1899—Annual Meeting, June 13, 1899— Adjourned Meeting, June 18, 1899—Annual Meeting, May 11, 1900.	
Expenditures of the Commission .....	33

### APPENDIX.

#### *Statistics of Wisconsin Libraries—1900.*

Free Libraries Supported by Municipal Taxation.....	40
Free Libraries Supported by Individuals.....	42
Free Libraries Supported from School Funds.....	42
Free Association Libraries.....	43
Subscription Libraries.....	43
Libraries Supported by the State.....	44
College and Academy Libraries.....	45
Proprietary Library.....	45

#### *Illustrations and Maps.*

Gilbert M. Simmons Memorial Library.....	Frontispiece
Harris-Sawyer Library.....	6
Lecture Room E. D. Smith Library.....	12
L. D. Fargo Library.....	16
Views in Stevens Point, North Greenfield and Waupaca Libraries....	24
Map of Public Libraries in Wisconsin.....	30
Map of Traveling Libraries in Wisconsin.....	30



# TWO YEARS' PROGRESS.

## LEGISLATION.

The Second Biennial Report of the Wisconsin Free Library Commission was prepared in September, 1898, and it is the purpose of this report to show the progress made from that date to September, 1900.

In April 1899, the legislature passed a law authorizing the Commission to conduct a "Summer School for Library Training in connection with the Summer Session of the University of Wisconsin, and to hold librarians' institutes in various parts of the state in order to train librarians of public, school and traveling libraries to make wiser and more effective use of the libraries in their charge." The Commission was authorized "to accept, arrange and circulate books, traveling libraries and pictures to be loaned to public libraries, traveling library associations, study clubs, charitable and penal institutions, and individuals, under such conditions and restrictions as shall make them of the greatest good to the greatest number."

To aid it in its enlarged duties the legislature gave the Commission an additional appropriation of \$3,500 annually.

In June, 1899, the Commission decided to employ another officer, to be known as Library Instructor and Director of the Summer School of Library Training, and Miss Cornelia Marvin, formerly librarian of Scoville Institute, Oak Park, Ill., was chosen to fill the position. In July of that year she assumed her new duties.

Although the increased appropriation has been available but little more than a year the work of the Commission has shown a notable and gratifying broadening.

## NEW LIBRARIES.

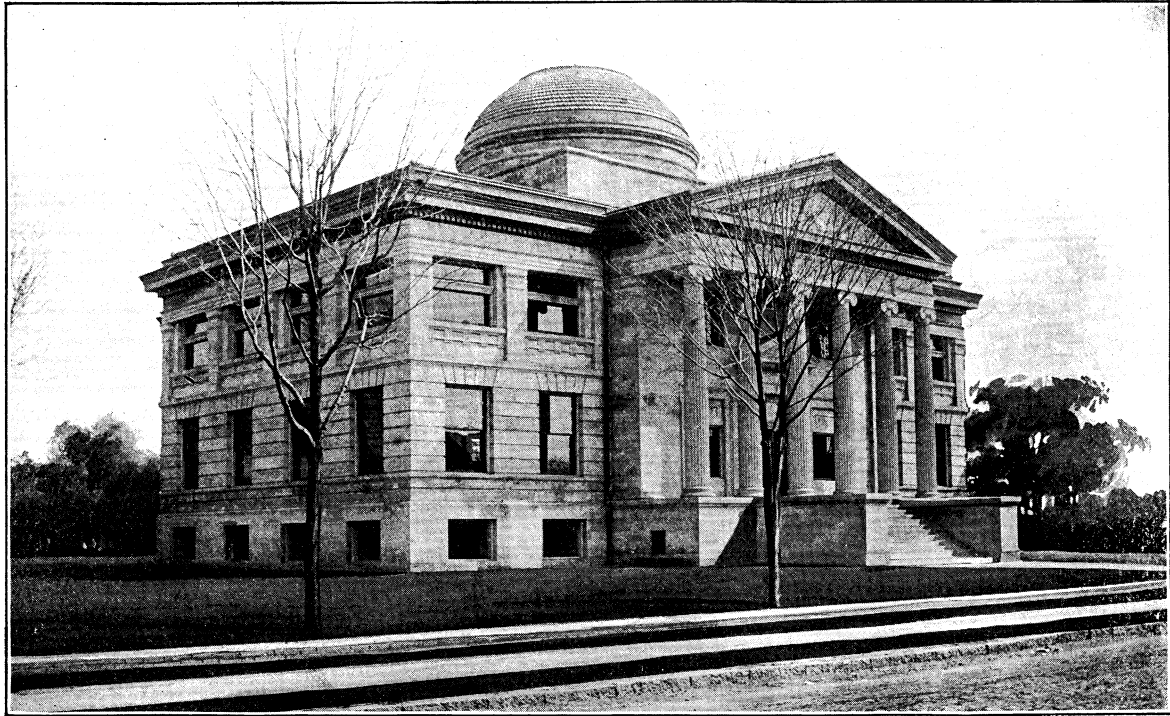
Free public libraries supported by municipal taxation have been established in Algoma, Arcadia, Burlington, Colby, Darlington, Dodgeville, Elkhorn, Evansville, Fairchild, Hillsboro, Horicon, Kaukauna, Lake Mills, Manitowoc, Mazomanie, New Richmond, North Freedom, North Milwaukee, Oakfield, Reedsburg, Shawano, South Milwaukee, Stanley, Waupaca and Whitehall. Libraries formerly owned by as-

sociations have been accepted and are now supported as free public libraries in Kenosha, Lake Geneva, New London, Waukesha and White-water. Free libraries owned and supported by associations have been established in Colfax, Downing, Glenwood, Marshfield, Plover, Prairie du Sac, Prescott and Plymouth. The City Library at Menomonie has been merged in the Mabel Tainter Memorial Library and the annual appropriation formerly made to it by the common council now goes to support the latter. The consolidation of the cities of Grand Rapids and Centralia has given the residents of the latter place full library privileges.

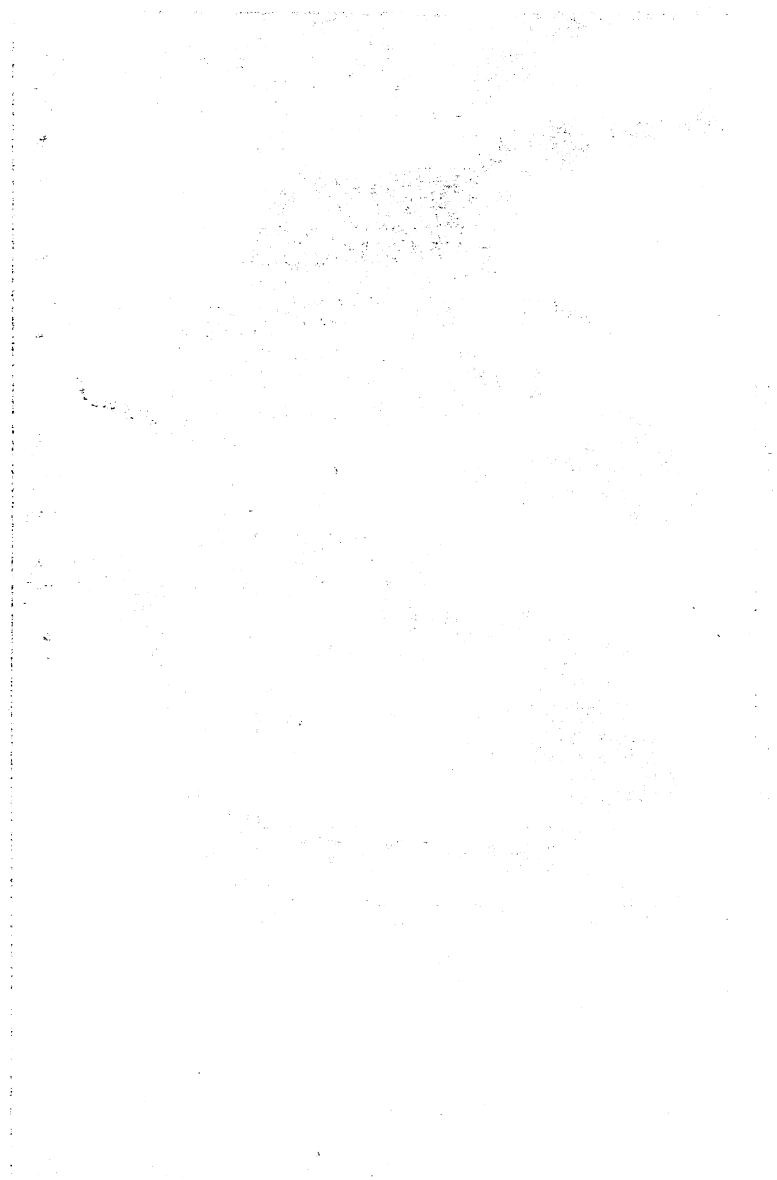
The total number of free public libraries supported by municipal taxation and controlled by municipal boards has increased from forty-seven to seventy-six, or sixty per cent. There are also twenty-three public libraries supported by associations or individuals which are free to the citizens of the communities in which they are established.

#### NEW BUILDINGS.

The work of providing suitable homes for our libraries, which made such rapid progress in the two years covered by our preceding report, still continues. Mr. Z. G. Simmons, of Kenosha, has built for the library of that city a beautiful building at a cost, it is estimated, of more than \$150,000. The building is a memorial for a son, Gilbert M. Simmons. The city of Oshkosh has recently completed a handsome library building which, with the site, cost about \$78,000. L. D. Fargo, of Lake Mills, has given to that village \$6,000 which is being used in the construction of a small but very attractive library building. Other citizens have purchased a site at a cost of \$1,700. Alex. Berger, of Lincoln, Neb., has recently given to the people of Burlington, his native town, \$5,000 to be used in erecting a library building which is to be a memorial to his parents. In 1899 the citizens of Whitehall completed a home for their small library at a cost of \$600. The estate of the late Mr. D. R. Moon, of Eau Claire, is erecting a library building in the village of Stanley which is to cost about \$8,000. The estate will also equip the building at a cost of about \$4,000. The library will be known as the D. R. Moon Memorial Library. Whitewater and Antigo have recently erected city hall buildings with commodious and attractive rooms prepared especially for the use of their public libraries, and Stoughton, Portage and Marshfield are now building similar structures with adequate rooms for libraries. In Elkhorn, Mr. E. H. Sprague is building an office building in which there is a large room designed as a home for the public library. The city holds a lease of this room, on most favorable terms, for a period of fifty years.



Harris-Sawyer Public Library, Oshkosh, Wis.



Mr. Isaac Stephenson, of Marinette, has announced his intention of giving to that city a library building to cost not less than \$50,000 and a valuable lot, centrally located, as a site.

#### GIFTS AND BEQUESTS.

In addition to the gifts for library buildings there have been numerous gifts and bequests to libraries in all parts of the state. We shall record here only the more notable. In 1887 Mrs. E. E. Vaughn built a substantial business block in Ashland whose rentals were devoted to the maintenance of a free library which it housed. The property which is thought to be worth at least \$45,000 has been formally given to a board of library trustees for the use of the city. Captain Andrew Tainter, who in 1890 erected the Mabel Tainter Memorial building in Menomoneie, died in October, 1899, and bequeathed \$35,000 to care for the building and an additional \$30,000 as an endowment for the free library which it contains. Z. G. Simmons, of Kenosha, has given \$20,000 for the purchase of books for the library to which he gave a building. The citizens of Manitowoc have given their new library \$4,500 for the purchase of books and the citizens of Evansville have given \$1,500 for a similar purpose. The late William Bedient, of the town of Algoma, bequeathed \$3,500 to the public library at Oshkosh, to be paid after the death of his widow. The same library has also received a gift of three paintings from Leander Choate which are valued at \$3,000.

#### ORGANIZING LIBRARIES.

Early in 1899 the officers of the Commission decided that it was more important for the present to improve many of the old libraries and to give a large measure of help to a few new libraries, than to attempt to establish a larger number of new libraries. It was evident that in a few years nearly all the cities and villages of Wisconsin will have free libraries and it is important to have model libraries in all parts of the state as object lessons for neighboring communities. It is often difficult to make people who have seen only old-fashioned libraries understand the possibilities of modern library work. A visit to a library like those at Appleton, Eau Claire, Mosinee or Whitewater is worth more to give good ideals of library work than a course of lectures upon library methods. We need, at present, to emphasize quality rather than quantity.

For this reason the officers of the Commission have given more time than formerly to assisting the boards and librarians of the new libraries and to aiding in the reorganization of the older ones. As a

result many old libraries have been put into much better condition for work and the new libraries have been well organized and their librarians and boards trained to their new duties.

Something of the work accomplished is shown in the detailed reports from the libraries. Those at Superior, Janesville and White-water have been largely reorganized with the aid of officers of the Commission, while the work of thorough reorganization has been started in Grand Rapids, Oconomowoc, Neillsville, Black River Falls, Rice Lake, Cumberland and Edgerton. At Oshkosh and Ashland great and needed improvements have been made by the local boards. In Manitowoc, Waupaca, Oakfield, Whitehall, Arcadia and Evansville new libraries have been founded as a result of such united efforts on the part of business men, women's clubs, teachers and school children that they have become the centers of public thought and enterprise. In many other towns good beginnings have been made and the standard of library ideals has been noticeably elevated.

Where new libraries have been organized officers of the Commission have made occasional visits to impress upon the boards the importance of trained service in organizing, of liberal rules in governing, of selecting wholesome and popular books with a due proportion for children, of giving access to shelves, of giving full privileges to neighboring farmers and of the need of enlisting the support and sympathy of all classes of citizens and of giving them opportunities to help. In many little details the advice of the Commission is sought and given with pleasure. When the books of a new library are ready for classification, or an old library is to be thoroughly reorganized, an officer of the Commission visits it and commences the work with the assistance of the librarian, members of the board and of women's clubs and teachers. The object of the Commission is not to do the work for them, but to direct their work so that they may do it intelligently and understand the need of business methods. The women and teachers are shown how to prepare bulletins and pictures for the library and the schools. School children are trained to help the librarian by keeping the shelves in order. In nearly every town we have found many people who were eager to work for the public and the library has given them a welcome opportunity. Under the stimulus given by the Commission's help these people have learned the pleasure of working together for the public service. In library work, class, denominational and social distinctions are forgotten or ignored and many towns are getting most important lessons in united work from the general interest in founding or improving their libraries.

## TRAVELING LIBRARIES.

So much emphasis has been placed upon the work of improving the old libraries, making good libraries of the new ones and improving the character of the service in all the libraries, that the Commission has not given as much attention to traveling libraries in the past two years as in the preceding. There has been a continued and growing interest in the work, however, and we are confident that it could be extended widely with moderate effort. As is known by our friends the traveling libraries of Wisconsin are purchased entirely by gifts by private individuals and associations.

In August, 1898, there were 186 traveling libraries in Wisconsin, of which 35 were entirely under the control of the Commission. In August, 1900, there were 238 such libraries of which 54 were wholly in charge of the Commission.

The Commission has aided in the work of nearly all the traveling libraries of the state; in selecting the books for them, in arranging the plans for their control, in finding places for them and in training the local librarians. It has been the purpose of the Commission, however, to leave the burden of the later work of conducting the county systems of traveling libraries upon the people who establish them, hoping that in the routine of work the people who give the libraries and those who receive them may be trained to delight in a fuller service for the public.

The most prosperous and effective of the county systems recently established are those which have their headquarters in Merrill and Wausau. The former consists of ten libraries given by citizens of Merrill and sent out from the public library of that city to neighboring communities in Lincoln county. The Wausau system was organized by the Woman's club at Wausau, generous donors having fitted up fourteen boxes for the small towns and farming communities of Marathon county.

During the past two years the Commission has received a number of gifts of money and books for traveling libraries to be handled from its office. Hon. Levi Withee, of La Crosse, gave \$100 for the purchase of two village traveling libraries, J. M. and T. J. Pereles, of Milwaukee, have also given \$100 and Geo. Des Forges, of Milwaukee, has given \$50. D. E. Roberts, Gardner P. Stickney, the Milwaukee Branch of Collegiate Alumnae, the Milwaukee Journal, the students of the Milwaukee Normal School, all of Milwaukee, the Janesville History club, the New Century club and the Book club, of Madison, and the Study club, of Hudson, have each given books for a library. Four other libraries

have also been formed by the Commission from books given by a number of individuals. A reference library of twenty-five volumes has been made with money contributed by Joseph Dessert, of Mosinee. An excellent outline for study has been prepared by Mrs. C. S. Morris, of Berlin, to accompany this library. The traveling libraries now in charge of the Commission have made 76 complete trips and forty-five are now in the field to be returned in September. In a few cases it has not been convenient to keep the records of circulation, but our books show a recorded circulation during the past two years of 20,106. The average length of time that a library remains out from the office is seven months. The average circulation on each trip is 265. The average annual circulation from each library has been 456 or 9 per volume. As the libraries go only to the smaller villages and to farming communities these figures are very encouraging. The circulation averages by no means show the use made of the books as the local librarians agree that in the smaller communities most of the books which go out to the homes are read by from two to five persons each time they are drawn. The libraries are also the means of securing the reading of a great deal of excellent periodical literature.

A noteworthy fact connected with the circulation of these libraries has been the uniform good care taken of the books, and it seems safe to say that these libraries will remain intact and useful for six years, or more, of continuous work. During the past two years only nine books have been lost or destroyed while the libraries were in the field, and all but two of these were paid for. This statement needs one qualification—one village traveling library, contributed by J. D. Witter, was caught in the cyclone at New Richmond and not one book was left.

When a traveling library is returned to the office of the Commission the books are carefully examined and immediately repaired, if repairs are necessary. If the books have been well cared for a letter of thanks is sent to the local librarian and the patrons. If the books have been worn or soiled unduly a letter asking better care as a favor is immediately sent to the librarian to be read to the patrons. Thus far such letters have proved effective. If the patrons should, in any case, fail to heed such a request the library would be withdrawn.

#### PERIODICALS FOR TRAVELING LIBRARIES.

Early in 1897 the Commission commenced the work of collecting periodicals and distributing them to traveling library stations and needy communities where good people would keep them circulating in the homes of their neighbors. These periodicals were taken so eagerly and read with so much delight that the work has been gradually ex-



tended and during the past year the Commission has collected and distributed more than 16,000 copies of such magazines as the *Harper's, Century, Scribner's* and *McClure's* and more than 20,000 copies of such papers as the *Youth's Companion, Harper's Weekly, Ladies' Home Journal* and the *Gartenlaube*. The *Youth's Companions* of the later years are bound in durable volumes, with manila covers. Each volume contain six or seven numbers and the longer continued stories are kept complete. In many families these volumes start the first real love for reading and they are read with avidity by the parents as well as the children. The magazines, too, are enjoyed by many who had found no opportunity to read any but occasional old numbers of inferior publications, and the wonders of liquid air, of the X-rays, descriptions of campaigning and life in Cuba, the Philippines, China and South Africa, as well as stories of travel, exploration, invention and the articles of the better writers of fiction, delight thousands of families who had formerly scarcely known such enjoyment. Something of the value of this work is shown in a letter from an unselfish woman who has cared for a traveling library in a hamlet, in the forests of northern Wisconsin, which is thirteen miles from a railway station. She writes, "The books of the traveling library are constantly out and are doing a great deal of good. One family which had never had any books in the house except school books have taken eight books in the past two months, but in many families where the people work hard all day the magazines and picture papers are more liked than the books. The bound volumes of the *Youth's Companions* are taken by the teachers and read in the school, and by the boys and girls till they are worn out. I can't tell you how they like them and how much good they do."

#### MAGAZINE CLEARING HOUSE.

The Commission has steadily urged upon the librarians of the state the desirability of making sets of the most valuable periodicals by collecting in their own communities. Two years ago so many old magazines, which were of little interest to the farmers, were accumulating in our rooms that we commenced a system of exchanges with the public libraries. This work has proved to be very useful and has grown beyond our expectations. Since February 1, 1900, it has been systematized and more attention will be given to it in the future. In seven months during which full records have been kept we have sent to libraries, to help complete sets, 165 complete volumes and 699 single numbers. The single numbers are only sent when we can send all the numbers needed to complete partial volumes. It is safe to say, after an examination of our records, that during the past six months the Commission has aided

the public libraries of the state to complete for their shelves 510 volumes of such periodicals as the *Harper, Century* and *Forum*. With the aid of Poole's Index these volumes become of great service to the study clubs and high school societies in communities where the libraries are small. The direct help given by the Commission in this work can not be fully measured by the partial record of the magazines it has given, because the libraries have obtained 80 per cent., or more, of their volumes from gifts by their patrons, but it is the encouragement and counsel of the Commission, and the knowledge that they can exchange their duplicates for scarce and missing numbers that encourages them to undertake the work. The Commission has also been able to train librarians to collate the magazines and to get them bound more durably and attractively. It has now on hand about 8,000 magazines. 3,000 of these were published in the years from 1855 to 1880. It is making earnest appeals for contributions and hundreds of families are finding pleasure in contributing and collecting old and recent periodicals for its work.

#### LIBRARY PRIVILEGES FOR FARMERS.

The privileges of free public libraries are limited, in most cases, to the residents of the municipalities which support them. The families of farmers can rarely borrow books at the public library in the town where they get their mail and buy their supplies. In 1897 our legislature amended the state library law so as to allow town and county boards to make contracts with library boards to secure full privileges for their constituents. In 1899 the law was still further amended to allow school district boards similar authority. Notwithstanding the liberality of the law comparatively little progress has been made in extending library privileges to farmers, but the few experiments have been remarkably successful. The township of Lincoln, which adjoins the village of Whitehall in Trempealeau county, pays \$100 annually to the board of the village library. The town board of Arcadia, in the same county, pays \$25 annually to the library of the city of Arcadia for the benefit of the citizens of the township. In 1899 a small library was established in Mazomanie and its privileges were given without cost to the neighboring farmers. At their "town meeting" in March 1900 these farmers showed their appreciation of the courtesy by voting, without solicitation, a gift of \$25 to the village library. In a few other cases where no formal action has been taken books are loaned to farmers' families without cost, but such cases are exceptional and one of the most urgent needs in library extension is a campaign by librarians and library associations to help the farmers by giving them free access to existing village and city libraries.



Assembly Room, E. D. Smith Library, Menasha, Wis.



The Mabel Tainter Memorial Library in Dunn county, the Vaughn Library in Ashland county, the Gilbert M. Simmons Library in Kenosha county and the Hayward Library in Sawyer county are free to all the residents of their respective counties.

### PICTURE WORK.

Picture work in libraries has become so general that the Commission has, during the past year, devoted some attention to the subject. Seven bulletins have been issued giving directions in regard to the proper use of pictures, and their purchase and care. These bulletins have been widely used, and have been of service not only in Wisconsin but in the libraries of many other states.

The object of this work is not to decorate the libraries, but to stimulate interest in good books, to advertise, attract and illustrate. The *Bulletin* has given lists of birthdays and anniversaries occurring during the month, with suggestions for making them a feature in the library and calling attention to the best books relating to these particular subjects. Interest was also aroused in the celebration of Arbor and Bird Day, Memorial Day, Thanksgiving Day and Wisconsin Day.

The governor's proclamations for Arbor and Bird Day and Thanksgiving Day were sent to all libraries and made the centers of attractive exhibits. The poster and pictures for Wisconsin Day were also made into exhibits, at once decorative and educational. The efforts were made to arouse state patriotism.

Picture work is quite essential in the children's room in the library. The picture exhibit creates an interest and curiosity which the librarian is ready to satisfy by means of good books. The treasures of the library may be opened to the new reader by the means of judicious picture advertising. Texts may be illustrated by the picture collections, clubs and schools may draw upon it for material which shall make study more interesting and which is provided in no other place.

Picture work has a legitimate place in library administration but if it is undirected it may have small results and much time and material may be wasted. For this reason the Commission decided to publish lists of desirable cheap prints and to give suggestions for the care and use of the collections. Bulletins and posters have been sent out as samples, and good, permanent methods have been established in many libraries.

For some months in the latter part of 1899 Miss Mary E. Tanner, teacher of drawing in the Stevens Point Normal School, was employed by the Commission to devote all her time to arousing a more active interest in the use of pictures in the libraries and schools. Her work

was largely confined to the northern and central portions of the state and she gave herself to it with an enthusiasm and industry that won the sympathy and co-operation of the librarians and teachers of her field.

It seems to have been proved, by our efforts in this direction, that as our libraries become thoroughly organized and better educational institutions they will be able to make most effective and valuable use of pictures in many phases of their work with the schools and clubs.

#### LIBRARY ASSOCIATIONS.

The popular interest in libraries in Wisconsin is due in considerable measure to the work of voluntary associations of librarians, library trustees and others interested in the movement. The Wisconsin State Library Association was organized February 11, 1891, and is one of the oldest of the state associations. The first general missionary work for libraries in Wisconsin was done by this Association, and the enthusiasm which it aroused led to the establishment of the Free Library Commission. Since the organization of the Commission the character of the work done by the Association has changed somewhat, but its meetings are still inspiring and helpful and its members are devoted to its interests.

Its eighth conference was held in the new public library building in Milwaukee, February 22 and 23, 1899. Dr. E. A. Birge, of Madison, presided and Miss Agnes Van Valkenburgh, of Milwaukee, was secretary. The meetings were well attended. The most important business transacted was the passing of a resolution to co-operate with the state department of education in an effort to secure the better binding of the books purchased for libraries. The secretary was also requested to get reports from the libraries of the state as to the binding of books and their defects.

Mrs. Chas. S. Morris, of Berlin, was chosen president, Miss Minnie M. Oakley, of Madison, secretary and Miss Nellie C. Silverthorn, of Wausau, treasurer.

The ninth conference was held in Madison, August 24 and 25, 1899, at the close of the session of the Summer School for Library Training. The meetings were interesting and there was a good attendance of librarians from about the state. A marked feature of the program was a paper by Miss Ellen D. Biscoe, of Eau Claire, on the "Bookbinding of our American Publishers", in which she presented the reports which had been gathered from the libraries of the state, and recommended that librarians call the attention of offending publishers to examples of their defective bindings. A "campfire" on the banks of Lake

Monona, on the evening of the 25th, was a novel and most enjoyable feature of the meeting.

The tenth conference was held in Madison in the new building of the State Historical Society on Friday, August 31, 1900. Including the students of the Summer School there were about one hundred in attendance. Nearly all were librarians and there were very few library trustees. The "campfire" on the banks of Lake Monona was again a special feature which will long be remembered by those who attended it. The following officers were chosen: Dr. H. H. Hurd, Chippewa Falls, president; Mrs. J. S. Anderson, Manitowoc, vice-president; Miss Bertha M. Brown, Eau Claire, secretary; Miss Tryphena G. Mitchell, Ashland, treasurer.

#### *District Library Associations.*

The Northern Wisconsin Traveling Library Association, which was organized in 1896, holds annual meetings in Ashland. It has twenty-five traveling libraries in the field in the vicinity of Ashland. Dr. Edward Ellis is president, Mrs. G. F. Merrill vice-president and Miss Loranges secretary. All are of Ashland.

The Fox River Valley Library Association was organized in Menasha October 21, 1898, and has held good meetings in Fond du Lac and Appleton. The present officers are as follows: P. V. Lawson, Menasha, president; Geo. C. Jones, Appleton, vice-president; Miss Elizabeth Smith, De Pere, secretary; Miss Deborah Martin, Green Bay, treasurer.

The Wisconsin Valley Association was organized at Mosinee, February 11, 1899, and held a later meeting in Stevens Point, September 29 and 30, 1899. Hon. H. M. Thompson, of Mosinee, is president and Mrs. Mary C. Dickens, of Wausau, is secretary.

The West Wisconsin Traveling Library Association was organized in Menomonie, December 5, 1898. A meeting was held in Chippewa Falls, January 6, 1899 and another in Menomonie in October of the same year. Hon. Jas. H. Stout, of Menomonie, is president, and Miss Stella Lucas, of Menomonie, is secretary.

#### *State Teachers' Library Section.*

In 1895 the Wisconsin Teachers' Association added to its permanent sections one upon libraries. The meetings of these sections have been popular with the teachers and have been very helpful. The meeting which was held December 28, 1898, was devoted to a discussion of the various agencies which are used to promote the cause of popular education aside from the schools. The necessity of free libraries as aids

to all these agencies was made clearly evident. A meeting held December 29, 1899, gave the Commission an opportunity to show the teachers the best methods of using inexpensive pictures as means of information and instruction. Miss L. E. Stearns, of the Commission, was chairman of the section at both meetings.

#### SUMMER SCHOOL FOR LIBRARY TRAINING.

The sixth annual session of the Wisconsin Summer School for Library Training was held in Madison from July 9 to August 31, 1900.

Forty students attended the school, twenty-seven from Wisconsin, seven from Illinois, two from Iowa, two from Indiana, one from Texas, and one from Missouri. Seventeen of these were actually employed in Wisconsin libraries before the session, four were to be employed in the fall, six had served apprenticeship under competent direction, eleven were employed in other states, and one was promised an appointment outside the state.

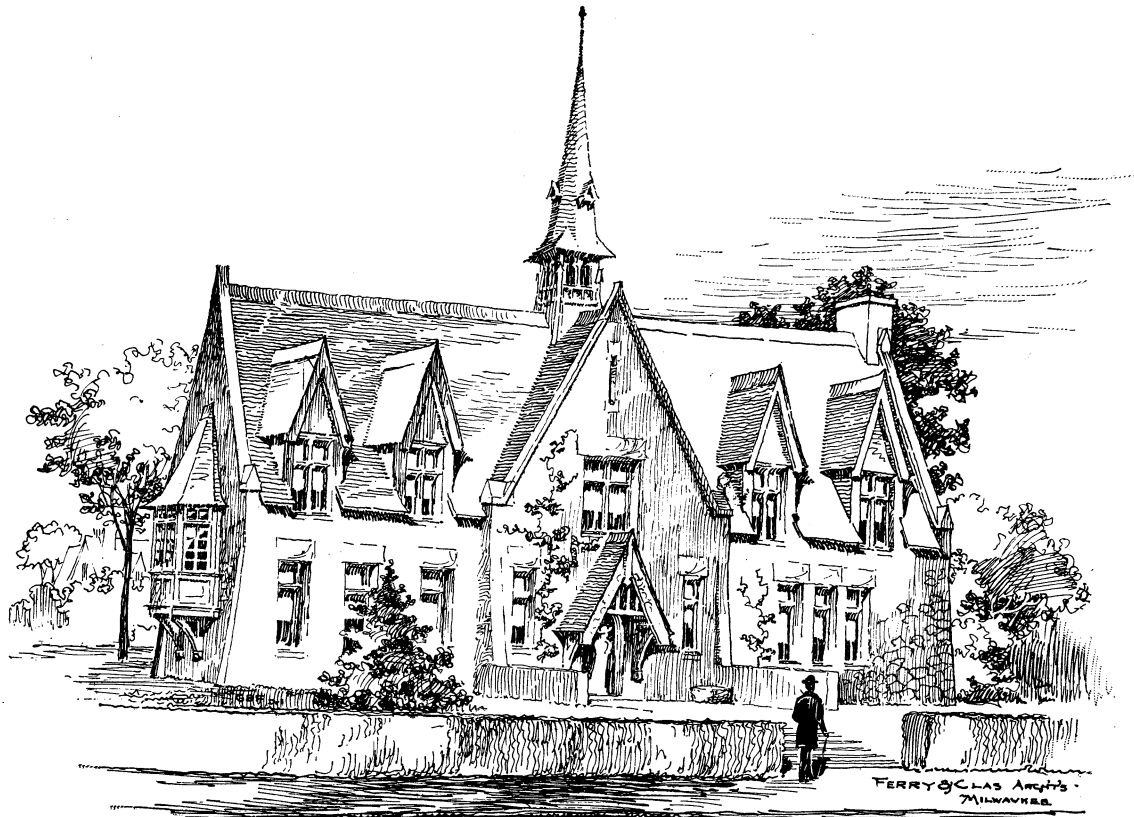
The purpose of the school is not to train inexperienced people for librarianship, but to give new or better methods to experienced librarians, and to provide librarians for the small towns and villages, where the limited amount of money cannot be used for a trained librarian from one of the library schools.

It is evident that library work is each year attracting people of broader education and culture. The summer school students expect to go to small libraries and minor positions, but the preparation of the applicants is much better than that generally offered during the first years of the school. Six of the students at the sixth session had been graduated from reputable colleges, four others had completed one year or more of college work, two were normal school graduates, fourteen were high school graduates, four from private schools, and ten had less than four years of high school work.

Seven librarians were enabled to attend the summer school through the generosity of Senator J. H. Stout, of Menomonie, who furnished scholarships for the benefit of librarians of small libraries who had done good work and were anxious to improve their libraries.

The school was established by the Commission for the purpose of giving instruction in modern library methods to the librarians and assistants in the libraries of the state. Of the 145 students who have attended since the opening in 1895, 68 have come from Wisconsin and 52 are now in library work in this state. This spreading of library knowledge and enthusiasm has raised the standard of libraries and librarianship, and has brought many libraries into close touch with the Commission and with library associations.





LIBRARY  
LAKE MILLS  
WIS

L. D. Fargo Library, Lake Mills, Wis.



The students are not, as a rule, content with summer training only, but wish to study constantly and become competent librarians.

In 1895 a four weeks' course was offered, this was increased to six weeks in 1896-7 and since 1897 an eight weeks' course has been given.

There has been a large increase in attendance notwithstanding the fact that the admission requirements have been raised. Library boards have occasionally paid all the expenses of their librarian during the course; others have allowed the time and paid a substitute. In some cases positions have been conditional upon attendance at the school.

The sessions of the school have been held in connection with the summer session of the State University and in University buildings. The sixth session was held in the new building of the Historical Society. The need of permanent quarters is greatly felt.

The course is divided into two parts, the first four weeks being devoted to a study of reference work, general library economy, business methods, and children's literature; during the last half of the course cataloging and classification are studied. The work is wholly practical. Each student works with the books in the sample library, putting them through all the processes required in a well organized library. The books for this sample library have been loaned to the summer school by the University library and the Madison public library. If the school is to be permanent, it should own a model library for this practice work, a library which may be exhibited during the year to visiting librarians and library trustees as a model in selection and equipment.

Students are expected to work at least six hours a day, lectures covering two hours and laboratory work in the sample library four hours. They carry their work away as corrected samples of all library records, something to be used as a guide in the future.

The school is under the direction of the library instructor of the Commission. Lectures have been given by the officers of the Commission, professors in the University, and by leading library and educational workers.

The special feature of the course in 1899 was a series of lectures on bibliography given by the University professors; of the session this year (1900) a course in children's literature and library work with children was given by the organizer of the Commission, with lectures by others specially informed on this subject.

Increasing attention has been given the care of public documents, national and state, and the problems of the smaller libraries.

The Commission has under consideration a plan for a supplementary home study course, continuing the work of the summer school, and a state certificate to be issued to librarians who have had special training and have done with credit practical work in Wisconsin libraries.

## STUDENTS OF THE SUMMER SCHOOL.

1899.

Name.	Place.	Library.
Ames, Sadie.....	Cleveland, Ohio.....	Public.
Babbitt, Grace E.....	De Kalb, Ill.....	State Normal School.
Barnes, Mrs. Clara P.....	Kenosha, Wis.....	Public.
Calkins, C. M.....	Janesville, Wis.....	Public.
Coffman, H. C.....	Seattle, Wash.....	State University.
Crockett, Viola.....	Oak Park, Ill.....	Seoville Institute.
Douglass, M. H.....	Grinnell, Iowa.....	Iowa College.
Dunegan, Mary.....	Stevens Point, Wis.....	Public.
Faddis, Zoe E.....	Chicago, Ill.....	Blaine School.
Hammond, Blanche.....	Omaha, Neb.....	Public.
Hewitt, Mrs. Mary A.....	Manitowoc, Wis.....	High School.
Horton, Anna.....	Lincoln, Neb.....	Public.
Hubbell, Jennie P.....	Rockford, Ill.....	Public.
Krug, Julia.....	St. Louis, Mo.....	Public.
Le Crone, Sarah.....	Faribault, Minn.....	Public.
McDill, Genevieve.....	Stevens Point, Wis.....	State Normal School.
McLaughlin, Blanche.....	Greensburg, Ind.....	Public.
Miller, Else.....	St. Louis, Mo.....	Public.
O'Brien, Margaret A.....	Omaha, Neb.....	Public.
Pace, Ada.....	Fayetteville, Ark.....	State University.
Parsons, Maud.....	Omaha, Neb.....	Public.
Potter, Katherine M.....	Baraboo, Wis.....	Public.
Rule, Maud.....	Norman, Okla.....	University.
Salisbury, Grace.....	Whitewater, Wis.....	State Normal School.
Seaman, Augusta L.....	Cleveland, Ohio.....	Public.
Sherman, Margaret E.....	Council Bluffs, Iowa.....	Public.
Sherrill, Alice F.....	Crete, Neb.....	Public.
Silverthorn, Nellie C.....	Wausau, Wis.....	Public.
Simonds, May.....	St. Louis, Mo.....	Mercantile.
Tompkins, Ginevra N.....	Fort Wayne, Ind.....	Coates College.
Twiss, Marion E.....	Columbus, Ohio.....	State.
Vanamee, Martia A.....	Colorado Springs, Col.....	Public.
Wall, Lenore.....	Quincy, Ill.....	Public.
Webb, Nelle F.....	Bloomington, Ill.....	Withers Public.
Weber, Mary L.....	Owatonna, Minn.....	Public.
Whare, Grace A.....	Madison, Wis.....	Public.

## STUDENTS OF THE SUMMER SCHOOL.

1900.

Name.	Place.	Library.
Ackley, Gabriella	Oconomowoc, Wis.	Public.
Bailey, Winifred	Waupaca, Wis.	Public.
Baltzell, Virginia	Madis M, Wis.	Public.
Bell, Lillian	Kaukauna, Wis.	Public.
Blood, Henrietta A.	Madison, Wis.	Apprentice.
Brown, Gertrude L.	Evanston, Ill.	Public.
Catlin, Mollie L.	Stevens Point, Wis.	Public.
Chapman, Mabel	Milwaukee, Wis.	Downer College.
Clark, Jessie G.	Oshkosh, Wis.	Public.
Concannon, Mrs. Julia	Pierre, S. D.	Public.
Eager, Sarah M.	Racine, Wis.	Public.
Evans, Mrs. Anna W.	Baraboo, Wis.	Public.
Giffin, Eugenia F.	Chicago, Ill.	T. B. Scott, Grand Rapids.
Guile, Ella M.	Madison, Wis.	Chicago Normal School.
Hamilton, Ella A.	Whitewater, Wis.	Apprentice.
Henley, Daisy	Wabash, Ind.	Public.
Hoover, Anna F.	Galesburg, Ill.	Public.
Hostetler, Lillie	Tuscola, Ill.	Public.
Hurley, Celia	Spring Green, Wis.	Public.
Jandell, Josephine M.	Superior, Wis.	Normal School.
Kennedy, Bess G.	Neillsville, Wis.	Public.
Kirke, Pauline	Carthage, Mo.	Public School.
Macleod, Nan.	Eau Claire, Wis.	Public.
McClure, Anna B.	Milwaukee, Wis.	Apprentice.
McCormick, Lillian	Superior, Wis.	Public.
McDonald, Katharine I.	Madison, Wis.	Free Library Commission.
Marshall, Frances B.	Rensselaer, Ind.	Apprentice.
Mathews, Helen	De Pere, Wis.	Public.
Melvill, Jessie	Galena, Ill.	Public.
Menzies, Mrs. Minnie N.	Janesville, Wis.	Public.
Noble, Charlotte G.	Rice Lake, Wis.	Public.
Oborn, Ethel F.	Neenah, Wis.	Apprentice.
O'Connor, Adeline W.	Houston, Texas.	Houston Lyceum.
Ogilvie, Jenny	Madison, Wis.	Antigo Public.
Powell, Mabel	Lake Forest, Ill.	Ferry Hall.
Rickeman, Gretchen A.	Racine, Wis.	Public.
Skavlem, Gertrude J.	Janesville, Wis.	Public.
Walrath, Belle	Chippewa Falls, Wis.	Public.
Wilson, Bertha B.	Des Moines, Iowa.	Public.
Winterrowd, Gentiliska	Des Moines, Iowa.	Public.

## NEWS FROM SOME OF THE LIBRARIES.

*Antigo—Mrs. S. B. Bridgman, Librarian.*

The city hall, now in process of erection, contains three large rooms on the first floor to be used for library purposes. The Woman's Christian Temperance Union, which has maintained a free library at Antigo for three years past, intends to donate its collections to the city upon the completion of the city building.

*Appleton—Miss Agnes L. Dwight, Librarian.*

The free public library was moved into its new and attractive quarters (see illustration) during the month of March, 1900. As the reading room and book and reference rooms are practically one, separated only by a low railing, free access to the books is given to all. The children's room is a new feature and one that is much appreciated by the little folks. Above the book cases, which fill in all the wall space of the room, is a frieze of dark cloth on which pictures of peculiar interest to children are placed and frequently changed. Two cases of stuffed birds of brilliant plumage and the bird books on the shelves below delight the children. There are tables and chairs to accommodate the very small as well as the older children. Children's periodicals, picture books, puzzles and games make the room well patronized. There is no age limit in the library. A popular feature is the art room, which is also used as a ladies' reading room and is handsomely fitted with reading tables, easy chairs, pictures and statuary. Special attention is paid to bulletin boards; one is devoted to celebrating the birthdays of distinguished people by pictures and reading lists; another to current events, and others to art and travel.

There have been during the year several loan collections of pictures from different citizens. These are advertised in the papers and attract many people. From the beginning the library has cooperated as far as possible with the various literary clubs of the city and has requested that the programs for the following year be submitted as soon as possible to the librarian in order that the purchase of helpful books may be made. The completion during the year of various sets of periodicals, bound and made available by Poole's and the Cumulative Indexes, assists much in reference work. These periodicals are used much by the students of Lawrence University, the schools and literary clubs. The work of mounting pictures of topics to be studied in the schools in the coming year has been recently begun. These pictures are mostly taken from duplicate periodicals, from which the short amusing stories will be bound in paper for the use of the sick, and the biographical and historical articles will be reserved for the reference department.

There is a card catalog of the books to date. The two-book system has been used from the beginning with favorable results.

The librarian of the Appleton Library, which is one of the best in the state, is a graduate of the Armour School of Library Science.

*Arcadia—Volunteer Service of Lady Members of Board of Directors.*

The offer, through the Commission, of a village traveling library given by Hon. Levi Withee, was the stimulus to the establishment of

this library. An officer of the Commission aided in its organization. As an evidence of the popularity of the library, the secretary writes, "It required two months of hard work to get an appropriation of \$400 from the council last year. This year we were given \$400 within thirty minutes after asking for it." The township of Arcadia pays \$25 each year that its people may have the full privileges of the city library.

*Ashland—Miss Tryphena G. Mitchell, librarian.*

The present librarian took charge of the library in November 1899. The old method of classification has been replaced by the Decimal system. A new shelf-list has been started on cards and all books not bearing an accession number have been entered in the accession record. Many of the children's books were withdrawn, others sent to the bindery, and new ones purchased. Free access to the shelves was introduced and in order to secure a better light on the books, and for the greater convenience of the public, it was necessary to rearrange the book shelves. The arrangement of books around the walls is not only a decided improvement to the appearance of the room, but also allows the space needed for a children's corner. Circular reading tables have been built around the posts in the center of the room. Teachers have special cards, upon which they are allowed to draw ten books at a time or more if necessary. The walls have been tinted an olive-green.

The librarian is "intensely interested in the work with the children and the schools and expects to have more time and means to devote to the work this year than was possible before."

*Baraboo—Miss Kate M. Potter, librarian.*

The library has been moved into larger quarters, and now occupies three rooms in the city hall instead of one as heretofore. In addition to the circulating department it has a large reading room, with papers and magazines; an excellent collection of mounted birds is found in a room back of the reading room and is open to the public.

The librarian attended the Summer Library School of 1899.

*Beaver Dam—Miss Hattie A. Doolittle, librarian.*

"In reviewing the work done during the past two years, we find the most decided gain has been in connection with the schools, particularly in the lower grades. The teachers are making much more use of the books to supplement their courses of study and are taking more interest in what their pupils are reading and instructing them in the use of books. A much more systematic course should be arranged in our

relations with the schools and we hope to accomplish this before another year has passed. Lists of reading for the different grades were furnished the schools by the library and copies of Sargent's "Reading for the Young" were also provided by the library. A travel class for the children, carried on by one of the schools aided by the library, as a new undertaking, proved satisfactory enough to lead to the planning of others on a more extensive scale for the coming school year. A geographical and historical study was made of the principal cities of the United States, thus calling for the use of such books as Carpenter's Geographical Readers, King's and others, as well as the elementary histories and miscellaneous books of travel. A reference list on French history, prepared for the use of the Woman's Club, led to a constant demand for books, reference works and periodical literature. So many good suggestions and ideas have been received from the Commission that what success we have achieved in their execution we gratefully attribute to this source."

The librarian attended the Summer School of 1897.

*Black River Falls—Mrs. M. J. Gunn, librarian.*

This library has been reorganized under the direction of an officer of the Commission. The books have been classified, new books purchased, a new charging system introduced, pictures mounted and the general appearance of the library improved by the addition of book supports and bulletins.

*Brodhead School District Library—Mrs. E. C. Randall, librarian.*

This library, which is really a public library, has been reorganized by the teachers, with the aid of the Commission.

*Chippewa Falls—Miss Maud A. Earley, librarian.*

A children's room, the expense of which is borne by the Woman's Club, was opened in June, 1900, doubling the size of the library room. 2,138 volumes have been added within the past two years—a surprising showing. An "Alcott Club" was established, some months ago, by ten young girls who "wanted to do something for the library." This little club keeps the library supplied with flowers and is helping to buy pictures for the bulletin board.

The librarian attended the Summer Library School of 1896 and the assistant that of 1900.



*De Pere—Miss Helen Matthews, librarian.*

The library has suffered twice from fires, but its present quarters are the best that it has occupied. Tables and chairs have recently been purchased for the establishment of a reading room. The library has the two-book system, open shelves and a card catalog.

The librarian attended the Summer Library School of 1900.

*Downing—Rev. W. J. James, librarian.*

This library was established through the aid of the Commission in October, 1899. It has 300 volumes, supplemented by the Stout traveling library collections and those of the Commission.

*Eau Claire—Miss Bertha M. Brown, librarian.*

The two-book system has been introduced. A very large use is made of bulletins pertaining to current events, birthdays of famous personages, and special subjects. Book-notes are tipped inside the front cover of books. Reference work is done with different groups of the local Library League.

The librarian attended the Summer School of 1896 and has recently completed a two years' course at the State Library School at Albany, New York. The assistant attended the Summer School in 1900.

*Edgerton—Mrs. H. Croft, librarian.*

The Edgerton library has been reorganized by an officer of the Commission, a new charging system introduced and other noticeable improvements made in its management.

*Evansville—Miss Clara Chapel, librarian.*

This library was reorganized by the Commission, aided by the women of the city. The two women's clubs have assisted the library board materially through work and by raising \$1,500 for the purchase of books.

The librarian attended the Summer Library School of 1898.

*Fond du Lac—Miss Emma E. Rose, librarian.*

This library has adopted the plan of purchasing duplicate copies of the most popular books which it rents for five cents a week. The innovation has been established so recently that its popularity is yet to be determined.

*Grand Rapids—Mrs. A. W. Evans, librarian.*

The librarian is at work on a card catalog. Patrons are permitted to go to the shelves and are being taught to put away the books as returned. The general appearance of the library has been greatly improved during the past year. The consolidation of the cities of Grand Rapids and Centralia has greatly increased the demands upon it.

The librarian attended the Summer Library School of 1900.

*Horicon—Miss Clara B. Carr, librarian.*

This library was organized by the Commission. A library association maintained it for several months, when it was finally adopted by the city in March, 1900.

*Janesville—Mrs. Louise S. Best, librarian.*

Through the united efforts of the Library Board and a number of women of the city a children's room was opened which has proved a great success. The two-book system and a new method of charging have been introduced; and an extensive use is made of bulletins. Boxes of books are sent to a large manufactory for the use of the operatives. The Commission has aided in these improvements. Two of the assistant librarians attended the Summer School in 1900.

*Kenosha—Mrs. Clara P. Barnes, librarian.*

The library now occupies the beautiful Gilbert M. Simmons Memorial Library Building, erected by Z. G. Simmons, a prominent citizen of Kenosha. (See frontispiece.)

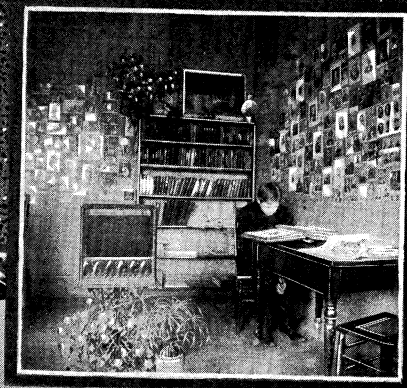
The librarian attended the Summer Library School of 1899.

*Manitowoc—Miss Henriette von Briesen, librarian.*

This library was opened March, 1900, under the charge of a trained librarian from the Illinois State Library School. A book fund of \$5,000 had been previously raised, supplemented by an appropriation of \$1,250 from the city. The library is located in four rooms above the post-office. English, German, Norwegian, Polish and Bohemian books are circulated. The reading room and children's room are important features.

*Marinette—Miss Julia Elliott, librarian.*

The library has introduced a card catalog and a large number of books have been added to the shelves. A reading room has been established.



N. W. LATHO. CO.

Corner Public Library, Stevens Point, Wis.

Public Library and Traveling Library, North Greenfield, Wis.

Public Library, Waupaca, Wis.



Scrap-books are used for the amusement of the little patrons. The room is crowded and the citizens are looking forward with eagerness to the erection of a library building which the Hon. Isaac Stephenson has promised to the city.

This library is the headquarters of the Marinette County Traveling Library Association.

*Menasha—Miss Lucy L. Pleasants, librarian.*

This library has introduced a card catalog during the past year, and has strengthened its reference department by the addition of bound magazines and the indexes thereto—Poole's and the Cumulative. Reading lists have been issued to every grade in the schools, which have greatly increased the circulation. Great efforts are made to supply reference matter to study clubs. Special attention has been paid to birthday and nature bulletins, to awaken the interest of the children. Bulletins on current topics never fail to attract attention. A black-board announces important contributions to current periodicals. The library has been greatly beautified by growing plants, while the lecture room has been made attractive (see illustration) through the efforts of study clubs.

*Menomonie—Miss Stella Lucas, librarian.*

"The two-book system has been used for some time with satisfactory results. There is hearty co-operation between the library and the schools. The number of books a teacher may draw is practically not limited, except when several wish to use the same class of books. The bulletins sent out by the Commission are very helpful in every way, particularly in regard to special days. Our exhibit of Indian curios and pictures attracted many visitors. Some of the teachers brought their history classes in a body."

This library is the headquarters of the Stout Traveling Library System of Dunn county; and all of the books in the library proper are free to all residents of the county.

The librarian attended the Summer Library School of 1896.

*Merrill—Miss Janet P. Russell, librarian.*

The library has been reclassified according to the Dewey system; a card shelf-list substituted for a sheet list; borrowers are admitted to the shelves and special cards are issued for teachers' use. The age limit has been reduced from thirteen to eight years. A system of traveling

libraries for Lincoln county has been established largely through the efforts of the librarian and the board of directors of the Merrill Library.

The librarian attended the Summer Library School of 1898.

*Monroe—Miss Katherine Smock, librarian.*

"The author card catalog is now complete. Besides our usual reference work for clubs we have been interested in a Library Art League and an Audubon Society. The Audubon Society is the outgrowth of our Nature Day Exhibit."

*Joseph Dessert Public Library, Mosinee—Miss Mary McLane, librarian.*

This library makes a special feature of its reading room which is abundantly supplied with the best periodical literature and the daily papers. A number of afternoons have been planned with special reference to interesting the children. Dewey Day was celebrated by suitable pictures, songs and readings on the Manila victory. On Indian Day there was an excellent display of articles of Indian industry and relics, varied by framed Burbank pictures. An afternoon of particular interest to parents and children was spent in listening to a bird lecture by Mrs. Whitcomb, of Milwaukee, the talk being illustrated by stuffed birds of Wisconsin. A large use is made of a bulletin board and also of a novel indicator telling of the receipt of current periodicals. Book wrappers found about newly purchased books are used to advertise them to patrons. Picture exhibits of French painters, Madonnas and Grecian architecture have proved attractive.

*Neenah—Miss Emma Lachmann, librarian.*

A reading room has been established in connection with the library through the efforts of the Tuesday Club of the city.

*Neillsville—Miss B. A. Kennedy, librarian.*

This library has been reorganized by the Commission. The librarian attended the Summer Library School of 1900.

*New London—Miss Jennie Radkey, librarian.*

This library was recently reorganized by an officer of the Commission.

*Oconomowoc—Miss Gabriella Ackley, librarian.*

The library has recently adopted the open-shelf system and the books have been reclassified by an officer of the Commission.

The librarian attended the Summer Library School of 1900.

*New Richmond—Miss Grace Epley librarian.*

The New Richmond library was totally destroyed by the terrible tornado of June 12, 1899. Efforts are now being made to renew the collection, in library rooms set aside in the new city hall.

*Oakfield—Volunteer Service.*

In December, 1899, owing to an offer by the Commission of one of its traveling libraries, an old association library that had been loaned to a church was reclaimed, the school library, with the exception of reference books, was secured, the town voted \$175 for the purchase of new books and to pay running expenses, and the officers of the Commission reorganized the collection, aided by some of the citizens of the village.

A separate accession list was made of the school books so that they could be returned to the school at any time in case objections were raised. The change, however, is reported by the president of the library board to be very satisfactory, not only to the teachers but to the pupils and patrons of the school. Under the old system the pupils in each department were allowed to draw books only one day in the week; now every pupil may draw books twice a week, "an advantage," says the president, "not to be lightly overlooked."

*Oshkosh—Miss Emily Turner, librarian.*

The library moved into its new library building in August, 1900. (See illustration.)

The librarian is a graduate of the Pratt Institute Library School, Brooklyn, New York. One of the assistants attended the Summer School in 1900.

*Plymouth—Miss Mary Taylor, secretary.*

The ladies of the Woman's Relief Corps have instituted a free reading room in a convenient, comfortable and pleasant room in the main business street. The room is open ten hours each day. Back numbers of magazines are issued for home use.

*Racine—Miss Mary J. Calkins, librarian.*

The librarian is a graduate of the Armour Institute Library Training Class; and two of the assistants attended the Summer Library School of 1900.

*Sheboygan—Miss Bertha E. Rombauer, librarian.*

This library has recently been placed in charge of a trained librarian from the State Library School at Albany, New York. The two-book system has been introduced.

*Rhineland—Miss Erna Kucht, librarian.*

The library has recently been reorganized by a trained librarian.

*Shawano—Volunteer service of club women.*

This library was established, through the aid of the Commission, in October, 1899. The library has been classified and cataloged by Miss Alice M. Hughes, Merrill, Wis., who donated her services.

*Sparta—Miss Jennie Scouten, librarian.*

A reading room with magazines has recently been added.

*Stevens Point—Miss Mollie Catlin, librarian.*

This library is noticeable for the large circulation of its books—3,625 volumes having a total circulation of 32,873. Patrons have been trained to return books to the shelves after they have been checked off by the librarian. Framed pictures are circulated with great success.

The assistant librarian attended the Summer Library School of 1899 and the librarian that of 1900.

*Superior—Miss L. McCormick, librarian.*

There have been noticeable improvements made in this library during the past year, many of them being recommended by the Commission. In lieu of a children's room, a part of the general reading room has been set aside, supplied with low tables and chairs. On a large bulletin board, in this portion of the room, are placed interesting exhibits to attract the children and many of the older people. Over 900 children's books were purchased during the past year. A large number of art studies have been mounted by the girls from the eighth grade, which are used by the art teacher in the various schools.



Library stations have been established in five places in the city. Books are sent three times a week to each with the exception of Itasca, which is three miles from the library, and is supplied twice a week. The borrowers at Itasca have made arrangements with the railroad, by which the books are carried free of charge.

A large use of the newspapers is made by the library in calling attention to its work. Items appear almost daily, and readers can not fail to know of the existence of the library and the good work that it is doing.

*Thorp—Mrs. C. Poppe, librarian.*

This library has purchased a building for its use.

*Two Rivers—Miss Lizzie Baetz, librarian.*

Through the efforts of the Commission the appropriation for the library was increased from \$500 to \$750, during 1900, thus enabling necessary repairs to be made on the library building.

*Waukesha—Miss Fannie L. Ells, librarian.*

The library was maintained by the Beacon Lights Club for some time and was adopted by the city in June, 1900. It has recently been reorganized with the aid of the Commission.

*Waupaca—Miss W. E. Bailey, librarian.*

This library was organized by the Commission in the winter of 1899 and 1900. The librarian attended the Summer Library School of 1900.

*Wauwatosa—Mrs. Agnes B. Roddis, librarian.*

This library is unique in that there is no limit to the number of books that patrons may borrow at one time, provided that but one is fiction.

*Whitewater—Miss Ella Hamilton, librarian.*

This library is comfortably housed in the new city hall. There are reading tables, a children's corner which has been made attractive by means of flags and colored pictures of birds and flowers. The members of the women's clubs worked effectively in improving and reorganizing the library under the direction of an officer of the Commission.

The librarian attended the Summer Library School of 1900.

*Whitehall—O. Rogan, librarian.*

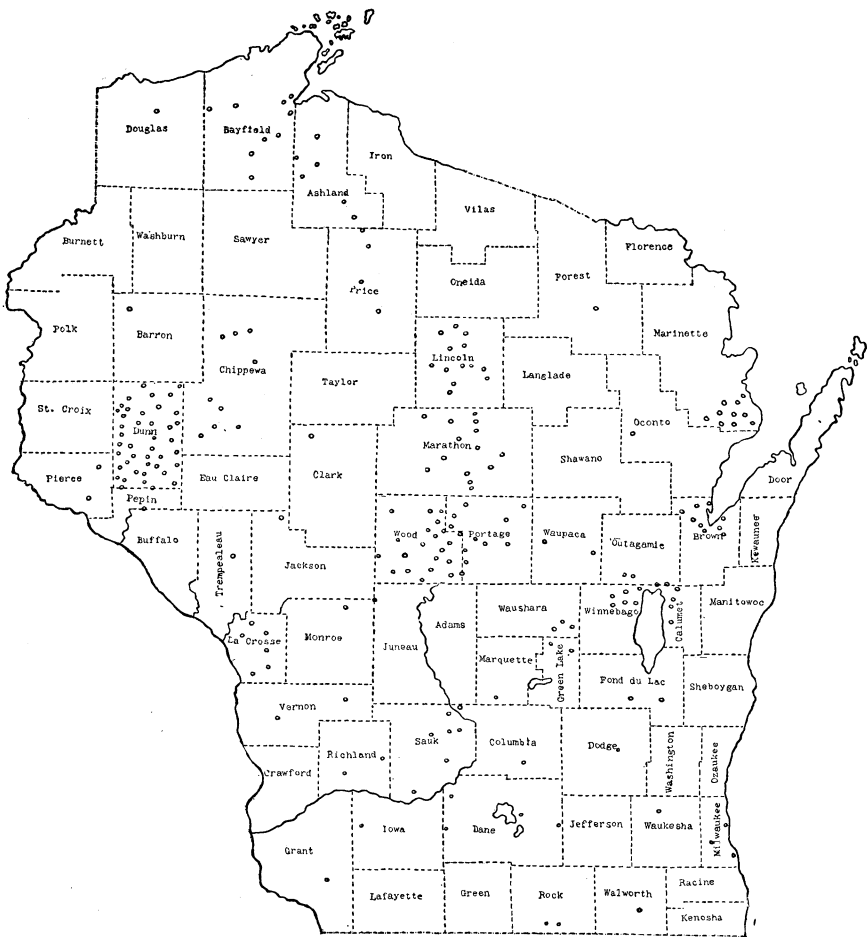
This library was opened in its new building in September, 1899. Its establishment was due largely to the offer of a traveling library given to the Commission for that purpose by Hon. Levi Withee. The library is cared for in a somewhat novel manner. The authorities have entered into a contract with a telephone company, by which the exchange office is placed in the library. The librarian attends to the exchange, by which the library is to receive \$125 a year and \$2.50 additional for each telephone connected above 40 subscribers. "This adds materially to the revenues of the library," writes the secretary, and we consider it an advantage in making it easier to get someone to attend to the library as we can pay considerably higher wages. We prohibit all talking except that done by the operator, and we are quite satisfied that there will be but little disturbance to the readers from that cause."

This village, having a population of about 500, raised \$967.59 for library purposes during the past year—an excellent showing.



Map showing location of free public libraries in Wisconsin in August, 1900. A few free association libraries which have not assured means of permanent support are not shown.





Map showing free traveling library stations in Wisconsin, only 230.  
 There ought to be 1,000.



## PROCEEDINGS OF THE WISCONSIN FREE LIBRARY COMMISSION.

Madison, Wis., May 27, 1899.

A special meeting of the Wisconsin Free Library Commission was held in the capitol at 2 P. M. on the above date, in pursuance of a call by Chairman Stout. Present, Commissioners Stout, Thwaites and Harvey. Commissioner Thwaites offered a resolution that the official title of Miss L. E. Stearns should be "Library Organizer" instead of "Librarian." The resolution was carried. Commissioner Thwaites offered a resolution that Miss Cornelia Marvin be elected "Librarian" of the Commission and "Director of the Summer School," at a salary of \$1,200 per annum and expenses when absent from the office on the work of the Commission. This resolution was carried. Commissioner Thwaites offered the following resolution, which was adopted;

*Resolved*, That the secretary of this Commission be and he hereby is delegated to represent the Commission at the forthcoming general meeting of the American Library Association at Atlanta, and upon his return to visit New York for the purpose of studying the methods of the traveling library system of that state, and report thereon to the Commission at its annual meeting in June next.

Upon motion of Commissioner Harvey the Commission adjourned.

F. A. HUTCHINS,  
Secretary.

Madison, June 13, 1899.

The annual meeting of the Commission was held in its office on this date. Present, Commissioners Adams, Thwaites and Morris. Absent, Commissioners Stout and Harvey. Upon motion of Commissioner Thwaites Commissioner Adams was elected temporary chairman because of the absence of Chairman Stout.

The secretary notified the members of the Commission that Governor Scofield had reappointed Hon. J. H. Stout as a member of the Commission for the term ending June 1, 1901.

Commissioner Thwaites moved that Commissioner Stout be re-elected as chairman for the Commission for the ensuing year. Carried.

Commissioner Adams offered the following resolution:

*Resolved*, That the Secretary and the Director of the Summer School be and they are hereby authorized and directed, as far as practicable, to provide all necessary instruction for all applicants who are duly qualified to receive and profit by the instruction. Carried.

Commissioner Thwaites moved that Miss Stearns be known in the future as the Library Organizer of the Commission and that Miss Marvin be known as the Library Instructor and Director of the Summer School. Voted.

Commissioner Thwaites offered the following resolution:

*Resolved*, That the chairman and secretary be and they are hereby authorized to employ Miss Mary E. Tanner as an assistant in the office of

the Commission, at a salary of \$100 per month and necessary traveling expenses, if they think it advisable to do so. Carried.

Commissioner Thwaites moved that the secretary be authorized to employ such extra clerical help as may be necessary to care for the routine work of the office. Carried.

Commissioner Morris moved that the chairman be authorized and requested to secure a typewriting machine for use in the office. Carried.

Upon motion of Commissioner Morris the Commission then adjourned to meet at the call of the chairman.

F. A. HUTCHINS,  
Secretary.

Madison, Wis., June 19, 1899.

An adjourned meeting of the Commission was held at 9:30 A. M. on this date at the call of Chairman Stout. Present, Commissioners Stout, Adams and Thwaites—3. Absent, Commissioners Morris and Harvey—2.

Commissioner Adams offered the following resolution:

*Resolved*, That the salaries of Secretary Hutchins and Library Organizer Stearns each be advanced \$100 per annum, so that the salary of Mr. Hutchins shall be \$1,600 per annum and that of Miss Stearns \$1,300. Carried.

Upon motion of Commissioner Thwaites the Commission then adjourned.

F. A. HUTCHINS,  
Secretary.

Madison, Wis., May 11, 1900.

A special meeting of the Wisconsin Free Library Commission was held in the capitol, at 10 A. M. on the above date, in pursuance of a call by Chairman Stout. Present, Chairman Stout and Commissioners Morris, Thwaites and Harvey. Absent, Commissioner Adams.

Commissioner Thwaites moved that the rules be suspended and that the present meeting be considered the annual meeting and stand in lieu of that provided for June 12, at which time the annual conference of the American Library Association will be in session. The motion was carried by a unanimous vote.

Commissioner Thwaites moved that Commissioner Stout be elected as chairman for the ensuing year and that F. A. Hutchins be elected secretary. The motion was put to vote by Commissioner Thwaites and was carried.

Secretary Hutchins, Miss L. E. Stearns, organizer, and Miss Cornelia Marvin reported verbally, at some length, on the lines of work in their charge. Their reports were accepted and those who presented them were requested to put them in permanent form in the next biennial report of the Commission.

Commissioner Harvey moved that section I of article II of the rules and regulations of the Commission be amended to read as follows:

Section I. The officers of the Commission shall be a chairman and vice-chairman to be chosen at the annual meeting for the period of one year.

There shall be elected annually at the annual meeting, a secretary who shall not be a member of the Commission. Vacancies in any of the above offices may be filled at any meeting at which it is stated in the notice calling such meeting that such vacancy will be filled. Voted.

Commissioner Morris moved that section VII of article I of the rules and regulations of the Commission be amended to read as follows:



Section VII. All bills incurred in behalf of the Commission must be accompanied by the proper vouchers, and when approved by the chairman, or vice-chairman, and secretary, shall be by them certified to the secretary of state. Voted.

Commissioner Harvey moved that section II of article I of the rules and regulations of the Commission, be amended to read as follows:

Special meetings may be called by the chairman, or in his absence or disability, by the vice-chairman, or upon the written request of two Commissioners, by the secretary, such request to be filed with and preserved by the secretary among the papers of the Commission. Voted.

Upon motion of Commissioner Harvey, Commissioner Thwaites was elected vice-chairman for the ensuing year.

Commissioner Morris moved that the secretary, the organizer and the instructor each be allowed leave of absence amounting to a month's vacation in each year. Voted.

Commissioner Thwaites moved that each member of the clerical force be allowed leaves of absence amounting to three weeks' vacation each year, and that the dates for all leaves of absence shall be decided by the chairman and secretary. Voted.

Commissioner Morris moved that the secretary of the Commission be delegated to represent it at the forthcoming general meeting of the American Library Association at Montreal. Voted.

F. A. HUTCHINS,  
Secretary.

EXPENDITURES OF WISCONSIN FREE LIBRARY COMMISSION  
FOR BIENNIAL PERIOD ENDING SEPTEMBER 30, 1900.

ORDERS DRAWN.

1898-9.

1898.		
Oct. 6.	L. E. Stearns—trav. exp.....	\$31 13
Oct. 6.	L. E. Stearns—salary, Sept.....	100 00
Oct. 6.	L. M. Curtiss, salary, Sept.....	20 00
Oct. 6.	F. A. Hutchins—salary, Sept.....	125 00
Oct. 28.	Ella F. Corwin—clerical service.....	23 90
Oct. 28.	Clark Engraving Co.—plates.....	6 00
Oct. 28.	Ella Stiehl—labor .....	3 50
Nov. 3.	L. E. Stearns—salary, Oct.....	100 00
Nov. 3.	F. A. Hutchins—trav. exp.....	26 14
Nov. 3.	F. A. Hutchins—cash for office supplies.....	15 51
Nov. 3.	L. M. Curtiss—salary, Oct.....	20 00
Nov. 3.	F. A. Hutchins—salary, Oct.....	125 00
Nov. 3.	R. G. Thwaites—trav. exp.....	5 72
Nov. 15.	H. C. Gerling—drayage.....	9 00
Nov. 15.	Breeze Printing Co., Menasha—papers.....	22 60
Nov. 15.	L. E. Stearns—trav. exp.....	65 20
Nov. 25.	Democrat Printing Co.—binding and printing.....	36 90
Nov. 25.	L. E. Stearns—salary, Nov.....	100 00
Nov. 25.	L. E. Stearns—trav. exp.....	21 94
Nov. 25.	F. A. Hutchins—salary, Nov.....	125 00
Nov. 25.	F. A. Hutchins—trav. exp.....	64 69
Nov. 25.	L. M. Curtiss—salary, Nov.....	20 00
Nov. 25.	G. Grimm & Son—binding.....	37 20
Dec. 21.	F. A. Hutchins—salary, Dec.....	125 00

Dec. 21.	L. E. Stearns—salary, Dec.....	100 00
Dec. 21.	L. E. Stearns—trav. exp.....	73 69
Dec. 21.	L. M. Curtiss—salary, Dec.....	20 00
Dec. 21.	Ella Stiehl—labor .....	10 50
1899.		
Jan. 6.	Mrs. C. S. Morris—trav. exp.....	3 86
Jan. 6.	S. C. Stuntz—labor .....	19 25
Jan. 9.	E. F. Corwin—cataloging.....	59 67
Jan. 16.	G. Brumder—binding .....	25 30
Jan. 26.	L. E. Stearns—salary, Jan.....	100 00
Jan. 26.	L. E. Stearns—expenses.....	13 61
Jan. 26.	F. A. Hutchins—salary, Jan.....	125 00
Jan. 26.	F. A. Hutchins—expenses.....	43 53
Jan. 26.	F. A. Hutchins—expenses.....	48 71
Jan. 27.	E. F. Corwin—clerical services.....	25 00
Jan. 27.	L. M. Curtiss—salary, Jan.....	125 00
Feb. 27.	F. A. Hutchins—salary, Feb.....	25 00
Feb. 27.	L. M. Curtiss—salary, Feb.....	17 29
Feb. 27.	Ella F. Corwin—clerical services.....	7 48
Feb. 27.	L. M. Curtiss—expenses .....	100 00
Mch. 1.	L. E. Stearns—salary, Feb.....	20 75
Mch. 1.	L. E. Stearns—expenses.....	52 85
Mch. 1.	F. A. Hutchins—expenses.....	24 05
Apr. 8.	Blanche Harper—slides .....	25 00
Mch. 28.	L. M. Curtiss—salary, March.....	74 85
Mch. 28.	L. E. Stearns—expenses .....	100 00
Mch. 28.	L. E. Stearns—salary, March.....	125 00
Mch. 28.	F. A. Hutchins—salary, March.....	8 75
Mch. 28.	F. A. Hutchins—expenses .....	13 62
Apr. 22.	F. A. Hutchins—office supplies.....	12 20
Apr. 22.	Ella Stiehl—clerical services .....	37 10
Apr. 22.	G. Grimm & Son—binding.....	19 00
Apr. 22.	H. C. Gerling—drayage.....	53 97
Apr. 22.	F. A. Hutchins—expenses.....	125 00
Apr. 26.	F. A. Hutchins—salary, April.....	25 00
Apr. 26.	L. M. Curtiss—salary, April.....	100 00
Apr. 26.	L. E. Stearns—salary, April.....	29 08
Apr. 26.	L. E. Stearns—expenses.....	23 50
May 2.	Democrat Printing Co.—binding.....	15 00
May 2.	N. Frederickson & Sons—cases.....	125 00
May 29.	F. A. Hutchins—salary, May.....	100 00
May 29.	L. E. Stearns—salary, May.....	25 00
May 29.	L. M. Curtiss—salary, May.....	50 00
May 29.	Emma Gattiker—salary .....	8 76
May 29.	Emma Gattiker—expenses .....	114 42
June 10.	F. A. Hutchins—trav. exp.....	107 22
June 23.	L. E. Stearns—trav. exp.....	25 00
June 27.	E. Gattiker—clerical work .....	30 00
June 27.	L. M. Curtiss—salary, June.....	125 00
June 27.	F. A. Hutchins—salary, June.....	105 00
June 27.	L. E. Stearns—salary, June.....	4 85
July 11.	Ella Stiehl—services .....	40 00
July 25.	S. E. Lathrop—services .....	133 66
July 25.	F. A. Hutchins—salary, July.....	30 00
July 25.	L. M. Curtiss—salary, July.....	103 66
July 25.	L. E. Stearns—salary, July.....	30 95
July 25.	L. E. Stearns—expenses .....	34 38
July 25.	S. E. Lathrop—expenses .....	13 75
Aug. 5.	H. C. Gerling—drayage .....	24 85
Aug. 14.	F. A. Hutchins—expenses .....	50 00
Aug. 17.	Emma Gattiker—services .....	

## EXPENDITURES OF THE COMMISSION.

35

Aug. 17.	Anna Welsh—labor .....	8 40
Aug. 22.	F. A. Hutchins—salary, Aug.....	133 66
Aug. 22.	L. M. Curtiss—salary, Aug.....	30 00
Aug. 22.	Cornelia Marvin—salary, Aug.....	100 00
Aug. 24.	L. E. Stearns—salary, Aug.....	108 33
Sept. 2.	Geo. Brumder—books .....	11 39
Sept. 13.	Mrs. A. Keogl—labor .....	7 26
Sept. 22.	F. A. Hutchins—salary, Sept.....	133 33
Sept. 22.	F. A. Hutchins—office supplies .....	32 23
Sept. 22.	M. R. Macpherson—services .....	55 00
Sept. 22.	M. R. Macpherson—trav. exp.....	14 97
Sept. 22.	Cornelia Marvin—salary, Sept.....	100 00
Sept. 22.	Cornelia Marvin—trav. exp.....	136 07
Sept. 22.	L. E. Stearns—trav. exp.....	43 83
Sept. 22.	L. E. Stearns—salary, Sept.....	108 33
Sept. 22.	Chicago Art Education Co.—supplies.....	5 00
Sept. 22.	L. M. Curtiss—salary.....	30 00
Sept. 22.	Foreign Photograph Co.—supplies.....	7 80
Sept. 22.	F. A. Hutchins—trav. exp.....	55 18
Sept. 27.	M. E. Tanner—salary 1½ months.....	150 00
Sept. 27.	M. E. Tanner—trav. exp.....	26 01
Sept. 27.	M. E. Tanner—trav. exp.....	15 05
	Total .....	<u>\$5,655 38</u>

## 1899-1900.

Oct. 25.	Cornelia Marvin—salary, Oct.....	100 00
Oct. 25.	Cornelia Marvin—trav. exp.....	29 58
Oct. 25.	L. M. Curtiss—salary, Oct.....	30 00
Oct. 25.	L. E. Stearns—salary, Oct.....	108 33
Oct. 25.	L. E. Stearns—trav. exp.....	35 33
Oct. 25.	F. A. Hutchins—salary, Oct.....	133 33
Oct. 25.	Des Forges & Co.—books.....	10 31
Oct. 25.	Des Forges & Co.—books.....	20 21
Oct. 25.	Democrat Printing Co.—printing and binding.....	81 90
Oct. 31.	M. E. Tanner—salary, Oct.....	100 00
Oct. 31.	M. E. Tanner—trav. exp.....	54 87
Oct. 31.	M. R. Macpherson—salary, Oct.....	50 00
Oct. 31.	M. R. Macpherson—trav. exp.....	19 40
Nov. 15.	L. E. Stearns—trav. exp.....	66 46
Nov. 15.	J. Tyrrell—screens and supplies.....	26 90
Nov. 24.	F. A. Hutchins—office supplies.....	73 88
Nov. 24.	F. A. Hutchins—trav. exp.....	49 96
Nov. 24.	F. A. Hutchins—salary, Nov.....	133 00
Nov. 24.	M. E. Tanner—salary, Nov.....	100 00
Nov. 24.	L. E. Stearns—salary, Nov.....	108 33
Nov. 24.	L. E. Stearns—trav. exp.....	50 00
Nov. 24.	A. C. McClurg & Co.—books.....	91 86
Nov. 24.	M. R. Macpherson—salary, Nov.....	50 00
Nov. 24.	L. M. Curtiss—salary, Nov.....	30 00
Nov. 24.	Cornelia Marvin—salary, Nov.....	100 00
Nov. 24.	Cornelia Marvin—trav. exp.....	59 98
Nov. 27.	M. E. Tanner—trav. exp.....	59 31
Nov. 27.	L. C. Burke—labor .....	8 15
Dec. 1.	G. Grimm & Son—binding.....	16 85
Dec. 1.	Des Forges & Co.—books and supplies.....	7 24
Dec. 1.	R. G. Thwaites—trav. exp.....	2 78
Dec. 23.	M. E. Tanner—trav. exp.....	53 28
Dec. 23.	M. E. Tanner—salary, Dec.....	100 00

Dec. 23.	L. E. Stearns—trav. exp.....	55 80
Dec. 23.	F. A. Hutchins—salary, Dec.....	133 00
Dec. 23.	L. E. Stearns—salary, Dec.....	108 33
Dec. 23.	Cornelia Marvin—salary, Dec.....	100 00
Dec. 23.	M. R. Macpherson—salary, Dec.....	50 00
Dec. 23.	Cornelia Marvin—trav. exp.....	11 65
Dec. 23.	Tracy, Gibbs & Co.—printing.....	27 15
Dec. 23.	Democrat Printing Co.—printing.....	16 99
Dec. 23.	Blied Bros.—supplies .....	9 95
Dec. 23.	H. C. Gerling—drayage.....	20 17
Dec. 23.	A. C. McClurg & Co.—books.....	28 97
Dec. 23.	Grace Whare—labor .....	27 00
Dec. 23.	L. M. Curtiss—salary, Dec.....	30 00
Dec. 23.	Grace Whare—trav. exp.....	12 92
Dec. 23.	Grace Whare—labor .....	8 00
1900.		
Jan. 11.	I. E. Burt Co.—supplies.....	23 60
Jan. 19.	N. Frederickson & Sons—cases .....	22 25
Jan. 25.	M. R. Macpherson—salary, Jan.....	50 00
Jan. 25.	L. M. Curtiss—salary, Jan.....	30 00
Jan. 25.	K. I. MacDonald—salary, Jan.....	12 50
Jan. 25.	F. A. Hutchins—exp.....	64 87
Jan. 25.	C. Marvin—salary, Jan.....	100 00
Jan. 25.	F. A. Hutchins—salary, Jan.....	133 33
Jan. 25.	F. A. Hutchins—office supplies .....	63 25
Jan. 26.	L. E. Stearns—salary, Jan.....	108 33
Jan. 29.	M. E. Tanner—salary, Jan.....	100 00
Jan. 29.	Des Forges & Co.—books.....	34 95
Feb. 5.	Globe-Wernicke Co.—supplies .....	30 00
Feb. 6.	P. Hazen—clerical services .....	6 25
Feb. 6.	W. S. Houghton—periodicals .....	38 75
Feb. 6.	H. C. Gerling—drayage .....	12 50
Feb. 6.	Mrs. C. S. Morris—exp.....	31 40
Feb. 9.	M. E. Tanner—exp.....	66 77
Feb. 20.	Grace Whare—labor .....	18 00
Feb. 20.	M. R. Macpherson—salary, Feb.....	50 00
Feb. 20.	C. Marvin—salary, Feb.....	100 00
Feb. 20.	L. M. Curtiss—salary, Feb.....	30 00
Feb. 20.	K. I. MacDonald—salary, Feb.....	25 00
Feb. 20.	F. A. Hutchins—salary, Feb.....	133 33
Feb. 20.	M. R. Macpherson—trav. exp.....	8 42
Feb. 21.	C. Marvin—exp. ....	45 85
Feb. 21.	L. E. Stearns—salary, Jan.....	108 33
Mch. 7.	G. Grimm & Son—binding.....	13 45
Mch. 15.	Des Forges & Co.—books.....	22 18
Mch. 15.	Grace Whare—services .....	4 00
Mch. 15.	Democrat Printing Co.—supplies.....	54 62
Mch. 21.	K. I. MacDonald—salary, March.....	25 00
Mch. 21.	M. R. Macpherson—salary, March.....	50 00
Mch. 21.	M. R. Macpherson—trav. exp.....	14 70
Mch. 21.	F. A. Hutchins—office supplies.....	37 70
Mch. 21.	F. A. Hutchins—trav. exp.....	11 60
Mch. 21.	C. Marvin—trav. exp. ....	3 85
Mch. 21.	C. Marvin—salary, March .....	100 00
Mch. 21.	L. M. Curtiss—salary, March.....	30 00
Mch. 21.	F. A. Hutchins—salary, March.....	133 33
Mch. 21.	L. E. Stearns—trav. exp.....	36 40
Mch. 24.	L. E. Stearns—salary, March .....	108 33

## EXPENDITURES OF THE COMMISSION.

37

Apr. 4.	W. S. Houghton—periodicals .....	42 50
Apr. 5.	Tracy, Gibbs & Co.—printing and supplies.....	14 62
Apr. 11.	Des Forges & Co.—books.....	22 78
Apr. 25.	H. C. Gerling—cartage .....	12 00
Apr. 25.	C. Marvin—trav. exp.....	46 00
Apr. 25.	C. Marvin—salary, April .....	100 00
Apr. 25.	L. M. Curtiss—salary, April.....	30 00
Apr. 25.	K. I. MacDonald—salary, April.....	25 00
Apr. 25.	M. R. Macpherson—salary, April.....	50 00
Apr. 25.	F. A. Hutchins—salary, April .....	133 33
Apr. 25.	L. E. Stearns—trav. exp.....	68 56
Apr. 28.	L. E. Stearns—salary, April.....	108 34
May 5.	G. Grimm & Son—binding.....	38 80
May 17.	L. E. Stearns—trav. exp.....	29 75
May 17.	L. M. Curtiss—salary, May.....	30 00
May 17.	M. R. Macpherson—salary, May.....	50 00
May 17.	F. A. Hutchins—salary, May.....	133 33
May 17.	L. E. Stearns—salary, May.....	108 33
May 17.	C. Marvin—trav. exp.....	53 75
May 17.	C. Marvin—salary, May .....	100 00
June 4.	F. A. Hutchins—exp.....	21 55
June 4.	F. A. Hutchins—office supplies.....	29 41
June 22.	A. C. McClurg & Co.—books.....	23 65
June 28.	F. A. Hutchins—exp.....	68 00
June 28.	F. A. Hutchins—salary, June.....	133 33
June 28.	G. Grimm & Son—binding.....	63 15
June 28.	L. E. Stearns—trav. exp.....	56 87
June 28.	L. E. Stearns—salary, June.....	108 33
June 28.	C. Marvin—salary, June .....	100 00
June 30.	L. M. Curtiss—salary, June.....	35 00
June 30.	W. S. Houghton—periodicals .....	39 00
July 25.	M. R. Macpherson—salary, June.....	50 00
July 25.	M. R. Macpherson—trav. exp.....	2 50
July 25.	M. R. Macpherson—salary, one-half of July.....	25 00
July 25.	L. M. Curtiss—salary, July.....	35 00
July 25.	H. C. Gerling—cartage.....	22 25
July 25.	F. A. Hutchins—salary, July.....	133 33
July 25.	L. E. Stearns—salary, July.....	108 33
July 31.	Grace Whare—services .....	17 00
July 31.	Democrat Printing Co.—printing.....	59 40
Aug. 1.	W. J. Waddick—cartage.....	9 75
Aug. 9.	Tracy, Gibbs & Co.—printing.....	2 50
Aug. 14.	Emily Turner—trav. exp.....	5 10
Aug. 20.	L. E. Stearns—salary, Aug.....	108 33
Aug. 20.	L. E. Stearns—trav. exp.....	26 68
Aug. 20.	L. M. Curtiss—salary, Aug.....	35 00
Aug. 20.	F. A. Hutchins—salary, Aug.....	133 33
Sept. 7.	Grace Whare—services .....	7 00
Sept. 7.	Des Forges & Co.—books .....	42 33
Sept. 18.	K. I. MacDonald—clerical services .....	15 00
Sept. 13.	F. A. Hutchins—office supplies.....	12 25
Sept. 14.	A. C. McClurg & Co.—books.....	18 27
Sept. 18.	F. A. Hutchins—trav. exp.....	47 85
Sept. 18.	L. M. Curtiss—salary, Sept.....	35 00
Sept. 18.	Cornelia Marvin—salary, Sept.....	100 00
Sept. 18.	F. A. Hutchins—salary, Sept.....	133 33
Sept. 18.	L. E. Stearns—salary, Sept.....	108 33
Sept. 12.	L. E. Stearns—trav. exp.....	30 63

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 \$7,892 88



# APPENDIX.

FREE LIBRARIES SUPPORTED BY MUNICIPAL TAXATION.

Town.	When founded.	City control	Tax, 1900.	Other receipts.	Total receipts.	Expenditures.	Reading room.	Vols. added, 1900.	Total Vols.	Pamphlets.	Circulation, 1900.	Librarian.
Appleton.....	1896	1897	\$2,184.93		\$3,150.65	\$1,911.93	Yes.	866	5,550		46,727	Miss Agnes L. Dwight.
Arcadia.....	1899	1899	400.00	\$55.00	455.00	386.43	.....	569	569		3,311	Volunteer service.
Ashland <sup>1</sup> .....	1887				3,670.81	3,409.80	Yes.	400	3,661		22,129	Miss T. G. Mitchell.
Baraboo.....	1897	1897	1,100.00	717.11	1,817.11	1,355.40	Yes.	758	3,882		24,636	Miss Kate M. Potter.
Beafield.....	1886	1886	1,171.55		1,171.55	1,312.29	Yes.	250	1,885			J. S. Atkinson.
Beaver Dam.....	1884	1885	1,125.85		2,445.87	2,338.39	Yes.	782	8,017	1,604	27,098	Miss Hattie A. Doolittle.
Beloit.....	1850		122.50		122.50	89.50	Yes.	45	1,862		2,745	Mina Oliver.
Beloit.....	1895		2,395.37	1,023.16	3,418.53	2,620.25	Yes.	1,679	7,782		37,643	Miss M. W. Bell.
Black River Falls	1870	1871	170.00	50.00	220.00	220.00	Yes.	40	1,060		no data	Miss W. J. Gunn.
Corby.....	1898	1898	92.00						315			Mr. S. J. Shafer.
Chippewa Falls.	1894	1894	1,500.00	292.43	1,792.43	2,190.38	Yes.	797	6,105		26,907	Miss M. A. Earley.
Cumberland.....		1898			242.23	136.43	No.	251	731		3,640	Mrs. G. E. Carr.
Darlington.....	1899				6 0 00		Yes.	500	1,012			Miss Alice Chamberlain.
De Pere.....	1577 or 8	1896	475.31	1,051.24	1,525.55	1,235.72	No.	833	2,073	33	11,428	Miss Helen Matthews.
Dodgeville <sup>2</sup> .....	1900	1900				100.00	No.	100	1,000		9,625	
Durand.....	1898	1900				3,599.38	Yes.	1,443	10,619		54,234	Bertha M. Brown.
Lau Claire.....	1876	1876	3,530.00	121.58	3,651.58	3,599.38	Yes.	150	779		2,083	Mrs. Hannah Croft.
Edgerton.....	1872	1900	250.00				No.					
Elkhorn <sup>2</sup> .....	1900	1900					Yes.	1,340	2,056		7,557	Miss Clara Chapel.
Fausville.....	1899	1899	200.00	1,537.75		1,037.62	Yes.	263	263		2,718	Mrs. Eva G. Herbst.
Fairchild.....	1899	1899	40.00		203.59		No.	1,244	18,400	1,200	48,510	Miss Emma E. Rose.
Fond du Lac.....	1877	1877	2,500.00		2,654.44	2,600.00	Yes.	160	2,047	200	9,237	Miss S. C. Nichols.
Ft. Atkinson.....	1892	1892	500.00	20.96	520.25	517.83	Yes.	327	4,735	326	13,847	Mrs. Anna W. Evans.
Grand Rapids.....	1890				513.75	842.79	Yes.	723	7,178		47,107	
Green Bay.....	1888	1888	900.00		2,029.01	2,551.82	Yes.	115	567		2,566	Mabel V. Hansen.
Hartland.....	1897	1897					Yes.	151	2,634	31	5,384	Christine Goulette.
Hayward.....	1887	1887	515.81		515.81	633.04	Yes.	266	6,271			
Hillsboro.....	1898	1898	253.50		253.50	241.57	Yes.		840	11	2,602	Clara B. Carr.
Horicon.....	1899	1900	47.30	99.71	404.26	311.39	Yes.	872	17,000		44,028	Mrs. Louise L. Best
Janesville.....	1850	1884	3,000.00		1,728.14	923.78	No.	1,332	1,332	67	9,386	Miss Lillian E. Bell.
Kaukauna.....	1899	1899	1,093.88	634.26	1,333.98		No.	605	4,109		24,819	Mrs. C. P. Barnes.
Kenosha.....	1896	1899	1,200.00		187.85	137.85	No.	250	947	200	6,713	Miss Lillian F. Ramsay.
Kilbourn.....		1898	187.85		2,150.00	3,381.22	Yes.	383	15,000		38,000	Miss Annie E. Hamscom.
La Crosse.....	1888		1,500.00	650.00	187.85	137.85	No.	532	2,012		9,307	G. J. Noyes.
Lake Geneva.....	1899		264.64	378.17	642.81	475.95	.....					Mrs. F. K. Earle.
Lake Mills <sup>2</sup> .....	1899	1899		77.00	77.00	77.00	.....					Miss G. R. Hough.
Madison.....	1853	1875	3,500.00	80.00	3,580.00	2,848.83	Yes.	879	17,000		79,574	Miss Henriette vonBriesen
Manitowoc (Mar. 13)	1900		1,250.00	4,000.00	5,250.00	2,035.23			3,650		14,785	

<sup>1</sup>Supported by rentals from a building given by Mrs. E. E. Vaughn.

<sup>2</sup>Recently founded.



## FREE LIBRARIES SUPPORTED BY MUNICIPAL TAXATION.

Town.	When founded.	City control	Tax, 1900.	Other receipts.	Total receipts.	Expenditures.	Reading room.	Vols. added, 1900.	Total Vols.	Pamphlets.	Circulation, 1900.	Librarian.
Marinette							No.					Miss Julia Elliott.
Marshfield	1883	1899	\$250.00		\$250.00	\$250.00	No.	50	600			Mrs. Matrie Tiffault.
Mazomanie	1899	1899	55.00	\$78.47	133.47	133.47		75	201	175	3,600	Mrs. Amelia Tyler.
Menasha	1896	1897	1,250.00	500.00	1,750.00		Yes.	206	3,638	385	22,366	Miss Lucy L. Pleasants.
Merrill	1891	1891			490.00	663.80	Yes.	1,240	6,500		29,931	Miss Janet P. Russell.
Milwaukee	1878	1878	44,113.42	2,000.00	46,113.42	44,893.24	Yes.	9,221	118,997		449,132	George W. Peckham.
Neenah	1882	1884	912.76		930.44	1,077.20	No.	833	8,450		23,692	Miss E. L. Lachmann.
Neilsville	1895	1897	480.00		530.15	541.50	Yes.	255	1,688			Miss Pessie Kennedy.
New London	1895	1899	150.00				Yes.	75	1,200			Miss Jennie Radkey.
New Richmond <sup>3</sup>	1880	1899										Miss Grace Epley.
North Freedom	1899	1899	24.00	57.90	81.90	78.45	No.	122	133		1,694	Miss Susie Roberts.
North Milwaukee	1898	1898	301.00		301.00	200.12		236	249		1,368	Miss Anna G. Godfrey.
Oakfield	1899	1899	150.00	50.15	235.15	185.00		635	635		3,649	
Oshkosh		1895					Yes.	542	6,103			Miss Emily Turner.
Racine	1897	1897	3,138.45	166.23	3,304.68	3,249.11	No.	1,123	7,543		41,022	Miss Mary J. Calkins.
Reedsburg	1899	1899			461.31	340.02	No.	565	1,365			Hattie C. Sweland.
Rhiuelander		1898	800.00		815.92	274.01	No.	194	1,103			Erna C. Knecht.
Rice Lake	1897	1897	357.41	13.65	371.06		Yes.	280	1,493		9,453	Mrs. James Robbins.
Richland Center	1898	1898	471.76			641.88	Yes.	178	1,037		13,592	Mrs. G. H. Stewart.
Ripon	1885	1898	612.00				Yes.	275	2,775		12,420	Miss F. P. Scribner.
Shawano		1899	43.00	447.30	487.30	411.23	Yes.	601	601		2,500	Volunteer service.
Sheboygan	1897	1897	2,165.83		2,172.15	2,317.90	Yes.	855	4,483		28,445	Miss B. E. Rombauer.
South Milwaukee												
Sparta	1861	1874	659.49			300.00	Yes.	67	3,593		6,000	Miss Jennie Scouten.
Spring Green	1897	1897	50.00	20.71	70.71	70.71	Yes.	92	612			Miss Celia Hurley.
Stanley	1900	1900										
Stevens Point	1897	1897	925.00	188.72	1,113.72	1,178.05	No.	1,319	3,625		32,874	Miss M. L. Catlin.
Superior		1889	4,000.00			4,450.19	Yes.		13,721		37,701	Miss Lillian McCormick.
Thorp	1898	1898	62.80	76.61	139.41	140.60	No.	74	357		3,016	Mrs. Cynthia Poppe.
Two Rivers	1891	1892	750.00	100.00	850.00	850.00	Yes.	240	2,530		8,349	Miss Lizzie Baetz.
Virqua	1898	1898	288.73	423.24	711.97	709.63	Yes.	312	1,347	350	10,130	William Houghton.
Washburn	1881	1891	1,500.00				Yes.		1,467		9,325	Mrs. M. M. Greenwood.
Waukesha	1898	1900	630.00		600.00	800.00	Yes.	200	1,300	14		Fannie L. Ells.
Waupaca	1899	1899			800.00	800.00	Yes.		990			Miss Winifred Bailey.
Wausau	1897	1897			57.30	436.83	Yes.	71	2,856	225	14,232	Miss N. C. Silverthorn.
Wauwatosa	1886	1898	700.00	131.15	831.15	885.19	Yes.	150	3,417		8,650	Mrs. A. B. Roddis.
Whitehall		1899	800.00	167.59	967.59	861.99	Yes.	723	723		4,618	O. Rogan.
Whitewater	1884	1899	261.45	402.94	664.39	521.44	Yes.	280	3,005		17,923	Miss E. A. Hamilton.

<sup>3</sup> Destroyed by cyclone and only recently reopened.

SUPPORTED BY MUNICIPAL TAXATION.

## FREE LIBRARIES SUPPORTED WHOLLY BY INDIVIDUALS.

Town.	Popu- lation.	When founded.	Donor.	Total receipts.	Expen- ditures.	Reading room.	Vols. added 1900.	Total vols.	Circu- lation 1900.	Librarian.
Menomonie* .....	6,198	1890	Andrew Taintor .....			Yes.	436	6,841	42,409	Miss Stella Lucas. Miss Mary McLane. J. C. Webster.
Mosinee .....		1899	Jos. Dessert.....			Yes.	167	767	4,858	
Tomahawk.....	2,296	1897	W. H. Bradley.....					400		

\* City now aids.

## FREE PUBLIC LIBRARIES SUPPORTED FROM SCHOOL FUNDS.

Town.	Popu- lation.	When founded.	Tax 1900.	Other receipts	Total receipts.	Expendi- tures.	Reading room.	Vols. added 1900.	Total vols.	Circu- lation 1900.	Librarian.
Berlin .....	4,118		\$250	\$133 91	\$383 91	\$269 67	No.	119	2,079	7,085	L. M. Kraege. Mrs. E. C. Randall. Miss Katherine Smock.
Brodhead.....	1,717	1889				82 15	No.	61	1,010	1,376	
Monroe .....	3,843		1,000			830 61	Yes.	367	4,337	15,461	

### FREE ASSOCIATION LIBRARIES

Town.	When founded.	Tax, 1900.	Other receipts.	Total receipts.	Expenditures.	Reading room.	Vols. added in 1900.	Total vols.	Circulation, 1900.	Librarian.
Antigo .....	1897			\$132 71	\$121 30	.....	171	745	4,920	Miss Jennie Ogilvie.
Colfax .....	1899			50 00	43 00	.....		218	258	Mr. P. S. Bunker.
Downing .....	1899			57 00	51 00	Yes .....	30	300		Rev. W. J. James.
Mineral Point .....	1895			211 00	206 00	.....	150	2,815		Mrs. A. M. Chose.
North Greenfield .....						.....				Miss E. M. McCullough.
Oconomowoc .....	1893			330 00	330 00	.....	100	2,900	9,000	Miss Gabriella Ackley.
Phillips .....	1895					No .....	60	500		Homer Sackett.
Plover .....	1899			45 00	29 00	.....	71	71		M. F. Pierce.
Plymouth .....	1900			236 56	232 94	Yes .....				
Stoughton .....	1885	72				Yes .....	3	230		Miss A. B. Sewell.
Token Creek .....	1892					.....	15	215		Miss Mary F. Connor.
Tomah .....	1886				60 00	Yes .....	85	1,300		Mrs. Julia Rockwood.

There are similar libraries in Altoona, Blue Mounds, Eagle River, Prescott, and Rib Lake, but no reports have been received from them.

### SUBSCRIPTION LIBRARIES.

Town.	Population.	When founded.	Total receipts.	Expenditures.	Reading room.	Vols. added 1900.	Total volumes.	Circulation 1900.	Librarian.
Columbus .....	2,287						2,000	3,000	Miss Libbie Quckenden.
Dallas .....		1888					450		Mrs. J. B. Patterson.
Elkhart Lake .....		1895							P. B. Brueckenbauer.
Gilmanton .....		1865	\$ 70	\$55 88		60	1,400		Geo. Tees.
Glenbeulah .....									
Mauston .....	1,547	1898							
Mukwonago .....							400		Miss Snover.
Portage .....	5,419	1874					700		Miss Maria Austin.
Racine Junction .....	24,889	1881				50	1,486	530	Miss Ella S. Phelps.
Waupun .....	3,216	1858	263 43	213 71	No .....	276	6,539	5,314	Mrs. L. A. Hinkley.
Westfield .....		1895					600		

## LIBRARIES IN STATE INSTITUTIONS.

44

Name of Library.	City.	Volumes added in 1900.	Total vols.	Pamphlets.	Circulation, 1900.	Librarian.
State (law) .....	Madison .....	.....	34,374	.....	.....	John R. Berryman.
State Historical Society .....	Madison .....	.....	107,963	103,340	.....	Isaac S. Bradley.
State University .....	Madison .....	.....	54,000	.....	.....	Walter M. Smith.
Academy of Sciences, Arts, and Letters .....	Madison .....	.....	15,000	.....	.....	William S. Marshall.
Normal School .....	Milwaukee .....	.....	.....	.....	.....	Miss Annie H. McNeil.
Normal School .....	Oshkosh .....	930	7,944	.....	28,330	Miss Ella G. Parmele.
Normal School .....	Platteville .....	183	5,800	.....	.....	Miss B. A. Gardner.
Normal School .....	River Falls .....	328	3,210	.....	.....	Miss Caroline Silliman.
Normal School .....	Stevens Point .....	705	7,270	.....	25,138	Miss Elizabeth F. Simpson.
Normal School .....	West Superior .....	722	3,600	300	.....	Miss Mary F. Carpenter.
Normal School .....	Whitewater .....	826	6,653	.....	.....	Miss Lizzie P. Swan.
Industrial School for Boys .....	Waukesha .....	.....	.....	.....	.....	.....
Industrial School for Girls .....	Milwaukee .....	.....	.....	.....	.....	.....
Northern Hospital for Insane .....	Oshkosh .....	.....	.....	.....	.....	.....
State Hospital for Insane .....	Madison .....	.....	.....	.....	.....	.....
State Public School .....	Sparta .....	94	261	.....	.....	Miss Isabel C. Park.
School for the Deaf .....	Delavan .....	.....	.....	.....	.....	.....
School for the Blind .....	Janesville .....	.....	.....	.....	.....	.....
State Prison .....	Waupun .....	600	2,222	.....	32,600	G. H. S. Somerville.
State Reformatory .....	Green Bay .....	.....	400	.....	.....	J. E. Heg.
Veterans' Home .....	Waupaca .....	.....	.....	.....	.....	.....

WISCONSIN FREE LIBRARY COMMISSION.

## COLLEGE OR ACADEMY LIBRARIES.

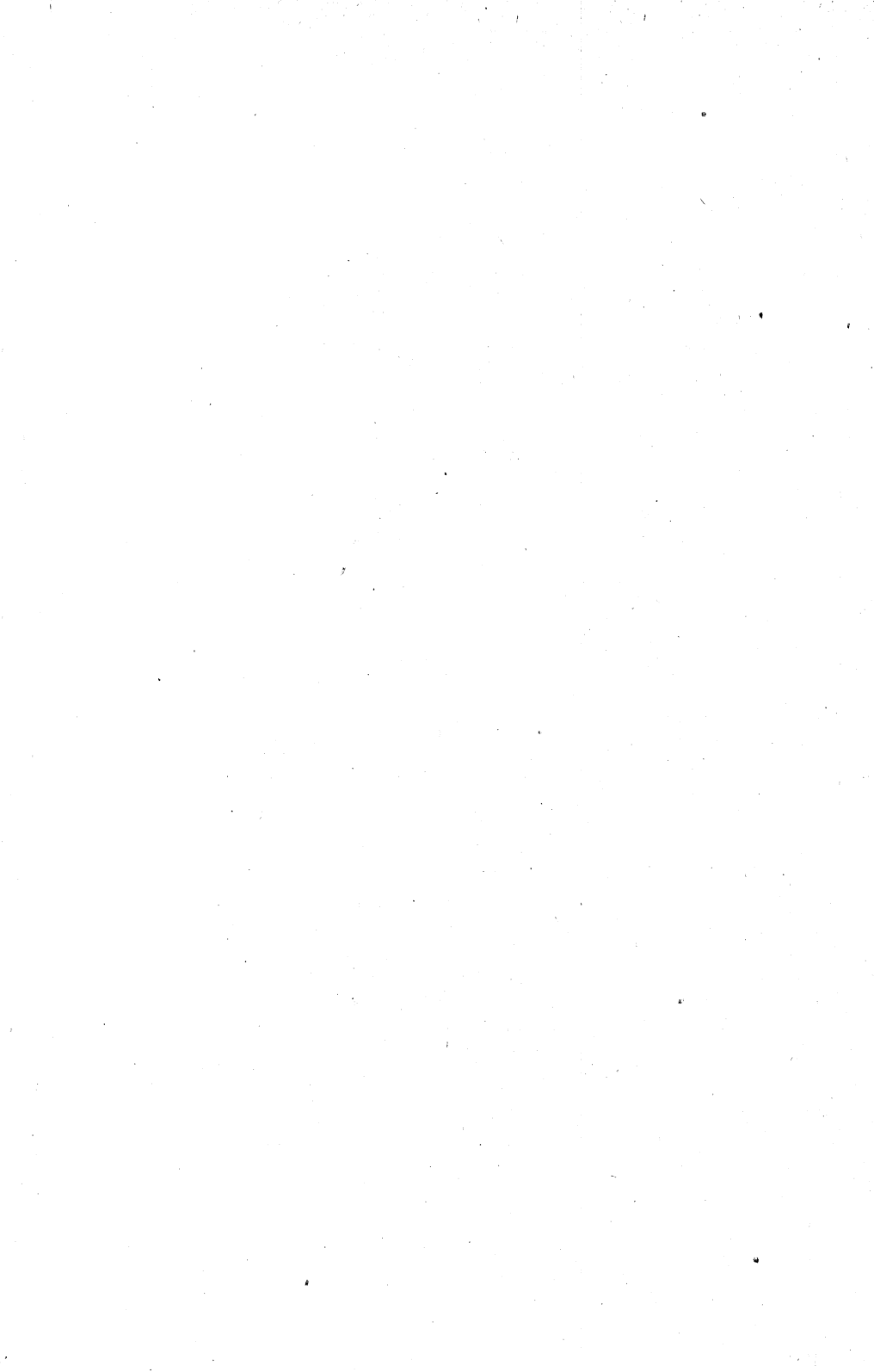
Name of Institution.	City or Village.	Number Volumes.	Librarian.
Lawrence University .....	Appleton .....	16,289	Miss Zelia A. Smith.
North Wisconsin Academy .....	Ashland .....	2,000	M. J. Fenenga.
Wayland Academy .....	Beaver Dam .....	2,000	Edwin P. Brown.
Beloit College .....	Beloit .....	26,550	Charles A. Bacon.
St. John's Military Academy .....	Delafield .....	1,500	
Mission House .....	Herman .....	6,000	J. W. Grosshuesch.
Hillside Home .....	Hillside .....	2,500	
Milton College .....	Milton .....	5,900	Edwin Shaw.
Concordia College .....	Milwaukee .....	3,540	O. Hattstaedt.
German-English Academy .....	Milwaukee .....	1,243	
Marquette College .....	Milwaukee .....	10,000	Victor Putten.
Milwaukee Academy .....	Milwaukee .....	1,200	Julius H. Pratt, Jr.
National German-American Teachers' Seminary .....	Milwaukee .....	1,503	Max Griebisch.
St. Lawrence College .....	Mt. Calvary .....	2,970	Rev. Benno Aichinger.
Nashotah House .....	Nashotah .....	10,000	
Sacred Heart College .....	Prairie du Chien .....	6,000	P. Matthias.
Racine College .....	Racine .....	10,000	Arthur Piper.
Home School .....	Racine .....	4,000	
St. Catharine's Academy .....	Racine .....	3,025	
Ripon College .....	Ripon .....	10,000	C. D. Marsh.
Catholic Normal School and Pio Nono College .....	St. Francis .....	2,832	Rev. John M. Kasel.
St. Clara Female Academy .....	Siusinawa .....	3,000	
Stoughton Academy .....	Stoughton .....	700	
Northwestern University .....	Watertown .....	620	
Sacred Heart College .....	Watertown .....	1,500	
Carroll College .....	Waukesha .....	1,000	M. E. James.

## PROPRIETARY LIBRARY.

Milwaukee Law Library .....	8,000 volumes .....	W. W. Wight, Librarian.
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NINTH BIENNIAL REPORT

OF THE

BOARD OF REGENTS

OF

NORMAL SCHOOLS

OF WISCONSIN

---

For the School Years, 1898-9, 1899-0.



MADISON, WIS.:  
DEMOCRAT PRINTING COMPANY, STATE PRINTER,  
1900



# BOARD OF REGENTS OF NORMAL SCHOOLS.

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1898—1899.

**Regents Ex-Officio.**

THE GOVERNOR OF THE STATE — EDWARD SCOFIELD.  
THE STATE SUPERINTENDENT — L. D. HARVEY.

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**Regents Appointed.**

Z. P. BEACH,	T. JENKINS, JR.,	F. A. ROSS,
J. Q. EMERY,	F. H. LORD,	A. E. THOMPSON,
J. J. FRUIT.	G. E. McDILL,	GUSTAV WOLLAEGER.

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1899—1900.

**Regent Ex-Officio.**

THE HONORABLE—THE STATE SUPERINTENDENT—L. D. HARVEY.

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**Regents Appointed.**

F. A. ROSS, West Superior,	- - - -	Term expires February 1, 1901.
(Vacancy),	- - - -	Term expires February 1, 1901.
T. JENKINS, JR., Platteville,	- - - -	Term expires February 1, 1902.
GUSTAV WOLLAEGER, Milwaukee,	- - - -	Term expires February 1, 1902.
J. Q. EMERY, Albion,	- - - -	Term expires February 1, 1903.
J. J. FRUIT, LaCrosse,	- - - -	Term expires February 1, 1903.
F. H. LORD, River Falls,	- - - -	Term expires February 1, 1904.
A. E. THOMPSON, Oshkosh,	- - - -	Term expires February 1, 1904.
Z. P. BEACH, Whitewater,	- - - -	Term expires February 1, 1905.
G. E. McDILL, Stevens Point,	- - - -	Term expires February 1, 1905.

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**Officers of the Board.**

F. A. ROSS, PRESIDENT  
J. J. FRUIT, VICE-PRESIDENT,  
S. S. ROCKWOOD, SECRETARY,  
JAMES O. DAVIDSON, TREASURER

### STANDING COMMITTEES.

- Executive*, - - - The PRESIDENT, Regents LORD and McDILL.  
*Finance*, - - - Regents FRUIT, THOMPSON and WOLLAEGER.  
*Graduating Classes*, Regents EMERY, HARVEY, THOMPSON, FRUIT, JENKINS  
and McDILL.  
*Teachers' Institutes*, Regents HARVEY, FRUIT and McDILL.  
*Inspection*, - - - Regents LORD, BEACH, EMERY and the PRESIDENT.  
*Teachers*, - - - Regents THOMPSON, HARVEY and WOLLAEGER.  
*Course of Study*  
*and Text-books*, - Regents EMERY, JENKINS and BEACH.

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### SCHOOLS IN OPERATION.

- |                           |                             |
|---------------------------|-----------------------------|
| Platteville, opened 1866. | River Falls, opened 1875.   |
| Whitewater, opened 1868.  | Milwaukee, opened 1885.     |
| Oshkosh, opened 1871.     | Stevens Point, opened 1894. |
| Superior, opened 1896.    |                             |

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**Regular Meetings first Wednesday in February and second Wednesday in July,  
at 10 o'clock a. m., at the office of the Board, room 107, Capitol.**

## PRESIDENT'S REPORT.

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*His Excellency*; EDWARD SCOFIELD, *Governor*:

SIR: I have the honor to submit herewith, in accordance with law, my report for the biennial period ending August 31, 1900:

### I. REORGANIZATION.

#### *Legislation Needed.*

On May 23rd, 1899, the Board was reorganized under the provisions of Chapter 74, Laws of 1899, which provides that the Board shall be comprised of eleven members, to-wit: The State Superintendent, ex-officio, and ten appointed Regents whose term of office shall be five years, there being five groups of two each whose terms end in successive years, no two of whom shall reside in the same congressional District, except where there is more than one school in the District. The limitation as to residence should be repealed, for good and sufficient reasons, as I believe you are fully persuaded. One eminently cogent reason lies in the fact that under the long approved custom of appointing a Regent in each of the towns where the schools are located, who by designation of the Board becomes a Resident Regent with many duties and much responsibility under the law, a preponderance of the Board is selected with more reference to business experience and fitness than to experience, training, and interest in scholastic and professional fields, and, therefore, the Governor should have the utmost freedom in selecting the members of the Board.

### II. FINANCES.

#### (a.) *General Appropriations.*

The provision of nineteen sixtieths of a mill tax on all the property of the State for the support of the Normal Schools was changed by the last Legislature to a fixed annual appropriation

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*President's Report.*

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of \$190,000, which sum was esteemed by my predecessor in his report to be sufficient to "enable the Board, by strict economy, to repay its loan (\$60,000 from the N. S. Fund) as it falls due, maintain the schools on their present basis of running expenses and yearly add to the cash balance imperatively needed at the beginning of the school year to run the schools for the first five months thereof without favors from the State Treasury."

One third of the loan has been duly repaid in accordance with the terms and substantial progress has been made in accumulating funds to run the schools the first half of the year, to-wit: Two years ago the available fund was something over \$55,000, while now it is something over \$81,000.

(b.) *Special Appropriations.*

The last Legislature made an appropriation of \$70,000 for additions to buildings, heating apparatus, and repairs to the several schools, of which only \$50,000 has yet become available and therefore the additions to the buildings at Stevens Point and Oshkosh in process of construction, must await the concession of the remainder of the appropriation for their completion. Such necessity for these additions as existed at the time the appropriation was made, has in no wise been relieved by the lapse of time, and the rise in prices of material and labor has so enhanced the cost of the improvements that even the whole of the original appropriation will not be adequate for their satisfactory completion and furnishing. Last year the demand for the completion of the heating and ventilating plant of the White-water school was so urgent that the Board was constrained to use \$5,700 of its regular income for such purpose, which sum is properly chargeable against the delayed appropriation. This season the heating and ventilating plant at the Platteville school has been completed at a cost of \$2,496.

In the detailed statement of Special Loans is still included that of \$10,000 to the Eau Claire Light Guard armory, upon which nothing has been realized since the report of my prede-

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*President's Report.*

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cessor two years since. The Attorney General makes reply to a letter of inquiry, that the "property was sold at foreclosure sale on the 16th of May, 1899, and was purchased by the State for \$7,050. The amount due on the loan on that date was \$14,042.96, leaving a deficit of \$6,992.96. There was, however, received from the receiver appointed by the Court in this action, the sum of \$255.67, which left the balance due the state \$6,737.29, for which sum a deficiency judgment was entered on May 23rd, 1899."

*Appropriation Needed.*

This statement shows that the General Fund of the State is properly chargeable with the original loan of \$10,000 and the accrued interest in the sum of \$4,042.96. It seems clear that appropriations should be made by the Legislature to the Normal School Fund and Normal School Fund Income of these respective amounts, so that this educational trust fund may not suffer loss.

*Statutes Should be Amended.*

From August 31, 1896, to July 31, 1900, inclusive, the Normal School Fund has been increased to the amount of \$9,797.96 from interest on deposits in banks, the Treasurer following the specific directions of Section 160f, R. S., in spite of Section 250, R. S., which clearly specifies what shall constitute the two funds, — Normal School Fund and Normal School Fund Income, — and an official ruling recently filed in the office of the Board by the Attorney General sustains the action of the Treasurer on the ground that "It is a general principle of construction that, where a general statute and a special statute conflict, the special statute is to govern." It is obvious that the intent of the general and earlier statute defining the Normal School Fund Income is in part defeated by the later specific statute, and, it would seem, without reason or consistency. There certainly can be no good reason why interest earned by deposit in a bank should accrue to the Capital Fund more than

*President's Report.*

that interest earned by Special Loan or Bond purchase should do the same, which would wholly defeat the intent to establish a System of Normal Schools. Certainly an amendment to the Revised Statutes is needed in this behalf.

*(c.) Principal Fund.*

There has been no change in the management of this Fund during the past two years, it being under the control of the Commissioners of Public Lands, the State Treasurer being the custodian, by whose courtesy a report of all changes in the same each month is made to the Secretary of the Board. From the Secretary's books I am enabled to make the following statements:

The total Fund August 31, 1900, was \$1,961,404.31, of which \$222,143.25 was cash and the sum of \$1,739,261.06 was in bonds and loans as follows:

1. Bonds and Certificates at 7 per cent. ....	\$535,700 00
2. Land Contracts and Individual Loans — old law 7 per cent. ....	6,879 50
3. Bonds at 6 per cent. ....	9,000 00
4. Bonds at 5½ per cent. ....	1,500 00
5. Bonds at 5 per cent. ....	144,500 00
6. Bonds at 4½ per cent. ....	89,000 00
7. Bonds at 4 per cent. ....	194,000 00
8. Special Loans at 5 per cent. ....	80,913 98
9. Special Loans at 4½ per cent. ....	60,000 00
10. Special Loans at 4¼ per cent. ....	44,000 00
11. Special Loans at 4 per cent. ....	195,020 00
12. Special Loans at 3½ per cent. ....	332,933 28
13. School District Loans at 4 per cent. ....	5,814 30
14. Loan Board Regents Normal Schools 4 per cent. ....	40,000 00
Total .....	\$1,739,261 06

Four years ago this Fund was earning at the rate of \$95,711.03, and two years ago at the rate of \$92,518.54, while now the rate is \$85,444.81 per year, a decline in four years of over ten thousand dollars, which is obviously a serious impairment of the income for support of the schools. The cause is well known and lies in the enforced refunding at lower rates of interest, and is at present aggravated by the difficulty which attends keeping all the money out even at the minimum rate of 3½ per cent. These conditions greatly emphasize what has been said earlier in this report concerning the interest on deposits in banks.



*President's Report.*

The following is a detailed list of the securities summarized above, to-wit:

CERTIFICATES.

Certificates of indebtedness..... \$515,700

BONDS.

1.	Ashland City Coupon .....	\$25,000
2.	Ashland City Funding .....	22,000
3.	Ashland City Refunding .....	20,000
4.	Antigo City, — City Hall .....	10,000
5.	Antigo City School .....	8,000
6.	Beaver Dam City .....	10,000
7.	Columbus City, — City Hall .....	11,000
8.	Chippewa Falls City, — Coupon .....	5,000
9.	Durand City .....	3,000
10.	Eau Claire City Bridge Coupon .....	10,000
11.	Edgerton City School Coupon .....	8,000
12.	Genwood Town Water Works Coupon .....	9,000
13.	Hudson City Coupon .....	10,000
14.	Hudson City Water Works .....	24,000
15.	Joint School District No. 5, Elroy City, etc .....	1,500
16.	La Crosse City Coupon .....	10,000
17.	Manitowoc County Refunding .....	70,000
18.	Milwaukee Water Works .....	57,000
19.	Milwaukee City School Coupon .....	30,000
20.	Madison City Water Works Extension .....	10,000
21.	Madison City Permanent Street Improvement .....	15,000
22.	Milwaukee City Registered Water .....	20,000
23.	Oshkosh City Hall Coupon .....	14,000
24.	Portage County Coupon Refunding .....	24,000
25.	Richland Center City, — Water Works .....	2,000
26.	Sheboygan County — School Dist. No. 8 .....	6,500
27.	Vernon County Insane Asylum .....	8,000
28.	Vernon County Poor House .....	15,000
	Total .....	\$458,000

SPECIAL LOANS.

1.	Bloomer village .....	\$3,000 00
2.	Bayfield town .....	3,000 00
3.	Clintonville city .....	2,800 00
4.	Cleveland town .....	665 00
5.	Chippewa county .....	12,526 32
6.	Cumberland city .....	3,540 00
7.	Door county .....	57,000 00
8.	Dunn county .....	30,000 00
9.	Eau Claire county .....	33,333 28
10.	Eau Claire Light Guard armory .....	10,000 00
11.	Fond du Lac city .....	16,000 00
12.	Finley, Town of .....	1,500 00
13.	Grand Rapids city, Board of Education .....	5,700 00
14.	Historical Library Commission .....	150,100 00
15.	Hammond village, St. Croix county .....	994 00
16.	Jackson county .....	12,000 00
17.	Kewaunee city .....	19,000 00
18.	Light Horse Squadron, Milwaukee .....	30,000 00
19.	Madison city .....	15,000 00
20.	Mineral Point city .....	7,000 00
21.	Menomonie city .....	42,000 00
22.	Madison city Board of Education .....	20,000 00
23.	Minocqua town .....	7,500 00
24.	Mosinee town, Marathon county .....	300 00
25.	Normal School Fund Income .....	40,000 00
26.	New London city .....	11,000 00
27.	Prairie du Chien city .....	10,000 00
28.	Pelican town .....	2,520 00

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*President's Report.*


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29. Phillips city .....	\$4,666 66
30. Rhinelander city .....	1,000 00
31. Remington town .....	3,000 00
32. Richmond town, Shawano county .....	4,000 00
33. Sawyer county .....	45,000 00
34. Schoepke town .....	1,350 00
35. Shawano city .....	1,920 00
36. Seneca town, Wood county .....	1,200 00
37. Spooner town .....	3,100 00
38. Vilas county .....	35,000 00
39. Washburn county .....	33,250 00
40. Winnebago county .....	44,000 00
41. Washburn county .....	5,000 00
42. Washburn county .....	2,500 00
43. White Fish Bay village .....	3,600 00
44. Waupaca city .....	5,500 00
45. Wood town .....	2,000 00
46. Withie town .....	400 00
47. West Kewaunee town .....	10,000 00
Total .....	\$752,867 26

## SCHOOL DISTRICT LOANS.

1. Lewis No. 5, Clark county .....	\$114 30
2. Howard No. 2, Brown county .....	700 00
3. Waterloo No. 1, Jefferson county .....	5,000 00
Total .....	\$5,814 30

## OTHER LOANS.

Individual Loans and Land Contracts — old law .....	\$6,879 50
Grand total .....	\$1,739,261 06

(d.) *Fund Income.*

This fund is derived from the following sources, to-wit: — (1) Interest, (2) Appropriations, (3) Tuition, Book Rents, etc., (4) Sales of all kinds, (5) Insurance (when losses occur), and (6) Gifts, and is placed by law wholly under the control of the Board for the sole purpose of establishing and maintaining Normal Schools and Teachers' Institutes. My predecessors have established the custom of reporting the expenditures made from the fund during the two preceding school years, ending in each case with the disbursements made at the annual meeting of the Board, in July, keeping the costs of the different schools separate. I follow the custom, believing that the spirit of the law requiring this report is not infringed and that any possible purpose of the report is far better subserved thereby.

During the biennial period from July 15, 1898, to July 3, 1900, inclusive, as shown by the tables of classified expenditures

*President's Report.*

and detailed lists of vouchers constituting Appendix A, hereto annexed, there was disbursed a total of \$606,248.60, being \$56,055.53 less than during the preceding biennium. Nearly the whole of this difference lies in the amounts spent for buildings, to-wit: — \$54,209.31. However, this isolated fact is not deemed particularly significant, and so I present a comparative table of classified expenditures for the two bienniums as follows, to-wit:

Classification	1896-8.	1898-0.
Apparatus and Cabinet.....	\$11,775 05	\$5,696 43
Building.....	83,899 41	29,690 10
Fuel and Light.....	24,110 26	26,394 30
Furniture.....	15,560 90	6,523 50
Miscellaneous.....	22,434 49	15,697 57
Printing.....	3,920 55	3,582 19
Reference Book.....	9,122 83	7,233 56
Repairs.....	59,278 38	21,455 35
Salaries.....	385,734 37	409,456 70
Stationery.....	6,058 48	5,575 08
Text Books.....	17,169 55	11,896 45
Water Rent.....	3,588 73	3,222 47
Administration.....	12,251 45	13,931 48

It will be seen that the increase in salaries is \$23,722.33, that is \$11,861.16 per annum, that is about \$1,600 on the average at each school, which has already been explained.

The increase of \$1,680.03 in the cost of administration is far more than accounted for by the amount paid for transportation since the passage of the anti-pass law, the Board having purchased \$3,050 worth of mileage, and collected \$355.93 in refunds, leaving the cost as \$2,694.07, which reduces the cost of administration to \$11,237.41.

It must not be supposed that \$2,694.07 is the true cost of transportation for the period herein reported upon, for the unused mileage in the hands of the members and refunds in process of collection would considerably reduce the sum.

The following is the biennial report of the Treasurer of the Board:

*President's Report.*

## TREASURER'S REPORT.

Madison, Wis., Aug. 31, 1900.

	Dr.	Cr.
<b>NORMAL SCHOOL FUND INCOME:</b>		
Balance on hand July 1, 1898 .....	\$4,713 37	
To income from investments .....	235,915 04	
Interest from banks .....	274 69	
Tuition, rents, etc. ....	13,611 96	
State tax .....	391,468 96	
Appropriation Teachers' Institutes .....	5,692 8	
Appropriation Normal Schcol. ....	10,000 00	
Refunds .....	170 90	
By disbursements, refunds .....		\$142 49
By disbursements, premium on bonds .....		2,521 40
Transfers, Treasurer of Board .....		644,570 56
Balance .....		14,613 28
	<u>\$361,847 73</u>	<u>\$661,847 73</u>
<b>Treasurer Board of Normal Regents:</b>		
Balance on hand July 1, 1898 .....	\$11,583 27	
To transfers from Income Fund .....	644,570 56	
Appropriation Teachers' Institute .....	3,980 32	
Part appropriation Ch. 202, Laws 1899 .....	25,000 00	
Refunds, mileage, etc. ....	358 43	
Disbursements, Secy's warrants .....		\$614,908 77
Balance on hand Aug. 31, 1900 .....		70,581 81
	<u>\$685,490 58</u>	<u>\$685,490 58</u>
<b>Total balance on hand Aug. 31, 1900:</b>		
In Income Fund .....	\$14,613 28	
Treasurer Board of Regent's hands .....	70,581 81	
		<u>\$85,195 09</u>

J. O. DAVIDSON,

*Ex-officio Treasurer Board of Regents of Normal Schools.*

## III. LIBRARIES.

It has always been the policy of the Board to maintain in each school two separate libraries, one of Text-Books and one of Reference Books, both being founded by appropriations, the former being supported afterwards by rentals, and the latter enlarged as needs arose by repeated appropriations. Through a steady process of evolution we have arrived at a stage of development that requires a stenographic clerk for the President, which clerk takes charge of the Text-Book library, and a specially

*President's Report.*

trained librarian in charge of the Reference Library, who sometimes requires an assistant and who is a member of the Faculty and teaches library reading, thereby making the Reference Library scarcely less used and useful than the Text-Book Library itself. This progress is accounted one of the most helpful features in the evolution of the work of the schools.

The following tables show the receipts and disbursements on this account for the past two years.

*Receipts.*

Schools.	Items.	1898-9.	1899-0.	Total.
Milwaukee .....	Book Reviews.....	\$1,213 15	\$1,157 89	\$2,371 04
Oshkosh .....	Book Reviews.....	2,334 36	2,230 74	4,565 10
Platteville.....	Book Reviews.....	969 30	964 98	1,934 28
River Falls.....	Book Reviews.....	802 34	729 42	1,531 76
Stevens Point.....	Book Reviews.....	1,676 30	1,570 54	3,246 84
Superior.....	Book Reviews.....	919 29	1,034 79	1,954 08
Whitewater.....	Book Reviews.....	1,229 25	1,291 34	2,520 59
	Totals.....	\$9,143 99	\$8,999 70	\$18,143 69

*Disbursements.*

Schools.	Books 1898-9.		Books 1899-0.		Totals.
	Text.	Reference.	Text.	Reference.	
Milwaukee .....	\$593 25	\$1,039 11	\$149 11	\$811 26	\$2,592 73
Oshkosh.....	1,883 09	921 65	1,500 09	863 63	5,148 46
Platteville.....	756 32	100 08	627 75	98 21	1,485 36
River Falls.....	688 86	195 92	400 89	160 43	1,446 10
Stevens Point.....	1,124 17	566 12	548 62	764 81	3,003 72
Superior.....	408 51	317 59	825 30	577 72	2,129 12
Whitewater.....	894 32	306 00	1,145 69	388 41	2,734 42
Totals.....	\$6,351 52	\$3,446 47	\$5,397 45	\$3,664 47	\$18,859 91

The excess of disbursements over receipts is accounted for by the expenditure of accumulated earnings in some cases and of special appropriations in other cases. Generally the libraries are self-sustaining, but when needs are obvious beyond incomes they are satisfied from the general fund of the schools. There is now an unexpended balance to the credit of the various libraries in the aggregate of \$1,927.65.

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*President's Report.*

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## IV. STUDENTS.

By comparing the following tables with similar ones published two years ago it will be seen that so far as total enrollment is concerned the schools have not grown, the conditions then existing precluding expansion without the enlargement of buildings, which matter is discussed elsewhere in this report. However, without increasing total numbers, the following tables show some marked features of growth in directions greatly to the credit of the system.

The progress made in securing a better prepared body of students resulting from the policy of admitting High School Graduates to advanced standing in the schools, with courses of study specially devised for them is shown by the fact that during the past year a trifle less than 38 per cent. of all the pupils classed as Normal, were graduates of High Schools, that is to say 993 out of 2,619 total enrollment. It is also shown by the fact that while the six schools outside Milwaukee have graduated from the Elementary Course 3 less than during the previous biennial period, they have graduated 104 more from the Advanced Course, which is an increase of over 27 per cent. The falling off in number (33) of graduates from the Milwaukee School during the last biennial period is due to a deliberate policy of restriction, it being necessary to reduce the attendance to the capacity of the building, the school having been overcrowded previously.

It must be seen that in the foregoing statements lies a fair explanation of a goodly part of the increased cost of instruction which appears in the schedules of classified expenditures which are given in Appendix A.

*President's Report.*

*Total enrollment of students.*

Schools.	Normal.	Preparatory.	Gram-mar.	Inter-mediate.	Primary and kindergarten.	Special.	Totals.
<b>1898-9.</b>							
Milwaukee.....	335	*	74	85	95	.....	589
Oshkosh.....	674	†	112	62	103	31	982
Platteville.....	322	12	77	29	40	49	529
River Falls.....	269	.....	62	41	114	5	491
Stevens Point..	403	36	60	58	50	8	615
Superior.....	262	31	55	70	56	.....	474
Whitewater.....	323	37	38	55	73	3	529
Totals.....	2,588	116	478	400	531	96	4,209
<b>1899-0.</b>							
Milwaukee.....	326	*	72	91	89	.....	578
Oshkosh.....	676	†	120	62	118	25	1,001
Platteville.....	309	13	38	26	50	18	454
River Falls.....	301	3	54	38	116	1	513
Stevens Point..	377	10	69	63	45	5	589
Superior.....	312	9	58	62	54	.....	495
Whitewater.....	318	21	47	51	66	2	505
Totals.....	2,619	56	453	393	538	51	4,115

\* No Preparatory Class. Has no Elementary Course and admits no pupils with preparation less than a Four Years High School Course.

† Preparatory work done in allied academy.

‡ Has control of Primary and Intermediate department of Third ward public school in which were enrolled 75 pupils during 1899-0, furnishes a Critic teacher, and uses the school as part of Model School.

*Number of graduates in two years.*

Year.....	1898-9.		1899-0.		Totals.		
	Elementary.	Advanced.	Elementary.	Advanced.	Elementary.	Advanced.	Both courses.
Milwaukee.....	*	129	.....	82	.....	211	211
Oshkosh.....	73	83	58	70	131	153	284
Platteville.....	9	45	11	70	20	115	135
River Falls.....	24	8	25	26	49	34	83
Stevens Point..	45	38	42	26	87	64	151
Superior.....	5	14	12	33	17	47	64
Whitewater.....	41	26	41	42	82	68	150
Totals.....	197	343	189	349	386	692	1,078

\* School has no Elementary Course.

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*President's Report.*


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*Total number of graduates.*

SCHOOLS.	When opened.	COURSE.		Both.
		Elementary.	Advanced.	
Milwaukee.....	1885	.....	854	854
Oshkosh.....	1871	538	489	1,027
Platteville.....	1866	154	650	804
River Falls.....	1875	149	287	436
Stevens Point.....	1894	181	112	293
Superior.....	1896	33	66	99
Whitewater.....	1868	529	414	943
Totals.....	.....	1,584	2,872	4,456

## V. COURSES AND TEACHING.

The foregoing seems to me a sufficiently detailed statement of the material and objective side of the work required of this board; but there is another side, the scholastic and professional, which demands and deserves attention. Some discussion of these interests will be found in the Special Reports of the Presidents of the schools which constitute Appendix B; but the standpoint of the President of the Board is so different from that of the president of any school, that it seems desirable to present some account of the action and aims of the Board along these lines.

In the recent past it was found that, in spite of the fact that the system had grown up under the management of a single continuous Board, the several schools differed materially in the *curricula* and the body and methods of instruction not only, but in their educational philosophy. While the diplomas and certificates issued were the same in all the schools and possessed the same force and value under the law, it was very clear that they did not stand for anything like identical acquirements, and it was seriously doubted that they stood for equivalent values, however it might not be questioned that they stood for certain minimum qualifications fully complying with the law.



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*President's Report.*

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The old dictum that "the master is the school" was once more shown to be true. The individual and diverse characters of the Presidents was more in evidence than the unifying and systematizing influence of the Board. Diverse interpretations had made prescribed Courses of study hardly recognizable as they appeared in the several catalogues of the schools, and in some cases the daily program was so overloaded as to add a half year's work to a four year's course.

In July of last year, the Committee on Course of Study and Text-Books, by direction of the Board, held a two day's session with the Presidents of the schools and thoroughly revised the courses of Study, adapted them to the various needs of High School Graduates as well as other pupils, and fixed maximum and minimum limits to all courses as to time, and specifically named all the branches to be taught.

During the early part of the last school year a Special Committee made a thorough examination of the Professional work in the several schools, and it was found that much diversity prevails as to details of instruction and not a little as to method and underlying philosophy. That this should be the case does not seem compatible with the theory of a thoroughly organized system of Normal schools under a single management. To correct this, as well as to attain other important aims, the Board contemplates holding a week's Institute to be attended by all the teachers in the seven schools, the final outcome of which shall be a complete syllabus of all the branches in the adopted courses of study prepared by the best talent at the command of the Board.

I am aware of the great difficulties to be encountered, but the benefits to be derived from such a labor successfully performed are so eminently desirable that there should be no hesitation in attempting the task. In this matter the Board contemplates securing practical identity as to philosophy and subjects, and such equality as to scholarship and training as may be possible without imposing hurtful restraints upon individuals. While I

*President's Report.*

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am fully persuaded that the individuality of teacher and pupils should always be kept in mind, I am quite as firmly convinced that idiosyncracies and fads should not be permitted to mar the symmetry of a system, needlessly or hurtfully diversify its results, or inflict unnecessary hardships upon pupils.

Dated August 31, 1900.

Respectfully submitted,

FRANK A. ROSS,

*President.*

*List of Vouchers Paid, 1898-99.*

## APPENDIX A.

## 1898-1899.

The following is a complete list of the vouchers paid by authority of the Board from July 27, 1898, to July 12, 1899, inclusive, followed by a classified schedule:

No.	Date.	Name.	Amount.
253	July 27	Chas. Pittelkow, pay roll, Milwaukee.....	\$200 00
254	27	Chas. Pittelkow, misc., Milwaukee.....	15 00
255	27	J. H. Harris, misc., Milwaukee.....	25 00
256	27	G. E. McDill, pay roll, Stevens Point.....	102 50
257	27	C. I. Banker, repairs, Stevens Point.....	23 50
258	27	Z. P. Beach, pay roll, Whitewater.....	112 50
259	27	Coe & Roethe, misc., ptg. sta., Whitewater.....	45 35
260	27	A. E. Thompson, pay roll, Oshkosh.....	220 00
261	27	L. W. Briggs, misc., Oshkosh.....	9 60
262	27	Lehigh Valley Coal Co., fuel, Superior.....	265 39
263	27	Evening Telegram Co., ptg., Superior.....	32 50
264	27	T. Jenkins, Jr., pay roll, Platteville.....	100 00
265	27	T. Jenkins, Jr., repairs, Platteville.....	10 00
266	27	F. H. Lord, pay roll, River Falls.....	111 25
267	27	Mrs. L. H. Mead, misc., River Falls.....	8 14
268	27	Wm. F. Sell, expenses, salary, Institute.....	49 46
269	27	E. W. Walker, expenses, salary, Institute.....	154 31
270	27	Z. P. Beach, expenses, salary, Board.....	5 50
271	27	Sewell A. Peterson, gen. expenses, Board.....	5,000 00
272	27	Sewell A. Peterson, gen. expenses, Board.....	2,200 00
273	27	Edna M. Greenfield, salary, clerk, Board.....	45 00
274	27	S. S. Rockwood, salary, Secretary, Board.....	150 00
275	27	Bonnett, Michie & Co., building, River Falls.....	2,500 00
276	Aug. 31	L. D. Harvey, expenses, salary, Institute.....	97 95
277	31	J. H. Derse, expenses, salary, Institute.....	100 00
278	31	Geo. C. Shotts, expenses, salary, Institute.....	69 68
279	31	Geo. N. Foster, expenses, salary, Institute.....	32 50
280	31	W. J. Brier, expenses, salary, Institute.....	145 34
281	31	C. W. Smith, expenses, salary, Institute.....	44 61
282	31	A. J. Hutton, expenses, salary, Institute.....	202 27
283	31	W. J. Pollock, expenses, salary, Institute.....	75 30
284	31	Carrie J. Smith, expenses, salary, Institute.....	86 54
285	31	H. L. Terry, expenses, salary, Institute.....	181 52
286	31	G. L. Bowman, expenses, salary, Institute.....	63 35
287	31	E. W. Walker, expenses, salary, Institute.....	71 40
288	31	Lucy S. Norton, expenses, salary, Institute.....	44 43
289	31	A. H. Sanford, expenses, salary, Institute.....	50 75
290	31	W. L. Morrison, expenses, salary, Institute.....	60 11
291	31	Wm. E. Anderson, expenses, salary, Institute.....	91 63
292	31	Duncan McGregor, expenses, salary, Institute.....	110 33
293	31	Albert Hardy, expenses, salary, Institute.....	66 30
294	31	F. W. Meisnest, expenses, salary, Institute.....	128 26
295	31	W. J. Pollock, expenses, salary, Institute.....	64 60
296	31	E. C. Wiswell, expenses, salary, Institute.....	57 59

*List of Vouchers Paid, 1898-99.*

297	31	Allen B. West, expenses, salary, Institute.....	27	93
298	31	Florence C. Fox expenses, salary, Institute.....	27	25
299	31	Mary D. Bradford, expenses, salary, Institute.....	51	59
300	31	H. A. Adrian, expenses, salary, Institute.....	53	27
301	31	W. C. Hewitt, expenses, salary, Institute.....	296	23
302	31	J. H. Billé, expenses, salary, Institute.....	27	50
303	31	Geo. C. Shutts, expenses, salary, Institute.....	147	23
304	31	Taylor Frye, expenses, salary, Institute.....	68	23
305	31	W. L. Morrison, expenses, salary, Institute.....	104	62
306	31	J. E. Riordan, expenses, salary, Institute.....	48	39
307	31	Wm. E. Anderson, expenses, salary, Institute.....	50	09
308	31	Wm. F. Sell, expenses, salary, Institute.....	50	96
309	31	A. R. Jolley, expenses, salary, Institute.....	46	50
310	31	Geo. Beck, expenses, salary, Institute.....	57	58
311	31	Albert Hardy, expenses, salary, Institute.....	123	86
312	31	W. J. Brier, expenses, salary, Institute.....	288	55
313	31	A. E. Brainerd, expenses, salary, Institute.....	37	50
314	31	A. P. Hollis, expenses, salary, Institute.....	29	60
315	31	C. E. Patzer, expenses, salary, Institute.....	90	56
316	31	E. W. Walker, expenses, salary, Institute.....	130	70
317	31	W. H. Cheever, expenses, salary, Institute.....	227	53
318	31	F. S. Hyer, expenses, salary, Institute.....	12	00
319	31	N. A. Harvey, expenses, salary, Institute.....	66	45
320	31	N. A. Harvey, expenses, salary, Institute.....	50	00
321	31	A. A. Upham, expenses, salary, Institute.....	106	56
322	31	Laura Peckham, expenses, salary, Institute.....	50	82
323	31	W. H. Schulz, expenses, salary, Institute.....	57	85
324	31	J. I. Jegl, expenses, salary, Institute.....	118	85
325	31	W. S. Watson, expenses, salary, Institute.....	55	52
326	31	G. E. McDill pay roll, Stevens Point.....	175	84
327	31	Sylvanus Ames, furniture, Stevens Point.....	64	00
328	31	Eggleston & Redfield, repairs, Stevens Point.....	154	50
329	31	Manitowoc Seating Co., furniture, Stevens Point.....	113	80
330	31	E. B. Grant Estate, furniture, Stevens Point.....	25	30
331	31	Burdick, Armitage & Allen, printing, Stevens Point	211	35
332	31	S. S. Rockwood, Secretary's expenses, Board.....	20	23
333	31	S. S. Rockwood, salary, Secretary, Board.....	150	00
334	31	Edna M. Greenfield, salary, clerk, Board.....	45	00
335	31	Frank A. Ross, pay roll (July), Superior.....	155	00
336	31	Frank A. Ross, pay roll (Aug.), Superior.....	155	00
337	31	Chas. Brothers Co., repairs, Superior.....	125	00
338	31	Supt. Water, Light & Power Co., water rent, Superior	4	80
339	31	F. H. Lord, pay roll, River Falls.....	89	00
340	31	Bonnett, Michie & Co., building, River Falls.....	4,000	00
341	31	Tunstead Heating Co., building, River Falls.....	500	00
342	31	E. D. Beeghley, building, River Falls.....	115	20
343	31	James Dunn, building, River Falls.....	250	00
344	31	A. E. Thompson, pay roll, Oshkosh.....	150	00
345	31	M. McMahon, misc., Oshkosh.....	24	50
346	31	P. L. Marden & Bro., repairs, Oshkosh.....	180	00
347	31	P. L. Marden & Bro., repairs, Oshkosh.....	8	25
348	31	Oshkosh Decorating Co., repairs, Oshkosh.....	213	36
349	31	E. E. Stevens, misc., Oshkosh.....	50	00
350	31	W. M. Castle, printing, Oshkosh.....	236	40
351	31	Chas. Pittelkow, pay roll, Milwaukee.....	200	00
352	31	Goodyear Rubber Co., furniture, Milwaukee.....	21	13
353	31	Chas. L. Busse, repairs, Milwaukee.....	340	20
354	31	Johnson Elec. Service Co., repairs, Milwaukee.....	21	58
355	31	Buel T. Davis, misc., Milwaukee.....	11	84
356	31	Stark Bros. Co., furniture, Milwaukee.....	78	89
357	31	Bruss-Ritter Co., repairs, Milwaukee.....	230	00
358	31	The R. P. Elmore Co., fuel, Milwaukee.....	130	01
359	31	T. Jenkins, Jr., pay roll, Platteville.....	100	00
360	31	Wm. Bachelor, repairs, Platteville.....	32	00
361	31	Sylvanus Ames, furniture, Whitewater.....	58	70
362	31	Z. P. Beach, pay roll, Whitewater.....	130	00
363	31	Manitowoc Seating Co., furniture, Whitewater.....	80	17
364	31	A. L. Williams, repairs, Whitewater.....	111	80
365	31	H. Moores Co., repairs, Whitewater.....	98	00
366	31	O. Smothers, repairs, Whitewater.....	100	45
367	31	Whitewater Electric Light Co., repairs, Whitewater..	140	25
368	31	Whitewater Lumber Co., fuel, Whitewater.....	1,459	79
369	31	T. L. Goodhue, repairs, Whitewater.....	78	26
370	Sept. 20	Tunstead Heating Co., building, River Falls.....	2,356	00
371	28	Grace Darling Madden, expenses, salary, Institute...	55	50

*List of Vouchers Paid, 1898-99.*

372	28	W. H. Cheever, expenses, salary, Institute.....	135 81
373	28	Albert Hardy, expenses, salary, Institute.....	44 85
374	28	E. W. Walker, expenses, salary, Institute.....	118 58
375	28	Frank M. Jack, expenses, salary, Institute.....	88 20
376	28	F. W. Meisnest, expenses, salary, Institute.....	53 61
377	28	J. W. Livingston, expenses, salary, Institute.....	234 21
378	28	W. H. Schulz, expenses, salary, Institute.....	47 62
379	28	A. J. Hutton, expenses, salary, Institute.....	76 20
380	28	A. P. Hollis, expenses, salary, Institute.....	40 70
381	28	M. H. Jackson, expenses, salary, Institute.....	55 31
382	28	M. H. Jackson, expenses, salary, Institute.....	53 06
383	28	H. A. Adrian, expenses, salary, Institute.....	61 08
384	28	C. O. Marsh, expenses, salary, Institute.....	30 00
385	28	J. F. Sims, expenses, salary, Institute.....	160 08
386	28	W. E. Anderson, expenses, salary, Institute.....	31 65
387	28	A. H. Sage, expenses, salary, Institute.....	63 45
388	28	A. H. Sage, expenses, salary, Institute.....	60 50
389	28	A. H. Sage, expenses, salary, Institute.....	65 74
390	28	A. H. Sage, expenses, salary, Institute.....	58 80
391	28	H. A. Adrian, expenses, salary, Institute.....	60 06
392	28	C. P. Cary, expenses, salary, Institute.....	95 32
393	28	Chas. Pittelkow, pay roll, Milwaukee.....	3,429 00
394	28	M. Hilty Lumber Co., repairs, Milwaukee.....	61 23
395	28	Frank A. Ross, pay roll, Superior.....	2,094 00
396	28	I. C. McNeill, misc., Superior.....	33 68
397	28	Bingham Bros., repairs, Superior.....	85 00
398	28	Webster Mfg. Co., furniture, Superior.....	177 65
399	28	Superior Water, Light & Power Co., light, water rent, Superior.....	16 59
400	28	G. E. McDill, pay roll, Stevens Point.....	2,795 50
401	28	A. C. McClurg & Co., reference books, Stevens Point.....	70 72
402	28	G. E. McDill, furniture, Stevens Point.....	25 34
403	28	T. Jenkins, Jr., pay roll, Platteville.....	2,676 00
404	28	John McArthur, misc., Platteville.....	127 50
405	28	R. T. Verran, repairs, Platteville.....	75 00
406	28	R. T. Verran, repairs, Platteville.....	75 00
407	28	J. H. Evans, misc., Platteville.....	127 50
408	28	W. H. Ellis, misc., Platteville.....	127 50
409	28	R. M. Lamp, misc., Platteville.....	127 50
410	28	J. A. Henry, repairs, Platteville.....	174 70
411	28	J. A. Henry, repairs, Platteville.....	68 00
412	28	Freeman H. Lord, pay roll, River Falls.....	2,100 00
413	28	Bonnett, Michie & Co., building, River Falls.....	2,689 81
414	28	Bonnett, Michie & Co., building, River Falls.....	2,625 44
415	28	Webster Mfg. Co., furniture, River Falls.....	158 94
416	28	The Buckstaff Edwards Co., furniture, River Falls..	293 55
417	28	Joseph M. Smith, misc., River Falls.....	220 50
418	28	O. W. Newcomb & Co., furniture, repairs, River Falls	415 68
419	28	E. D. Beeghley & Co., building, River Falls.....	477 78
420	28	Stillwater Mfg. Co., furniture, River Falls.....	168 00
421	28	American Foundry & Furnace Co., b'd'g, River Falls	684 75
422	28	A. J. Morgan, misc., River Falls.....	220 50
423	28	A. T. Carroll, misc., River Falls.....	220 50
424	28	W. H. Sanderson, misc., River Falls.....	220 50
425	28	C. N. Wiger, misc., River Falls.....	220 50
426	28	F. M. Ulrich, building, River Falls.....	10 86
427	28	C. N. Wiger, misc., River Falls.....	14 68
428	28	G. A. Rasmussen, furniture, River Falls.....	61 50
429	28	Stark Bros. Co., furniture, River Falls.....	127 75
430	28	C. F. Winter, furniture, River Falls.....	47 40
431	28	W. S. Ensign, building, River Falls.....	29 56
432	28	Freeman H. Lord, furniture, misc., River Falls.....	171 27
433	28	A. E. Thompson, pay roll, Oshkosh.....	3,895 93
434	28	Potter & Sprague, misc., Oshkosh.....	8 25
435	28	A. H. Allen, misc., Oshkosh.....	4 25
436	28	Oshkosh Gas Light Co., light, Oshkosh.....	35 00
437	28	The Buckstaff Edwards Co., furniture, Oshkosh.....	133 33
438	28	Stark Bros. Co., furniture, Oshkosh.....	45 80
439	28	F. M. Hasbrouck, repairs, Oshkosh.....	44 20
440	28	Philip Dugan, repairs, Oshkosh.....	115 00
441	28	A. C. McClurg & Co., ref. text books, Oshkosh.....	55 78
442	28	Z. P. Beach, pay roll, Whitewater.....	2,607 00
443	28	Wisconsin School Supply Co., furniture, Whitewater	48 84
444	28	Edna M. Greenfield, salary, clerk, Board.....	45 00

*List of Vouchers Paid, 1898-99.*

445	28	S. S. Rockwood, salary, Secretary, Board.....	150 00
446	28	S. S. Rockwood, expenses, Secretary, Board.....	26 06
447	28	Wm. Waters, building, River Falls.....	1,440 20
448	Oct. 26	A. E. Thompson, pay roll, Oshkosh.....	3,869 00
449	26	Agnes R. Black, salaries, Oshkosh.....	10 00
450	26	W. H. Davis, repairs, Oshkosh.....	71 46
451	26	American Book Co., text books, Oshkosh.....	58 32
452	26	G. E. McDill, pay roll, Stevens Point.....	2,795 50
453	26	Stevens Point Lighting Co., light, Stevens Point....	21 45
454	26	J. Riswig, furniture, Stevens Point.....	34 50
455	26	Ginn & Co., text books, Oshkosh.....	89 53
456	26	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
457	26	John H. Crawford & Co., fuel, Oshkosh.....	730 52
458	26	Emma P. Levings, salaries, Oshkosh.....	40 00
459	26	Elizabeth M. Hermley, salaries, Oshkosh.....	22 50
460	26	Z. P. Beach, pay roll, Whitewater.....	2,629 00
461	26	Bausch & Lomb Opt. Co., appar., cab., Whitewater..	21 15
462	26	Electric Light Co., light, Whitewater.....	23 04
463	26	Whitewater Water Works Co., water rent, Whitewater	75 00
464	26	Alfred L. Robbins Co., appar., cab., Whitewater....	98 40
465	26	Narragansett Machine Co., appar., cab., Whitewater	61 80
466	26	Narragansett Machine Co., appar., cab., Whitewater	49 13
467	26	Freeman H. Lord, pay roll, River Falls.....	2,100 00
468	26	C. I. King, building, River Falls.....	76 46
469	26	Elmer & Amend, appar., cab., River Falls.....	155 67
470	26	W. J. Brier, misc., River Falls.....	4 65
471	26	David Campbell, fuel, River Falls.....	32 50
472	26	Manitiwoc Seating Co., furniture, River Falls.....	195 04
473	26	Frank A. Ross, pay roll, Superior.....	2,237 00
474	26	Superior Supply & Fuel Co., fuel, Superior.....	5 00
475	26	I. C. McNeill, misc., Superior.....	13 40
476	26	T. Jenkins, Jr., pay roll, Platteville.....	2,712 50
477	26	T. Jenkins, Jr., fuel, Platteville.....	118 20
478	26	W. H. Dudley, appar., cab., Platteville.....	18 15
479	26	Gustav Wollaeger, pay roll, Milwaukee.....	3,418 00
480	26	Des Forges & Co., ref. books, Milwaukee.....	279 28
481	26	The Keyless Lock Co., repairs, Milwaukee.....	94 91
482	26	Milwaukee Water Works Co., water rent, Milwaukee..	18 56
483	26	State Journal Ptg. Co., general expenses, Board....	12 00
484	26	Edna M. Greenfield, salary, clerk, Board.....	45 00
485	26	S. S. Rockwood, salary, Secretary, Board.....	150 00
486	26	A. J. Hutton, expenses, salary, Institute.....	24 82
487	26	W. H. Cheever, expenses, salary, Institute.....	25 26
488	26	Albert Hardy, expenses, salary, Institute.....	63 60
489	26	Tunstead Heating Co., building, River Falls.....	55 55
490	26	Julius Andrae & Sons Co., building, River Falls....	227 50
491	26	The S. A. Mondschein Piano Co., furniture, Oshkosh.	250 00
492	26	J. B. Colt & Co., appar., cab., Oshkosh.....	125 55
493	26	Oshkosh Gas Light Co., light, fuel, Oshkosh.....	17 70
494	26	Stevens Point Water Wks. Co., water rt., Stevens Point	100 00
495	26	Chicago Lab. Supply & Scale Co., appar., cab., Stevens Point.....	112 02
496	26	Peter B. Bogart, repairs, Whitewater.....	122 20
497	26	Frank R. Dengel & Co., repairs, Milwaukee.....	300 00
498	26	Chas. Pittelkow, expenses, regent, Board.....	15 00
499	Nov. 23	E. C. Perisho, expenses, salary, Institute.....	54 70
500	23	E. W. Walker, expenses, salary, Institute.....	43 95
501	23	J. W. Livingston, expenses, salary, Institute.....	106 55
502	23	A. J. Hutton, expenses, salary, Institute.....	26 50
503	23	H. A. Adrian, expenses, salary, Institute.....	72 07
504	23	E. W. Walker, expenses, salary, Institute.....	47 22
505	23	Albert Hardy, expenses, salary, Institute.....	35 10
506	23	E. C. Perisho, expenses, salary, Institute.....	63 61
507	23	F. A. Ross, pay roll, Superior.....	2,193 00
508	23	C. Dwight Marsh, misc., Superior.....	28 30
509	23	C. D. Donaldson, salaries, Superior.....	7 50
510	23	C. D. Donaldson, salaries, Superior.....	11 25
511	23	Superior Water, Light & Power Co., light, water rent, Superior.....	50 54
512	23	Superior Water, Light & Power Co., light, water rent, Superior.....	57 80
513	23	G. E. McDill, pay roll, Stevens Point.....	2,795 50
514	23	A. C. McClurg & Co., ref. books, Stevens Point.....	173 47
515	23	T. Jenkins, Jr., pay roll, Platteville.....	2,709 00

*List of Vouchers Paid, 1898-99.*

516	23	Gustav Wollaeger pay roll, Milwaukee.....	3,393 50
517	23	Fette & Myer Coal Co., fuel, Milwaukee.....	49 22
518	23	Des Forges & Co., ref. books, Milwaukee.....	171 99
519	23	The R. P. Elmore Co., fuel, Milwaukee.....	82 77
520	23	Gustav Wollaeger, fuel and light, Milwaukee.....	13 92
521	23	A. E. Thompson, pay roll, Oshkosh.....	3,854 00
522	23	Oshkosh Gas Light Co., light, fuel, Oshkosh.....	34 70
523	23	Myron C. Keats, misc., Oshkosh.....	10 12
524	23	Emma P. Levings, salaries, Oshkosh.....	20 00
525	23	L. E. Brown, salaries, Oshkosh.....	8 25
526	23	Elizabeth M. Hermley, salaries, Oshkosh.....	12 00
527	23	Agnes A. Black, salaries, Oshkosh.....	10 00
528	23	Z. P. Beach, pay roll, Whitewater.....	2,591 50
529	23	Frank W. Bixby, misc., Superior.....	38 35
530	23	Whitewater Electric Light Co., light, Whitewater....	32 97
531	23	Anna Banard, salaries, Whitewater.....	30 00
532	23	New Jersey Car Spring & Rubber Co., furniture, Whitewater.....	40 47
533	23	F. H. Lord, pay roll, River Falls.....	2,180 00
534	23	L. E. Knott, appar., cab., River Falls.....	46 34
535	23	Stark Bros. Co., furniture, River Falls.....	170 46
536	23	O. W. Newcomb, furniture, River Falls.....	100 47
537	23	R. B. Dudgeon, misc., River Falls.....	23 06
538	23	Edna M. Greenfield, salary, clerk, Board.....	45 00
539	23	S. S. Rockwood, Secretary, salaries, Oshkosh.....	150 00
540	23	S. S. Rockwood, Secretary's salary, Board.....	15 76
541	23	A. E. Thompson, expenses, service, Board.....	63 86
542	Dec. 28	Gustav Wollaeger, pay roll, Milwaukee.....	3,418 00
543	28	Otto E. Ruhoff, salaries, Milwaukee.....	10 00
544	28	Maude Pearce, salaries, Milwaukee.....	1 00
545	28	Gustav Wollaeger, fuel, light, Milwaukee.....	25 54
546	28	Helen Schorse, salaries, Milwaukee.....	2 47
547	28	Elmer & Amend, appar., cab., Milwaukee.....	97 60
548	28	A. E. Thompson, pay roll, Oshkosh.....	3,848 50
549	28	Archib G. Worthing, salaries, Oshkosh.....	25 40
550	28	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	36 70
551	28	L. D. Harmon & Son, misc., Oshkosh.....	112 50
552	28	M. S. Frawley, misc., Oshkosh.....	17 63
553	28	Hulda C. Felschow, salaries, Oshkosh.....	15 00
554	28	Elmer & Amend, appar., cab., Oshkosh.....	229 92
555	28	Robert Brand & Sons, furniture, Oshkosh.....	60 00
556	28	Agnes A. Black, salaries, Oshkosh.....	10 00
557	28	Emma P. Levings, salaries, Oshkosh.....	20 00
558	28	Leando E. Brown, salaries, Oshkosh.....	5 80
559	28	Z. P. Beach, pay roll, Whitewater.....	2,519 00
560	28	J. E. Riordan, misc., Whitewater.....	1 68
561	28	Whitewater Water Wks. Co., water rent, Whitewater...	75 00
562	28	Whitewater Electric Light Co., light, Whitewater...	39 74
563	28	T. Jenkins, Jr., pay roll, Platteville.....	2,720 00
564	28	Maude E. Guernsey, misc., Platteville.....	127 50
565	28	J. H. Evans, misc., Platteville.....	63 75
566	28	T. Jenkins, Jr., fuel, Platteville.....	233 37
567	28	Frank A. Ross, pay roll, Superior.....	2,215 00
568	28	A. C. McClurg & Co., reference books, Superior....	23 49
569	28	J. P. Bampfylde & Co., printing, Superior.....	24 25
570	28	Warner School Book Co., text books, Superior.....	33 00
571	28	Frank R. Albright, misc., Superior.....	173 70
572	28	C. D. Donaldson, salaries, Superior.....	7 50
573	28	McGibbon Coal Co., fuel, Superior.....	73 44
574	28	Superior Water, Light & Power Co., light, water rent, Superior.....	71 11
575	28	G. E. McDill pay roll, Stevens Point.....	2,806 50
576	28	G. H. Landgraf, misc., Stevens Point.....	19 55
577	28	A. G. Green, fuel, Stevens Point.....	43 75
578	28	Queen & Bro. Co., repairs, Stevens Point.....	44 02
579	28	Queen & Co., appar., cab., Stevens Point.....	30 92
580	28	Vetter Mfg. Co., furniture, Stevens Point.....	37 00
581	28	Freeman H. Lord, pay roll, River Falls.....	2,180 00
582	28	Tunstead Heating Co., building, River Falls.....	1,361 44
583	28	L. A. Platt, building, River Falls.....	20 00
584	28	J. C. Barnard, misc., River Falls.....	11 25
585	28	Lovita M. Mosher, misc., River Falls.....	27 38
586	28	Manitowoc Seating Co., furniture, River Falls.....	47 16
587	28	G. A. Rasmussen, furniture, River Falls.....	17 00
588	28	Elizabeth M. Hermley, salary, Oshkosh.....	12 00

*List of Vouchers Paid, 1898-99.*

589		28	J. W. Livingston, expenses, salary, Institute.....	35	97
590		28	W. H. Cheever, expenses, salary, Institute.....	30	50
591		28	W. C. Hewitt, expenses, salary, Institute.....	32	09
592		28	Northwestern Litho. Co., gen. expenses, Board.....	15	50
593		28	Edna M. Greenfield, salary, clerk, Board.....	45	00
594		28	S. S. Rockwood, salary, Secretary, Board.....	150	00
595		28	Bonnett, Michie & Co., building, River Falls.....	263	28
1899					
596	Jan.	24	A. E. Thompson, pay roll, Oshkosh.....	3,875	00
597		24	Agnes A. Black, salaries, Oshkosh.....	8	00
598		24	Elizabeth Hermley, salaries, Oshkosh.....	12	00
599		24	Error. See Warrant Book.....		
600		24	Oshkosh Decorating Co., repairs, Oshkosh.....	63	53
601		24	Goodyear Rubber Co., furniture, Oshkosh.....	39	60
602		24	Oshkosh Water Works, water rent, Oshkosh.....	92	50
603		24	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	39	80
604		24	H. C. Doman, repairs, Oshkosh.....	40	00
605		24	T. Jenkins, Jr., pay roll, Platteville.....	2,705	00
606		24	Bausch & Lomb Opt. Co., appar., cab., Platteville..	3	21
607		24	L. S. Foster, reference books, Platteville.....	2	25
608		24	Richards & Co., appar., cab., Platteville.....	2	85
609		24	Henry Martens, repairs, Platteville.....	25	00
610		24	A. C. McClurg & Co., reference books, Platteville..	30	90
611		24	T. Jenkins, Jr., fuel, Platteville.....	409	67
612		24	J. F. Buihaupt, appar., cab., Platteville.....	3	30
613		24	A. A. Stephens, misc., Platteville.....	3	30
614		24	Thos. O. Drinkall, furniture, Platteville.....	11	53
615		24	J. M. Rose, furniture, Platteville.....	100	00
616		24	J. H. Evans, light, Platteville.....	25	97
617		24	J. H. Evans, misc., Platteville.....	63	75
618		24	G. E. McDill, pay roll, Stevens Point.....	2,817	50
619		24	C. Krembs & Bro., repairs, Stevens Point.....	22	30
620		24	F. A. Ross, pay roll, Superior.....	2,215	00
621		24	Sup. Water, Light & Power Co., light, water rent, Superior.....	77	60
622		24	C. D. Donaldson, salaries, Superior.....	7	50
623		24	C. E. Lamb, misc., Superior.....	28	11
624		24	Lehigh Coal & Coke Co., fuel, Superior.....	79	68
625		24	Douglas County Telephone Co., misc., Superior.....	50	00
626		24	Gusav Wallaeger, pay roll, Milwaukee.....	3,150	00
627		24	Wisconsin School Supply Co., appar., cab., Milwaukee	76	90
628		24	DesForges & Co., reference books, Milwaukee.....	47	00
629		24	Milwaukee Water Works Co., water rent.....	55	40
630		24	F. H. Lord, pay roll, River Falls.....	2,180	00
631		24	C. C. Glass, City Treas. water rent, River Falls....	75	00
632		24	Z. P. Beach, pay roll, Whitewater.....	2,730	75
633		24	Ludwig Kumllein, appar., cab., Whitewater.....	25	00
634		24	O. B. Williams, light, Whitewater.....	36	96
635		24	Edna M. Greenfield, salary, clerk, Board.....	45	00
636		24	S. S. Rockwood, salary, Secretary, Board.....	150	00
637		24	S. S. Rockwood, expense, Secretary, Board.....	43	66
638		24	Democrat Printing Co., gen. expense, Board.....	10	85
639	Feb.	2	D. McGregor, misc., Platteville.....	19	65
640		2	F. H. Lord, expenses, services, Board.....	41	00
641		2	F. H. Lord, expenses, service, Board.....	130	07
642		2	I. C. McNeill, misc., Superior.....	31	90
643		2	Gustav Wollaeger, expenses, services, Board.....	7	00
644		2	Gustav Wollaeger, expenses, services, Board.....	16	72
645		2	F. A. Ross, expenses, service, Board.....	33	70
646		2	G. E. McDill, expenses, service, Board.....	98	60
647		2	T. B. Pray, misc., Stevens Point.....	27	96
648		2	J. J. Fruit, expenses, service, Board.....	47	46
649		2	W. H. Cheever, misc., Milwaukee.....	11	73
650		2	R. H. Halsey, misc., Oshkosh.....	10	10
651		2	L. D. Harvey, expenses, service, Board.....	31	10
652		2	Albert Sallsbury, misc., Whitewater.....	6	47
653		2	A. E. Thompson, expenses, service, Board.....	68	35
654		2	Z. P. Beach, expense, service, Board.....	20	25
655		2	T. Jenkins, Jr., expenses, service, Board.....	73	55
656		2	Stevens Point Water Co., water rent, Stevens Point.	100	00
657		2	Anna Barnard, salaries, Whitewater.....	27	00
658		2	Henry Holt & Co., reference books, Platteville.....	7	56
659		2	J. E. Fawcett, repairs, Platteville.....	298	80
660		2	Wm. Cowduroy, misc., Platteville.....	2	05
661		2	Tunstead Heating Co., repairs, River Falls.....	54	65



*List of Vouchers Paid, 1898-99.*

662	2	E. D. Bergseng, fuel, River Falls.....	109 10
663	2	A. G. Worthington, salaries, Oshkosh.....	10 00
664	2	J. H. Crawford, fuel, Oshkosh.....	667 58
665	2	Gustav Wollaeger, light, Milwaukee.....	30 29
666	2	Fette & Meyer Coal Co., fuel, Milwaukee.....	871 44
667	2	State Journal Printing Co., gen. expense, Board.....	17 75
668	2	John Winn, misc., Whitewater.....	46 00
669	2	H. J. O'Connor, appar., cab., misc., sta., Whitewater.....	203 28
A	2	Gustav Wollaeger, budget, Milwaukee.....	1,500 96
B	2	A. E. Thompson, budget, Oshkosh.....	1,980 25
C	2	T. Jenkins, Jr., budget, Platteville.....	851 84
D	2	Freeman H. Lord, budget, River Falls.....	1,020 27
E	2	G. E. McDill, budget, Stevens Point.....	1,491 25
F	2	Frank A. Ross, budget, Superior.....	1,361 03
G	2	Z. P. Beach, budget, Whitewater.....	1,122 88
670	Feb. 9	James O. Davidson, general expenses, Board.....	5,000 00
671	9	James O. Davidson, general expenses, Board.....	2,000 00
672	24	Edna M. Greenfield, salary, clerk, Board.....	45 00
673	24	S. S. Rockwood, salary, Secretary, Board.....	150 00
674	24	S. S. Rockwood, general expenses, Board.....	7 05
675	24	Geo. C. Shotts, expenses, salary, Institute.....	27 44
676	24	Gustav Wollaeger, pay roll, Milwaukee.....	3,429 50
677	24	Eva B. Trelevan, salaries, Milwaukee.....	30 00
678	24	Gustav Wollaeger, light, Milwaukee.....	26 60
679	24	A. E. Thompson, pay roll, Oshkosh.....	4,095 50
680	24	L. W. Briggs, salaries, Oshkosh.....	600 00
681	24	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	34 08
682	24	A. C. McClurg & Co., reference books, Oshkosh.....	283 72
683	24	Linda H. Albee, executrix, furniture, misc., Oshkosh.....	35 00
684	24	Leando E. Brown, salaries, Oshkosh.....	7 40
685	24	Emma P. Levings, salaries, Oshkosh.....	40 00
686	24	Elizabeth M. Hermley, salaries, Oshkosh.....	15 00
687	24	Agnes A. Black, salaries, Oshkosh.....	9 20
688	24	A. H. Sage, misc., Oshkosh.....	11 38
689	24	Archie Worthing, salaries, Oshkosh.....	23 55
690	24	T. Jenkins, Jr., pay roll, Platteville.....	2,720 00
691	24	T. Jenkins, Jr., fuel Platteville.....	188 15
692	24	F. H. Lord, pay roll, River Falls.....	2,170 00
693	24	H. E. Sheldrew, fuel, River Falls.....	90 12
694	24	J. B. Wilhelm, fuel, River Falls.....	28 00
695	24	Freeman H. Lord, fuel, River Falls.....	42 00
696	24	W. J. Brier, misc., River Falls.....	22 45
697	24	Matt Bergseng, fuel, River Falls.....	57 75
698	24	G. E. McDill, pay roll, Stevens Point.....	2,811 50
699	24	G. E. McDill, fuel, Stevens Point.....	125 18
700	24	R. A. Cook, fuel, Stevens Point.....	413 93
701	24	Genevieve McDill, salaries, Stevens Point.....	45 00
702	24	F. A. Ross, pay roll, Superior.....	2,215 00
703	24	Lehigh Valley Coal Co., fuel, Superior.....	60 62
704	24	Sup'r Water, Light & Power Co., light, water rent, Superior.....	78 80
705	24	McGibbon Coal Co., fuel, Superior.....	181 82
706	24	C. D. Donaldson, salaries, Superior.....	7 50
707	24	Z. P. Beach, pay roll, Whitewater.....	2,626 00
708	24	W. C. Hewitt, expenses, salary, Institute.....	32 04
709	Mar. 22	Z. P. Beach, pay roll, Whitewater.....	2,536 00
710	22	Whitewater Waterworks Co., water rent, Whitewater.....	75 00
711	22	W. H. Davis, repairs, Oshkosh.....	67 90
712	22	W. H. Davis, repairs, Oshkosh.....	140 90
713	22	W. H. Davis, repairs, Oshkosh.....	64 50
714	22	Archie G. Worthing, salaries, Oshkosh.....	11 80
715	22	C. W. Vanderwalker, salaries, Oshkosh.....	13 00
716	22	Emma P. Levings, salaries, Oshkosh.....	20 00
717	22	Agnes A. Black, salaries, Oshkosh.....	12 80
718	22	Leando E. Brown, salaries, Oshkosh.....	4 60
719	22	Elizabeth M. Hermley, salaries, Oshkosh.....	15 00
720	22	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	30 93
721	22	Alfred L. Robbins, appar., cab., Oshkosh.....	9 92
722	22	Chicago Laboratory Supply & Scale Co., appar., cab., Oshkosh.....	41 10
723	22	A. C. McClurg & Co., ref. text books, Oshkosh.....	73 55
724	22	Phil Dugan, repairs, Oshkosh.....	12 00
725	22	Chas. Truax, Green & Co., appar., cab., Oshkosh.....	40 00
726	22	A. E. Thompson, pay roll, Oshkosh.....	4,145 00
727	22	Gustav Wollaeger, pay roll, Milwaukee.....	3,377 00

*List of Vouchers Paid, 1898-99.*

728	22	Gustav Wollaeger, fuel, light, Milwaukee.....	19 40
729	22	W. H. Cheever, misc., Milwaukee.....	3 25
730	22	Fette & Meyer Coal Co., fuel, Milwaukee.....	625 03
731	22	T. Jenkins, Jr., pay roll, Platteville.....	2,709 00
732	22	T. Jenkins, Jr., fuel, Platteville.....	269 83
733	22	R. T. Verran, appar., cab., Platteville.....	12 50
734	22	F. H. Lord, pay roll, River Falls.....	2,170 00
735	22	J. B. Wilhelm, fuel, River Falls.....	18 37
736	22	Ludwig Kumlien, appar., cab., River Falls.....	28 05
737	22	G. E. McDill, pay roll, Stevens Point.....	2,658 00
738	22	E. Baggott Co., repairs, Stevens Point.....	93 25
739	22	Genevieve McDill, salaries, Stevens Point.....	30 00
740	22	Stevens Point Water Works Co., water rent, St. Pt.	100 00
741	22	Frank A. Ross, pay roll, Superior.....	2,196 00
742	22	Superior Water, Light & Power Co., light, water rent, Superior.....	43 95
743	22	C. D. Donaldson, salaries, Superior.....	7 50
744	22	American Heating Co., repairs, Superior.....	35 00
745	22	Chicago Laboratory Supply & Scale Co., appar., cab., Superior.....	46 64
746	22	Neil & Co., repairs, Superior.....	37 50
747	22	Superior Supply & Fuel Co., fuel, Superior.....	71 73
748	22	McGibbon Coal Co., fuel, Superior.....	61 40
749	22	S. S. Rockwood, Secretary's expenses, Board.....	6 82
750	22	Edna M. Greenfield, salary, clerk, Board.....	45 00
751	22	S. S. Rockwood, salary, Secretary, Board.....	150 00
752	22	Democrat Printing Co., general expenses, Board.....	44 50
753	22	State Journal Ptg. Co., gen. ex., inc., Board, Insts.....	23 25
754	22	Albert Hardy, expenses, salary, Institutes.....	35 56
755	22	C. P. Cary, expenses, salary, Institute.....	27 76
756	22	A. J. Hutton, expenses, salary, Institute.....	104 45
757	Apr. 20	G. E. McDill, expenses, service, Board.....	76 70
758	20	A. E. Thompson, expense, service, Board.....	65 42
759	20	Freeman H. Lord, expense, service, Board.....	54 05
760	20	F. A. Ross, expense, service, Board.....	22 00
761	20	T. Jenkins, Jr., expense, service, Board.....	6 75
762	20	Gustav Wollaeger, expense, service, Board.....	12 20
763	20	L. D. Harvey, expense, service, Board.....	30 00
764	20	I. C. McNeill, misc., Superior.....	28 30
765	20	W. H. Cheever, misc., Milwaukee.....	9 48
766	20	R. H. Halsey, misc., Oshkosh.....	22 32
767	20	D. McGregor, misc., Platteville.....	20 75
768	20	T. B. Pray, misc., Stevens Point.....	56 59
769	20	W. J. Brier, misc., River Falls.....	25 08
770	26	T. Jenkins, Jr., pay roll, Platteville.....	2,720 00
771	26	T. Jenkins, Jr., fuel, Platteville.....	247 35
772	26	J. M. Smith, appar., cab., Platteville.....	34 18
773	26	Mrs. H. E. Stevenson, appar., cab., Platteville.....	57 75
774	26	A. L. Robbins Co., appar., cab., Platteville.....	17 28
775	26	F. H. Lord, pay roll, River Falls.....	2,102 50
776	26	C. R. Taggart, repairs, River Falls.....	15 00
777	26	W. A. Knapp, repairs, River Falls.....	15 00
778	26	New England Furniture & Carpet Co., furn., R. F.....	43 62
779	26	O. W. Newcomb & Co., misc., furn., River Falls.....	163 71
780	26	Alfred Robbins Co., appar., cab., River Falls.....	42 88
781	26	J. M. Olcott & Co., reference books, River Falls.....	20 61
782	26	Ludwig Kumlien, appar., cab., River Falls.....	22 10
783	26	Bausch & Lomb Opt. Co., appar., cab., River Falls.....	96 29
784	26	J. B. Colt & Co., appar., cab., River Falls.....	78 25
785	26	J. B. Wilhelm, fuel, River Falls.....	26 87
786	26	Ward's Natural Science Estab., appar., cab., R. F.....	50 00
787	26	A. E. Thompson, pay roll, Oshkosh.....	4,028 00
788	26	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
789	26	Emma P. Levings, salary, Oshkosh.....	20 00
790	26	Richards & Co., limited, appar., cab., Oshkosh.....	15 00
791	26	Samuel Plantz, misc., Oshkosh.....	9 59
792	26	J. H. Crawford & Co., fuel, Oshkosh.....	506 65
793	26	Chicago Camera Co., appar., cab., Oshkosh.....	3 60
794	26	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	32 97
795	26	C. W. Vande Walker, salaries, Oshkosh.....	1 40
796	26	Agnes A. Black, salary, Oshkosh.....	16 60
797	26	Leando E. Brown, salaries, Oshkosh.....	4 00
798	26	Elizabeth M. Hermley, salaries, Oshkosh.....	14 00
799	26	Archie G. Worthing, salaries, Oshkosh.....	22 25
800	26	Gustav Wollaeger, pay roll, Milwaukee.....	3,342 00

*List of Vouchers Paid, 1898-99.*

801	26	Luvana Peterson, salaries, Milwaukee.....	2 00
802	26	E. W. Woodford, salaries, Milwaukee.....	18 00
803	26	Milwaukee Water Works, water rent, Milwaukee....	11 32
804	26	Gustav Wollaeger, fuel, light, Milwaukee.....	17 50
805	26	W. H. Cheever, misc., Milwaukee.....	37 10
806	26	Z. P. Beach, pay roll, Whitewater.....	2,613 00
807	26	Whitewater Lumber Co., fuel, Whitewater.....	614 60
808	26	Anna Barnard, salaries, Whitewater.....	35 00
809	26	Grace E. Sallsbury, salaries, Whitewater.....	22 70
810	26	Whitewater Electric Light Co., light, Whitewater....	51 78
811	26	Whitewater Electric Light Co., light, Whitewater....	28 80
812	26	Chas. S. Slichter, misc., Whitewater.....	4 72
813	26	G. E. McDill, pay roll, Stevens Point.....	2,768 50
814	26	R. A. Cook, fuel, misc., Stevens Point.....	203 94
815	26	Genevieve McDill, salaries, Stevens Point.....	13 50
816	26	Ina H. Fenwick, salaries, Stevens Point.....	9 00
817	26	Edna M. Greenfield, salary, clerk, Board.....	45 00
818	26	S. S. Rockwood, expenses, Secretary, Board.....	10 51
819	26	S. S. Rockwood, salary, Secretary, Board.....	150 00
820	26	Frank A. Ross, pay roll, Superior.....	2,138 00
821	26	American Heating Co., repairs, Superior.....	51 40
822	26	Chicago Laboratory Supply & Scale Co., appar., cab., Superior.....	10 20
823	26	Lehigh Coal & Coke Co., fuel, Superior.....	73 52
824	26	Superior Water, Light & Power Co., light, water rent, Superior.....	31 15
825	26	C. D. Donaldson, salaries, Superior.....	7 50
826	26	Superior Supply & Fuel Co., fuel, Superior.....	113 22
827	26	H. A. Adrian, expenses, salary, Institute.....	37 55
828	26	E. W. Walker, expenses, salary, Institute.....	65 55
829	26	E. W. Walker, expenses, salary, Institute.....	31 92
830	26	Albert Hardy, expenses, salary, Institute.....	71 40
831	26	W. C. Hewitt, expenses, salary, Institute.....	153 88
832	26	E. W. Walker, expenses, Institute.....	21 43
833	26	E. W. Walker, expenses, salary, Institute.....	44 95
834	26	A. J. Hutton, expenses, salary, Institute.....	68 22
835	26	F. A. Thayer, salary, Institute.....	10 00
836	26	G. L. Bowman, expense, salary, Institute.....	23 66
837	26	C. E. Patzer, expenses, salary, Institute.....	31 70
838	26	H. A. Adrian, expenses, salary, Institute.....	78 33
839	26	H. A. Adrian, expense, Institute.....	18 68
840	26	A. J. Hutton, expense, Institute.....	5 06
841	26	A. R. Coates (insurance boilers), seven schools.....	386 15
842	May 24	A. E. Thompson, pay roll, Oshkosh.....	4,134 00
843	24	O. L. Packard Machinery Co. misc., Oshkosh.....	42 92
844	24	Agnes A. Black, salaries, Oshkosh.....	9 60
845	24	Archie G. Worthing, salaries, Oshkosh.....	9 20
846	24	Elizabeth M. Hermley, salaries, Oshkosh.....	15 00
847	24	M. S. Frawley, misc., Oshkosh.....	10 98
848	24	Emma P. Levings, salaries, Oshkosh.....	20 00
849	24	Oshkosh Gas Light Co., light, fuel, Oshkosh.....	26 80
850	24	George W. Latta, misc., Oshkosh.....	10 28
851	24	G. E. McDill, pay roll, Stevens Point.....	2,747 00
852	24	Frank Abb, repairs, Stevens Point.....	15 25
853	24	Stevens Point Lighting Co., light, Stevens Point.....	126 90
854	24	G. E. McDill, fuel, Stevens Point.....	247 43
855	24	Ina H. Fenwick, salaries, Stevens Point.....	30 00
856	24	W. H. Chandler, misc., Stevens Point.....	16 18
857	24	O. K. Patterson & Co., repairs, Stevens Point.....	21 00
858	24	G. H. Landgraf, misc., Stevens Point.....	18 82
859	24	The Sentinel Co., misc., Stevens Point.....	2 40
860	24	The Hicks Printing Co., misc., Stevens Point.....	2 85
861	24	F. A. Ross, pay roll, Superior.....	2,193 00
862	24	Superior Water, Light & Power Co., light, water rent, Superior.....	29 05
863	24	Bausch & Lomb Opt. Co., appar., cab., Superior.....	17 21
864	24	W. & L. E. Gurley, appar., cab., Superior.....	175 00
865	24	C. D. Donaldson salaries, Superior.....	7 50
866	24	I. C. McNeill, misc., Superior.....	28 25
867	24	F. H. Lord, pay roll, River Falls.....	2,114 12
868	24	Lovila M. Mosher, misc., River Falls.....	27 82
869	24	R. B. Dudgeon, misc., River Falls.....	25 08
870	24	A. G. Spaulding & Bro., furniture, River Falls.....	17 10
871	24	O. W. Newcomb & Co., furniture, River Falls.....	8 75
872	24	H. B. Farnsworth, repairs, River Falls.....	9 00

*List of Vouchers Paid, 1898-99.*

873	24	The Hausen Book Mfg. Co., ref. books, River Falls..	35 83
874	24	Marine Bio. Lab., appar., cab., River Falls.....	5 65
875	24	John Deiss, repairs, Stevens Point.....	69 60
876	24	D. E. Jones, repairs, River Falls.....	20 85
877	24	Gustav Wollaeger, pay roll, Milwaukee.....	3,365 50
878	24	Gustav Wollaeger, fuel, light, Milwaukee.....	11 87
879	24	J. I. Jegi, repairs, Milwaukee.....	25 00
880	24	Z. P. Beach, pay roll, Whitewater.....	2,613 00
881	24	O. B. Williams, light, Whitewater.....	12 48
882	24	T. Jenkins, Jr., pay roll, Platteville.....	2,720 00
883	24	Richards & Co., appar., cab., Platteville.....	28 89
884	24	J. E. Fawcett, misc., Platteville.....	77 75
885	24	T. Jenkins, Jr., fuel, Platteville.....	75 99
886	24	Espenhain Dry Goods Co., furniture, Platteville.....	41 80
887	24	S. S. Rockwood, Secretary's salary, Board.....	150 00
888	24	Edna M. Greenfield, salary, clerk, Board.....	60 00
889	24	Maurice Goodman, general expenses, Board.....	18 00
890	24	S. S. Rockwood, Secretary's expenses, Board.....	22 09
891	24	J. W. Livingston, expenses, salary, Institute.....	138 45
892	24	J. W. Livingston, expenses, salary, Institute.....	71 53
893	24	J. W. Livingston, expenses, salary, Institute.....	122 64
894	24	J. F. Sims, expenses, salary, Institute.....	30 60
895	24	John I. Jegi, expenses, salary, Institute.....	33 55
896	24	W. C. Hewitt, expenses, salary, Institute.....	58 64
897	24	H. A. Adrian, expenses, salary, Institute.....	34 60
898	24	Mae E. Schreiber, expenses, salary, Institute.....	37 32
899	24	A. J. Hutton, expenses, salary, Institute.....	59 74
900	24	Mary D. Bradford, expenses, salary, Institute.....	38 10
901	24	C. E. Patzer, expenses, salary, Institute.....	110 26
902	24	J. Q. Emery, expenses, Board.....	7 35
903	24	Gustav Wollaeger, expenses, Board.....	7 88
904	24	Geo. E. McDill, expenses, service, Board.....	62 46
905	24	A. E. Thompson, expenses, service, Board.....	63 43
906	24	Frank A. Ross expenses, Board.....	31 86
907	24	F. H. Lord, expenses, service, Board.....	87 82
908	24	T. Jenkins, Jr., expenses, Board.....	8 40
909	24	M. S. Frawley, misc., Oshkosh.....	6 00
910	June 6	Chicago, Mil. & St. Paul Ry., gen. expenses, Board..	450 00
911	6	Wis. Central Lines, W. A. Carleton, Agt., gen. ex., Board.....	400 00
912	6	Chicago & Northwestern Ry., general expenses, Board	500 00
913	6	J. Q. Emery, expenses, service, Board.....	17 95
914	21	A. E. Thompson, pay roll, Oshkosh.....	4,145 00
915	21	F. H. Lord, pay roll, River Falls.....	2,170 00
916	21	Z. P. Beach, pay roll, Whitewater.....	2,635 00
917	21	Gustav Wollaeger, pay roll, Milwaukee.....	3,390 00
918	21	Frank A. Ross, pay roll, Superior.....	2,215 00
919	21	G. E. McDill, pay roll, Stevens Point.....	2,782 50
920	21	T. Jenkins, Jr., pay roll, Platteville.....	2,790 00
921	21	Ina H. Fenwick, salaries, Stevens Point.....	30 00
922	21	Vetter Mfg. Co., repairs, Stevens Point.....	29 56
923	21	T. B. Pray, salaries, Stevens Point.....	31 95
924	21	Stevens Point Water Co., water rent, Stevens Point	100 00
925	21	J. B. Borden, misc., Stevens Point.....	6 90
926	21	The Improvement Bulletin, misc., Stevens Point.....	9 80
927	21	Queen & Co., Incorporated, appar., cab., Oshkosh..	141 65
928	21	The Sentinel Co., misc., Oshkosh.....	1 80
929	21	American Book Co., text books, Oshkosh.....	226 01
930	21	A. C. McClurg & Co., reference books, Oshkosh.....	139 57
931	21	The Improvement Bulletin, misc., Oshkosh.....	8 60
932	21	Mabel I. Moody, salaries, Oshkosh.....	5 00
933	21	Aura E. Powers, salaries, Oshkosh.....	8 00
934	21	Agnes A. Black, salaries, Oshkosh.....	14 00
935	21	Archie G. Worthing, salaries, Oshkosh.....	7 00
936	21	Emma P. Levings, salaries, Oshkosh.....	20 00
937	21	Franklin Engraving & Lec. Co., printing, River Falls	19 20
938	21	Edwin E. Howell, appar., cab., River Falls.....	47 00
939	21	J. E. NeCollins, misc., Superior.....	60 00
940	21	C. Dwight Marsh, misc., Superior.....	31 83
941	21	C. E. Lamb, misc., Superior.....	29 70
942	21	I. C. McNeill, misc., ptg., s'ty, Superior.....	119 15
943	21	W. & L. E. Gurley, appar., cab., Superior.....	22 50
944	21	Superior Water, Light & Power Co., light, water rent, Superior.....	42 60
945	21	C. D. Donaldson, salaries, Superior.....	7 50

*List of Vouchers Paid, 1898-99.*

946	21	McGibbon Coal Co., fuel, Superior.....	122	27
947	21	Chicago Laboratory Supply & Scale Co., appar., cab., Superior.....	15	75
948	21	Lehigh Coal & Coke Co., fuel, Superior.....	36	53
949	21	T. W. Gray & Co., repairs, Whitewater.....	32	75
950	21	Grace E. Salisbury, salaries, Whitewater.....	30	89
951	21	Whitewater Water Works Co., water rent, Whitewater.....	75	00
952	21	C. L. Hubbs, misc., Whitewater.....	5	22
953	21	Central School Supply House, appar., cab. Platteville.....	31	68
954	21	Alice Gee, salaries, Platteville.....	37	87
955	21	T. Jenkins, Jr., fuel, Platteville.....	25	30
956	21	Fette & Meyer Coal Co., fuel, Milwaukee.....	424	65
957	21	Gustav Wollaeger, fuel and light, Milwaukee.....	13	54
958	21	Otto E. Ruhoff, salaries, Milwaukee.....	12	00
959	21	W. H. Cheever, expenses, salary, Institutes.....	29	14
960	21	Taylor & Gleason, insc., Institutes.....	10	25
961	21	J. Knauber Litho. Co., gen. expenses Board.....	9	00
962	21	E. W. Keyes, general expenses, Board.....	31	80
963	21	Riverside Printing Co., general expenses, Board.....	75	00
964	21	S. S. Rockwood, expenses, Secretary, Board.....	59	32
965	21	S. S. Rockwood, salary, Secretary, Board.....	150	00
966	21	Edna M. Greenfield, salary, clerk, Board.....	60	00
967	21	L. D. Harvey, service, salary, cond'r Institute, Board.....	36	00
968	21	G. E. McDill, expenses, service, Board.....	56	00
969	21	T. Jenkins, Jr., expenses, service, Board.....	77	45
970	21	F. H. Lord, expense, service, Board.....	52	91
971	21	Frank A. Ross, expenses, service, Board.....	40	51
972	21	J. Q. Emery, expense, service, Board.....	73	00
973	21	J. J. Fruit, expense, service, Board.....	36	07
974	July 11	A. P. Casey, repairs, Superior.....	1	50
975	11	T. J. Casey, repairs, Superior.....	3	75
976	11	G. S. Cotey, repairs, Superior.....	7	00
977	11	Frank Albright, repairs, Superior.....	8	00
978	11	Neil & Co., misc., Superior.....	60	00
979	11	Johnson & Elertson, misc., River Falls.....	11	00
980	11	O. W. Newcomb, furniture, River Falls.....	17	00
981	11	C. W. Davies, furniture, River Falls.....	15	09
982	11	G. E. Pratt, water rent, River Falls.....	50	00
983	11	Anna Barnard, salaries, Whitewater.....	32	00
984	11	Whitewater Electric Light Co., light, Whitewater.....	14	79
985	11	Coe & Roethe, printing, Whitewater.....	51	50
986	11	E. McGlachlin, misc., Stevens Point.....	4	00
987	11	Andrae & Sons Co., misc., Stevens Point.....	10	00
988	11	Thomas Charles Co., misc., Platteville.....	12	13
989	11	Mrs. E. J. Curtis, misc., Platteville.....	28	90
990	11	D. D. Mayne, misc., Platteville.....	18	71
991	11	J. H. Evans, light, Platteville.....	39	34
992	11	Helen Schorse, salaries, Milwaukee.....	2	06
993	11	F. G. Kraege, misc., Milwaukee.....	13	60
994	11	Jane H. White, salaries, Milwaukee.....	3	75
995	11	Maude Pearce, salaries, Milwaukee.....	3	86
996	11	A. N. Meyer, water registrar, water rent, Milwaukee.....	42	97
997	11	C. F. Youmans, appar., cab., Oshkosh.....	5	00
998	11	A. C. McClurg & Co., ref. books, Oshkosh.....	36	87
999	11	Queen & Co., Inc., appar., cab., Oshkosh.....	38	74
1000	11	C. I. King, general expenses, Board.....	14	42
1	11	R. E. Rumery, repairs, Oshkosh.....	20	00
2	12	Taylor & Gleason, insc., Institutes.....	180	50
3	12	D. McGregor, misc., Platteville.....	19	06
4	12	Central School Supply House, appar., cab., Platteville.....	16	31
5	12	R. T. Verran, repairs, Platteville.....	10	00
6	12	T. Jenkins, Jr., furniture, Platteville.....	6	85
7	12	T. Jenkins, Jr., fuel, Platteville.....	18	75
8	12	Coe & Roethe, printing, Whitewater.....	187	50
9	12	Whitewater Electric Light Co., light, Whitewater.....	23	28
10	12	King, Fowle, McGee & Co., printing, Milwaukee.....	152	90
11	12	A. T. Churchill, printing, River Falls.....	160	00
12	12	Estate of Edward Keogh, printing, Stevens Point.....	174	85
13	12	T. B. Pray, repairs, Stevens Point.....	47	57
14	12	T. Jenkins, Jr., misc., ptg., repairs, T. B., Platteville.....	542	80
15	12	E. Baggott Co., repairs, Stevens Point.....	32	50
16	12	J. O. Emery, expenses, service, Board.....	8	10
17	12	G. E. McDill, expenses, service, Board.....	41	20
18	12	J. J. Fruit, expenses, service, Board.....	11	60

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*List of Vouchers Paid, 1898-99.*


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19	12	A. E. Thompson, expenses, service, Board.....	76	78
20	12	Z. P. Beach, expenses, service, Board.....	80	74
21	12	T. Jenkins, Jr., expenses, service, Board.....	19	00
22	12	Gustav Wollaeger, expenses, service, Board.....	10	75
23	12	W. H. Chever, misc., Milwaukee.....	10	88
24	12	R. H. Halsey, misc., Oshkosh.....	12	80
25	12	A. Salisbury, misc., Whitewater.....	44	59
26	12	D. McGregor, misc., Platteville.....	11	50
27	12	T. B. Pray, misc., Stevens Point.....	52	45
28	12	C. I. King, repairs, Oshkosh, Stevens Pt., Sup., Plattev.	50	00
29	12	F. H. Lord, expenses, service, Board.....	31	75
A	12	Gustav Wollaeger, budget, Milwaukee.....	1,496	81
B	12	A. E. Thompson, budget, Oshkosh.....	2,732	47
C	12	T. Jenkins, Jr., budget, Platteville.....	847	74
D	12	F. H. Lord, budget, River Falls.....	927	66
E	12	G. E. McDill, budget, Stevens Point.....	1,382	73
F	12	Frank A. Ross, budget, Superior.....	1,066	28
G	12	Z. P. Beach, budget, Whitewater.....	1,158	83
Total.....			\$301,3	19 60

*Schedule of classified expenditures of the schools for annual period ending July 13, 1899.*

Items.	Milwaukee.	Oshkosh.	Platteville.	River Falls.	Stevens Point.	Superior.	Whitewater.	Totals.
Apparatus and cabinet....	\$213 69	\$1,067 58	\$326 81	\$649 74	\$288 06	\$771 10	\$246 81	\$3,563 79
Building.....				19,690 58				19,690 58
Fuel.....	2,203 70	2,064 63	1,586 61	404 71	1,032 38	1,144 62	2,101 64	10,538 29
Furniture.....	272 13	641 43	190 21	2,143 08	346 55	177 65	271 34	4,042 39
Light.....	143 22	139 55	65 31	16 47	148 35	211 55	263 84	988 29
Miscellaneous.....	841 76	1,328 77	1,411 45	2,029 76	1,006 83	889 79	742 94	8,251 30
Printing.....	254 78	236 40	255 05	207 65	412 95	161 50	261 25	1,789 58
Reference books.....	1,039 11	921 65	107 64	195 92	556 12	317 59	306 00	3,444 03
Repairs.....	1,716 39	1,539 60	1,079 40	284 30	682 68	1,026 13	1,047 32	7,375 82
Salaries.....	34,197 64	41,459 28	27,419 37	21,666 87	28,245 79	22,292 25	26,520 25	201,801 45
Stationery.....	251 84	1,027 13	328 12	313 29	300 98	406 53	301 50	2,929 39
Text books.....	593 25	1,883 09	729 32	688 86	1,124 17	413 51	894 32	6,326 52
Water rent.....	128 25	277 50	52 00	125 00	400 00	292 44	300 00	1,575 19
Totals... ..	\$41,855 76	\$52,586 61	\$33,551 29	\$48,416 23	\$34,544 86	\$28,104 66	\$33,257 21	\$272,316 62
Expenses of Committees, of the Secretary's office, and of the Board for general purposes, and per diem of members.....							*\$18,408 11	
Salary of Secretary for twelve (12) months.....							1,800 00	\$20,208 11
Cost of Teachers' Institutes:								
For incidentals.....							\$209 50	
For conductors' expenses.....							2,425 62	
For conductors' salaries.....							6,159 75	8,794 87
Total expenses from July, 1898, to July, 1899, inclusive, one year.....								\$301,319 60

\* These expenses include \$10,000 principal, and \$4,200 interest on loan from Normal School fund. See R. S., 1898, Sec. 406a.

*Classified Expenditures of Schools.*

REGENTS OF NORMAL SCHOOLS.

*List of Vouchers Paid, 1899-1900.***1899-1900.**

The following is a complete list of the vouchers paid by authority of the Board from July 13, 1899, to July 3, 1900, inclusive, followed by a classified schedule:

No.	Date.	Name.	Amount.
30	July 27	H. A. Adrian, expenses, salary, Institute.....	\$132 70
31	27	W. C. Hewitt, expenses, salary, Institute.....	128 13
32	27	W. E. Anderson, expenses, salary, Institute.....	122 25
33	27	C. & N. W. Ry. Co., general expenses, Board.....	50 00
34	27	Edna M Greenfield, general expenses, Board.....	60 00
35	27	S. S. Rockwood, Secretary's salary, Board.....	150 00
36	27	S. S. Rockwood, expenses, Secretary, Board.....	26 99
37	27	Frank A. Ross, pay roll, Superior.....	155 00
38	27	American Soap & Chemical Co., misc., Superior.....	7 00
39	27	F. H. Lord, pay roll, River Falls.....	145 00
40	27	John Yocum, repairs, River Falls.....	16 00
41	27	The Gunn Furniture Co., furniture, River Falls.....	18 11
42	27	A. E. Thompson, pay roll, Oshkosh.....	268 00
43	27	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
44	27	W. M. Castle, printing, Oshkosh.....	256 80
45	27	Times Pub. Co., misc., Oshkosh.....	3 30
46	27	Z. P. Beach, pay roll, Whitewater.....	160 00
47	27	W. H. Cheever, pay roll, Milwaukee.....	260 00
48	27	G. E. McDill, pay roll, Stevens Point.....	102 02
49	27	T. Jenkins, Jr., pay roll, Platteville.....	100 00
50	27	Marshall Field & Co., appar., cab., Platteville.....	14 03
51	27	The Prang Educational Co., appar., cab., Platteville..	6 50
52	27	G. E. McGill, pay roll, Stevens Point (error).....	48
53	Aug. 19	A. E. Thompson, regents' expenses, Board.....	45 38
54	19	J. Q. Emery, expenses, Board.....	40 30
55	Aug. 30	A. H. Fletcher, expenses, salary, Institute.....	138 07
56	30	F. W. Livingston, expenses, salary, Institute.....	277 61
57	30	F. E. Mitchell, expenses, salary, Institute.....	44 81
58	30	A. P. Hollis, expenses, salary, Institute.....	17 79
59	30	J. W. Livingston, expenses, salary, Institute.....	139 63
60	30	G. H. Landgraf, expenses, salary, inc., Institute....	121 98
61	30	H. E. Bolton, expenses, salary, Institute.....	55 53
62	30	Wm. F. Sell, expenses, salary, Institute.....	56 16
63	30	Elizabeth Fleming, expenses, salary, Institute.....	67 57
64	30	John N. Foster, expenses, salary, Institute.....	71 03
65	30	Frank M. Jack, expenses, salary, Institute.....	112 55
66	30	A. A. Upham, expenses, salary, Institute.....	114 52
67	30	Charlotte E. Richmond, expenses, salary, Institute..	74 16
68	30	H. A. Adrian, expenses, salary, Institute.....	137 95
69	30	M. A. Bussewitz, expenses, salary, Institute.....	72 91
70	30	W. H. Hickok, expenses, salary, Institute.....	84 48
71	30	H. A. Adrian, expenses, salary, Institute.....	178 65
72	30	Thos. H. Gentle, expenses, salary, Institute.....	40 05
73	30	J. A. Hagemann, expenses, salary, Institute.....	81 93
74	30	M. H. Jackson, expenses, salary, Institute.....	138 48
75	30	W. C. Hewitt, expenses, salary, Institute.....	135 95
76	30	D. O. Hibbard, expenses, salary, Institute.....	86 70
77	30	F. E. Doty, expenses, salary, Institute.....	103 90
78	30	E. W. Walker, expenses, salary, Institute.....	205 68
79	30	A. J. Hutton, expenses, salary, Institute.....	134 83
80	30	E. W. Walker, expenses, salary, Institute.....	142 77
81	30	W. H. Schulz, expenses, salary, Institute.....	64 30
82	30	Wm. E. Anderson, expenses, salary, Institute.....	110 50
83	30	G. L. Bowman, expenses, salary, Institute.....	106 80
84	30	Albert Hardy, expenses, salary, Institute.....	135 44
85	30	C. C. Parlin, expenses, salary, Institute.....	48 03
86	30	A. B. O'Neil, expenses, salary, Institute.....	161 77
87	30	H. L. Terry, expenses, salary, Institute.....	223 95
88	30	Grace Darling Madden, expenses, salary, Institute...	98 92
89	30	Sherman Williams, expenses, salary, Institute.....	130 82



*List of Vouchers Paid, 1899-1900.*

90	30	Sherman Williams, expenses, salary, Institute.....	71 20
91	30	S. Y. Gillan, expenses, salary, Institute.....	141 11
92	30	Rosalia A. Hatherell, expenses, salary, Institute....	41 59
93	30	Frank A. Ross, pay roll, Superior.....	155 00
94	30	I. C. McNeill, misc., Superior.....	23 95
95	30	I. C. McNeill, misc., Superior.....	57 87
96	30	Bingham Hardware Co., repairs, Superior.....	10 70
97	30	Bingham Hardware Co., repairs, Superior.....	175 00
98	30	F. H. Dam, furniture, repairs, Superior.....	162 00
99	30	H. C. Gowdin, furniture, Superior.....	55 00
100	30	H. F. Gowdin, repairs, Superior.....	242 00
101	30	Sup. Water, Light & Power Co., light, water rent, Superior.....	38 40
102	30	Sup. Water, Light & Power Co., light, water rent, Superior.....	45 00
103	30	Robert Agrall, repairs, Superior.....	73 50
104	30	Peter McDowell, misc., Superior.....	24 85
105	30	A. E. Thompson, pay roll, Oshkosh.....	150 00
106	30	L. D. Harmon & Son, misc., ins., Oshkosh.....	720 00
107	30	A. C. McClurg & Co., reference books, Oshkosh.....	9 10
108	30	John H. Crawford & Co., fuel, Oshkosh.....	21 14
109	30	The Hicks Printing Co., misc., Oshkosh.....	2 85
110	30	Z. P. Beach, pay roll, Whitewater.....	100 00
111	30	R. L. Williams, repairs, Whitewater.....	77 42
112	30	T. W. Gray & Co., repairs, Whitewater.....	5 50
113	30	Gustav Wollaeger, pay roll, Milwaukee.....	200 00
114	30	Johnson Electric Service Co., repairs, Milwaukee....	12 25
115	30	T. Jenkins, Jr., pay roll, Platteville.....	100 00
116	30	J. C. Freeman, misc., Platteville.....	9 80
117	30	F. H. Lord, pay roll, River Falls.....	105 00
118	30	Library Bureau, furniture, River Falls.....	16 65
119	30	Charlie Price, repairs, River Falls.....	33 70
120	30	Stark Bros. Co., furniture, River Falls.....	15 54
121	30	C. W. Davies, repairs, River Falls.....	8 95
122	30	O. W. Newcomb & Co., furniture, River Falls.....	57 05
123	30	Chicago, St. Paul, Minn. & Omaha Ry., gen. expense, Board.....	50 00
124	30	G. A. H. Buening, general expenses, Board.....	6 00
125	30	Edna M. Greenfield, salary, clerk, Board.....	60 00
126	30	S. S. Rockwood, Secretary's expenses, Board.....	15 53
127	30	S. S. Rockwood, salary, Secretary, Board.....	150 00
128	30	G. E. McDill, pay roll, Stevens Point.....	185 00
129	30	G. H. Landgraf, misc., Stevens Point.....	3 44
130	30	Allen D. Conover, Arch., building, Stevens Point....	750 00
131	Sept. 27	Gustav Wollaeger, pay roll, Milwaukee.....	3,420 00
132	27	W. H. Cheever, misc., Milwaukee.....	22 74
133	27	Jane H. White, salaries, Milwaukee.....	5 00
134	27	Milwaukee Gas Light Co., fuel, light, Milwaukee....	10 44
135	27	Fette & Meyer Coal Co., fuel, Milwaukee.....	334 61
136	27	A. E. Thompson, pay roll, Oshkosh.....	4,214 25
137	27	Aura E. Powers, salaries, Oshkosh.....	3 60
138	27	Oshkosh Decorating Co., repairs, Oshkosh.....	54 34
139	27	Julius Andrae & Sons, repairs, Oshkosh.....	101 49
140	27	Fette & Meyer Coal Co., fuel, Oshkosh.....	646 74
141	27	Emma P. Levings, salaries, Oshkosh.....	20 00
142	27	L. W. Hine, salaries, Oshkosh.....	30 00
143	27	C. & N. W. Ry. Co., fuel, Oshkosh.....	96 23
144	27	Wis. Central Ry Co., fuel, Oshkosh.....	37 41
145	27	Cook & Brown Lime Co., fuel, Oshkosh.....	6 50
146	27	Wm. Waters, building, Oshkosh.....	400 00
147	27	William Diacon, Jr., fuel, Oshkosh.....	87 50
148	27	T. Jenkins, Jr., pay roll, Platteville.....	2,615 00
149	27	R. T. Verran, repairs, Platteville.....	23 05
150	27	R. T. Verran, repairs, Platteville.....	32 25
151	27	T. Jenkins, Jr., fuel, Platteville.....	84 35
152	27	The Washburn Shops, furniture, Platteville.....	74 25
153	27	Wm. Bachelor, repairs, Platteville.....	227 00
154	27	Wm. Kolb, repairs, Platteville.....	16 73
155	27	J. A. Henry, repairs, Platteville.....	143 75
156	27	F. H. Lord, pay roll, River Falls.....	2,175 00
157	27	F. D. Ensign, repairs, River Falls.....	229 66
158	27	O. S. Newcomb & Co., furniture, River Falls.....	9 95
159	27	Howard & Farwell, furniture, River Falls.....	300 00

*List of Vouchers Paid, 1899-1900.*

160	27	A. C. McClurg & Co., reference books, River Falls...	54	55
161	27	Northwestern Slate Co., repairs, River Falls.....	38	56
162	27	F. A. Howe, repairs, River Falls.....	13	10
163	27	James Dunn, miscellaneous, River Falls.....	9	00
164	27	Wm. Waters, miscellaneous, River Falls.....	23	00
165	27	G. E. McDill, pay roll, Stevens Point.....	2,912	50
166	27	Green Bay & Western Ry., misc., Stevens Point.....	208	55
167	27	T. B. Pray, repairs, misc., Stevens Point.....	105	19
168	27	Mina Andrews, salaries, Stevens Point.....	10	25
169	27	Frank A. Ross, pay roll, Superior.....	2,163	00
170	27	Mary F. Carpenter, salaries, Superior.....	45	00
171	27	Superior Water, Light & Power Co., water rent, Sup.	27	00
172	27	Bausch & Lomb Opt. Co., appar., cab., Superior.....	19	82
173	27	Chi. Lab. Supply & Scale Co., appar., cab., Superior..	36	21
174	27	Warehouse & Builders Supply Co., repairs, Superior..	6	00
175	27	Neil & Co., repairs, Superior.....	15	84
176	27	Bingham Hardware Co., repairs, Superior.....	24	50
177	27	J. P. Bamphilde & Co., printing, Superior.....	215	72
178	27	Northwestern Fuel Co., fuel, Superior.....	154	40
179	27	Peter McDonald, repairs, Superior.....	49	40
180	27	Z. P. Beach, pay roll, Whitewater.....	2,682	00
181	27	Whitewater Water Works Co., water rent, Whitewater	75	00
182	27	Tunstead Heating Co., repairs, Whitewater.....	2,400	00
183	27	J. B. Colt & Co., appar., cab., Whitewater.....	30	00
184	27	E. Bonnett & Co., repairs, Whitewater.....	213	95
185	27	E. C. Cleaves, furniture, Whitewater.....	63	00
186	27	O. Smothers, repairs, Whitewater.....	142	83
187	27	Star Wall Finish Co., repairs, Whitewater.....	9	67
188	27	Wisconsin School Sup. Co., furn., repairs, Whitewater	50	65
189	27	W. L. Morrison, expenses, salary, Institute.....	139	06
190	27	J. F. Sims, expenses, salary, Institute.....	160	87
191	27	H. J. Evans, expenses, salary, Institute.....	94	46
192	27	E. W. Walker, expenses, salary, Institute.....	69	15
193	27	F. E. Mitchell, expenses, salary, Institute.....	84	32
194	27	J. E. Klock, expenses, salary, Institute.....	139	40
195	27	J. H. Dorse, expenses, salary, Institute.....	85	00
196	27	J. C. Graham, expenses, salary, Institute.....	50	90
197	27	Wm. J. Pringle, expenses, salary, Institute.....	54	89
198	27	O. J. Schuster, expenses, salary, Institute.....	206	53
199	27	H. C. Buel, expenses, Institute.....	80	59
200	27	W. J. Pollock, expenses, salary, Institute.....	58	49
201	27	F. S. Hyer, salary, Institute.....	66	66
202	27	W. C. Hewitt, expenses, salary, incidental, Institute	283	78
203	27	A. E. Brainerd, expenses, salary, Institute.....	105	23
204	27	C. P. Cary, expenses, salary, Institute.....	112	01
205	27	Kate C. Mavity, expenses, salary, Institute.....	89	35
206	27	H. F. Kling, expenses, salary, Institute.....	94	82
207	27	Chester W. Smith, expenses, salary, Institute.....	117	75
208	27	D. McGregor, expenses, salary, Institute.....	147	79
209	27	Otto Gaffron, expenses, salary, Institute.....	40	39
210	27	Cornelia E. Rogers, expenses, salary, Institute.....	75	88
211	27	F. G. Krage, expenses, salary, Institute.....	55	50
212	27	A. J. Hutton, expenses, salary, Institute.....	129	56
213	27	Wm. E. Anderson, expenses, salary, Institute.....	68	85
214	27	C. R. Frazier, expenses, salary, Institute.....	97	70
215	27	Geo. C. Shults, expenses, salary, Institute.....	166	22
216	27	G. L. Bowman, expenses, salary, Institute.....	116	83
217	27	H. E. Bolton, expenses, Institute.....	27	09
218	27	W. H. Cheever, expenses, salary, Institute.....	279	12
219	27	A. H. Sage, expenses, salary, Institute.....	346	56
220	27	Alice H. Shultes, expenses, salary, Institute.....	84	01
221	27	C. E. Patzer, expenses, salary, Institute.....	324	56
222	27	Albert Hardy, expenses, salary, Institute.....	200	59
223	27	Western Union Tel. Co., gen. ex., inc. Board, Institute	13	55
224	27	State Journal Printing Co., gen. ex., Board, inc., Institute.....	82	75
225	27	Wis. Central Ry. Co., gen. ex., Board.....	50	00
226	27	C. M. & St. Paul Ry. Co., gen. ex., Board.....	50	00
227	27	Democrat Printing Co., gen. ex., Board.....	90	80
228	27	Edna M. Greenfield, salary, clerk, Board.....	60	00
229	27	S. S. Rockwood, Secretary's salary, Board.....	150	00
230	27	S. S. Rockwood, Secretary's expenses, Board.....	16	48
231	Oct. 26	Gustav Wollaeger, pay roll, Milwaukee.....	3,420	00
232	26	A. N. Meyer, water rent, Milwaukee.....	17	42
233	26	John M. Stoltz, repairs, Milwaukee.....	51	52

List of Vouchers Paid, 1899-1900.

234	26	Gustav Wollaeger, fuel, light, Milwaukee.....	13	12
235	26	A. E. Thompson, pay roll, Oshkosh.....	4,315	00
236	26	A. C. McClurg & Co., reference books, Oshkosh.....	65	96
237	26	A. C. McClurg & Co., reference books, Oshkosh.....	19	75
238	26	A. C. McClurg & Co., ref. books, text books, Oshkosh.....	126	44
239	26	Oshkosh Water Works, water rent, Oshkosh.....	92	50
240	26	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	19	80
241	26	L. W. Hine, salaries, Oshkosh.....	30	00
242	26	Emma P. Levings, salaries, Oshkosh.....	20	00
243	26	Agnes A. Black, salaries, Oshkosh.....	20	60
244	26	Aura E. Powers, salaries, Oshkosh.....	7	20
245	26	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	75	26
246	26	Johnson Elec. Service Co., repairs, Oshkosh.....	8	45
247	26	T. Jenkins, Jr., pay roll, Platteville.....	2,719	50
248	26	T. Jenkins, Jr., fuel, Platteville.....	149	74
249	26	Johnson Electric Service Co., repairs, Platteville.....	24	15
250	26	G. E. McDill, pay roll, Stevens Point.....	2,938	00
251	26	Des Forges & Co., reference books, Stevens Point.....	163	58
252	26	Johnson Electric Service Co., repairs, Stevens Point.....	11	00
253	26	L. D. Harvey, reference books, Stevens Point.....	21	50
254	26	Stevens Point Water Works Co., water rent, St. Pt.....	100	00
255	26	Vetter Mfg. Co., furniture, Stevens Point.....	44	00
256	26	L. W. Eggleston & Co., repairs, Stevens Point.....	215	00
257	26	Library Bureau, furniture, stationery, Stevens Point.....	28	25
258	26	L. W. Eggleston & Co., repairs, Stevens Point.....	72	76
259	26	J. Q. Emery, expense, Board.....	38	35
260	26	F. H. Lord, pay roll, River Falls.....	2,175	00
261	26	O. W. Newcomb & Co., furniture, River Falls.....	5	00
262	26	Frank A. Ross, pay roll, Superior.....	2,250	00
263	26	Superior Water, Light & Power Co., light, water rent, Superior.....	40	05
264	26	Walter H. Fecklin, apparatus, cabinet, Superior.....	5	88
265	26	Cowie Bros., repairs, grounds, Superior.....	14	40
266	26	John Franey, repairs, grounds, Superior.....	5	00
267	26	Peter McDonald, repairs, Superior.....	49	00
268	26	Johnson Electric Service Co., repairs, Superior.....	60	45
269	26	Z. P. Beach, pay roll, Whitewater.....	2,715	00
270	26	Bausch & Lomb Opt. Co., appar., cab., Whitewater.....	61	73
271	26	C. Henecke Co., repairs, Whitewater.....	22	50
272	26	Whitewater Electric Light Co., light, Whitewater.....	13	16
273	26	A. G. Spaulding & Co., misc., Whitewater.....	75	00
274	26	Tunstead Heating Co., repairs, Whitewater.....	2,000	00
275	26	Whitewater Electric Light Co., light, Whitewater.....	28	89
276	26	Ward's Natural Science Establishment, appar., cab., Whitewater.....	34	00
277	26	C. & N. W. Ry. Co., general expenses, Board.....	100	00
278	26	C. & N. W. Ry. Co., general expenses, Board.....	100	00
279	26	Edna M. Greenfield, general expenses, Board.....	60	00
280	26	S. S. Rockwood, salary, Secretary, Board.....	150	00
281	26	S. S. Rockwood, expenses, Secretary, Board.....	35	21
282	26	C. M. & St. Paul Ry. general expenses, Board.....	50	00
283	26	A. P. Hollis, salary, Institute.....	52	25
284	26	John Callahan, expenses, service, Institute.....	118	19
285	26	E. C. Perisho, expenses, salary, Institute.....	52	50
286	26	J. I. Jegl, expenses, salary, Institute.....	244	96
287	26	C. H. Sylvester, expenses, service, Institute.....	127	87
288	26	C. H. Sylvester, expenses, salary, Institute.....	77	28
289	26	W. N. Parker, expenses, salary, Institute.....	61	00
290	26	C. I. King, repairs, Whitewater.....	37	86
291	26	C. I. King, repairs, Whitewater.....	56	32
292	Nov. 22	Gustav Wollaeger, pay roll, Milwaukee.....	3,340	00
293	22	B. H. Meyer, misc., Milwaukee.....	7	04
294	22	Gustav Wollaeger, fuel, light, Milwaukee.....	15	22
295	22	Northwestern Furniture Co., furniture, Milwaukee.....	85	45
296	22	A. E. Thompson, pay roll, Oshkosh.....	4,294	00
297	22	Boston Book Co., reference books, Oshkosh.....	140	00
298	22	A. C. McClurg & Co., reference books, Oshkosh.....	192	15
299	22	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	16	55
300	22	Emma P. Levings, salaries, Oshkosh.....	20	00
301	22	Agnes A. Black, salaries, Oshkosh.....	15	40
302	22	Aura E. Powers, salaries, Oshkosh.....	8	40
303	22	L. W. Hine, salaries, Oshkosh.....	30	00
304	22	Thomas & Lewellyn, repairs, Oshkosh.....	7	00
305	22	John R. Service, repairs, Oshkosh.....	68	25
306	22	Richards & Co., Limited, appar., cab., Oshkosh.....	32	55

*List of Vouchers Paid, 1899-1900.*

307	22	Queen & Co., appar. cab., Oshkosh.....	180	00
308	22	G. E. McDill, pay roll, Stevens Point.....	2,943	25
309	22	Pfiffner & Rounds, building, Stevens Point.....	18	45
310	22	A. C. McClurg & Co., reference books, Stevens Pt....	52	98
311	22	Geo. E. Oster, misc., Stevens Point.....	216	00
312	22	A. G. Green, fuel, Stevens Point.....	384	70
313	22	John Week Lumber Co., building, Stevens Pt.	35	56
314	22	W. H. Shumway, misc., Stevens Point.....	216	00
315	22	R. A. Cook, fuel, Stevens Point.....	426	94
316	22	Gross & Jacobs, fuel, Stevens Point.....	379	50
317	22	Gust W. Hein, misc., Stevens Point.....	207	00
318	22	Buckingham & Engbery, misc., Stevens Point.....	216	00
319	22	F. H. Lord, pay roll, River Falls.....	2,165	00
320	22	A. C. McClurg & Co., reference books, River Falls..	18	88
321	22	Eimer & Amend, appar., misc., River Falls.....	46	51
322	22	St. Paul Book & Stationery Co., reference books, River Falls .....	7	06
323	22	T. Jenkins, Jr., pay roll, Platteville.....	2,669	00
324	22	T. Jenkins, Jr., furniture, repairs, Platteville.....	65	94
325	22	Susan R. Bailey, salaries, Superior.....	20	00
326	22	Northwestern Fuel Co., fuel, Superior.....	163	46
327	22	Peter McDonald, repairs, Superior.....	22	00
328	22	Superior Water, Light & Power Co., light, water rent, Superior .....	35	20
329	22	Bausch & Lomb Opt. Co., appar., misc., Superior....	25	21
330	22	Z. P. Beach, pay roll, Whitewater.....	2,715	00
331	22	Ed. Winn, misc., Whitewater.....	44	00
332	22	E. W. Walker, expenses, salary, Institute.....	46	96
333	22	C. E. Slothower, salary, Institute.....	47	50
334	22	R. L. Cooley, salary, Institute.....	141	00
335	22	John Zimmerman, salary, Institute.....	35	00
336	22	J. Q. Emery, expenses, Board.....	49	95
337	22	Edna M. Greenfield, salary, clerk, Board.....	60	00
338	22	S. S. Rockwood, Secretary's salary, Board.....	150	00
339	22	S. S. Rockwood, general expenses, Board.....	33	57
340	22	Frank A. Ross, pay roll, Superior.....	2,160	00
341	Dec. 20	Gustav Wollaefer, pay roll, Milwaukee.....	3,380	00
342	20	Gustav Wollaefer, fuel, light, Milwaukee.....	22	62
343	20	Library Bureau, furniture, Milwaukee.....	125	00
344	20	H. Mooers Co., repairs, Milwaukee.....	125	00
345	20	F. E. Converse, misc., Milwaukee.....	10	25
346	20	I. N. Mitchell, misc., Milwaukee.....	3	53
347	20	Northwestern Furniture Co., furniture, Milwaukee..	127	95
348	20	A. E. Thompson, pay roll, Oshkosh.....	4,315	00
349	20	W. L. Morrison, misc., Oshkosh.....	19	98
350	20	L. W. Hine, salaries, Oshkosh.....	30	00
351	20	Agnes A. Black, salaries, Oshkosh.....	12	20
352	20	Aura E. Powers, salaries, Oshkosh.....	9	60
353	20	Emma P. Levings, salaries, Oshkosh.....	20	00
354	20	Keyless Lock Co., repairs, Oshkosh.....	13	50
355	20	Northwestern Sewer Pipe Co., repairs, Oshkosh.....	95	00
356	20	Oshkosh Gas Light Co., fuel, light, Oshkosh.....	32	10
357	20	Eimer & Amend, appar. cab., Oshkosh.....	13	65
358	20	T. Jenkins, Jr., pay roll, Platteville.....	2,688	00
359	20	A. E. Brainerd, misc., Platteville.....	17	83
260	20	R. T. Verran, repairs, Platteville.....	20	00
361	20	T. Jenkins, Jr., fuel, Platteville.....	181	00
362	20	W. H. Cheever, misc., Milwaukee.....	14	30
363	20	F. H. Lord, pay roll, River Falls.....	2,175	00
364	20	Johnson & Elertson, repairs, River Falls.....	21	75
365	20	R. L. Polk Co., reference books, River Falls.....	6	00
366	20	Gunn Furniture Co., furniture, River Falls.....	10	80
367	20	Manitowoc Seating Co., repairs, River Falls.....	90	00
368	20	O. W. Newcomb & Co., repairs, River Falls.....	19	90
369	20	Walter Glass, fuel, River Falls.....	36	00
370	20	Narragansett Machine Co., furniture, River Falls....	68	58
371	20	F. A. Howe, furniture, River Falls.....	4	18
372	20	F. A. Howe, furniture, River Falls.....	13	00
373	20	G. E. McDill, pay roll, Stevens Point.....	2,856	50
374	20	Northwestern Furniture Co., furniture, Stevens Point	45	35
375	20	R. A. Cook, repairs, Stevens Point.....	27	00
376	20	F. A. Ross, pay roll, Superior.....	2,250	00
377	20	Superior Water, Light & Power Co., light, water rent, Superior .....	47	45
378	20	Frank Albright, repairs, Superior .....	7	20

*List of Vouchers Paid, 1899-1900.*

379	20	Z. P. Beach, pay roll, Whitewater.....	2,715 00
380	20	E. Bonnett, Sr., repairs, Whitewater.....	27 50
381	20	Alfred L. Robbins Co., appar., cab., Whitewater.....	52 47
382	20	O. Smothers, repairs, Whitewater.....	50 88
383	20	A. J. Hutton, expenses, salary, Institute.....	26 38
384	20	W. C. Hewitt, expense, salary, Institute.....	30 11
385	20	S. S. Rockwood, salary, Secretary Board.....	150 00
386	20	S. S. Rockwood, expenses, Board.....	5 18
387	20	Edna M. Greenfield, general expenses, Board.....	60 00
388	20	I. C. McKenny, misc., Superior.....	15 94
389	20	Lily M. Bruner, salaries, Superior.....	68 00
390	20	Chas. McKenny, misc., Milwaukee.....	35 19
391	20	Frank A. Ross, expense, service, Board.....	14 55
392	20	J. Q. Emery, expense, service, Board.....	192 60
393	20	T. Jenkins, Jr., expense, Board.....	26 25
394	20	L. D. Harvey, expenses, service, Board.....	74 79
395	20	J. J. Fruit, expenses, service, Board.....	34 72
396	20	G. E. McMill, expenses, service, Board.....	75 03
397	20	Gustav Wollaeger, expense, service, Board.....	98 59
398	20	F. H. Lord, expenses, service, Board.....	98 61
399	20	A. E. Thompson, expenses, service, Board.....	123 53
400	20	C. H. Sylvester, salary, Institute.....	15 00
401	20	J. I. Jegi, salary, Institute.....	25 00
402	21	Tunstead Heating Co., repairs, Whitewater.....	17 65
403	21	Tunstead Heating Co., repairs, Whitewater.....	1,000 00
404	21	H. J. Wilkinson, fuel, Whitewater.....	27 85
405	Jan. 24	J. Q. Emery, pay roll, Milwaukee.....	3,092 00
406	24	Des Forges & Co., reference books, Milwaukee.....	235 50
407	24	Fette & Meyer Coal Co., fuel, Milwaukee.....	672 97
408	24	N. Meyer, water registrar, water rent, Milwaukee.....	39 70
409	24	W. H. Cheever, misc., Milwaukee.....	8 38
410	24	James A. Sheridan, fuel, light, Milwaukee.....	23 12
411	24	A. E. Thompson, pay roll, Oshkosh.....	4,234 00
412	24	Oshkosh Gas Light Co., light, Oshkosh.....	7 95
413	24	F. M. Lampton, repairs, Oshkosh.....	15 32
414	24	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
415	24	Cook & Brown Lime Co., fuel, Oshkosh.....	7 00
416	24	L. W. Hine, salaries, Oshkosh.....	30 00
417	24	Emma P. Levings, salaries, Oshkosh.....	20 00
418	24	E. Marie Jensen, salaries, Oshkosh.....	4 50
419	24	Richards & Co., Limited, appar., cab., Oshkosh.....	6 00
420	24	Agnes A. Black, salaries, Oshkosh.....	9 00
421	24	Krippene Hardware Co., repairs, Oshkosh.....	32 90
422	24	T. Jenkins, Jr., pay roll, Platteville.....	2,685 00
423	24	T. Jenkins, Jr., fuel, Platteville.....	112 16
424	24	J. H. Evans, light, Platteville.....	42 65
425	24	F. H. Lord, pay roll, River Falls.....	2,255 00
426	24	A. C. McClurg & Co., reference books, River Falls.....	6 25
427	24	Walter T. Glass, fuel, River Falls.....	103 50
428	24	F. P. Ainsworth, fuel, River Falls.....	455 93
429	24	C. Hendrickson, fuel, River Falls.....	21 00
430	24	Freeman H. Lord, fuel, River Falls.....	45 00
431	24	Freeman H. Lord, fuel, River Falls.....	11 80
432	24	M. F. Kennedy & Co., furniture, River Falls.....	170 50
433	24	G. E. Pratt, city treasurer, water rent, River Falls.....	50 00
434	24	G. E. McDill, pay roll, Stevens Point.....	2,994 50
435	24	G. E. McDill, fuel, Stevens Point.....	36 63
436	24	Stevens Point Lighting Co., light, Stevens Point.....	119 40
437	24	W. J. Brier, misc., Stevens Point.....	17 38
438	24	Stevens Point Water Works Co., water rent, Stevens Point.....	100 00
439	24	Frank A. Ross, pay roll, Superior.....	2,250 00
440	24	Johnson Electric Service Co., repairs, Superior.....	4 80
441	24	Warehouse & Builders' Supply Co., repairs, Superior.....	6 00
442	24	Superior Water, Light & Power Co., light, water rent, Superior.....	51 35
443	24	Northwestern Fuel Co., fuel, Superior.....	379 77
444	24	Z. P. Beach, pay roll, Whitewater.....	2,715 00
445	24	Bausch & Lomb Opt. Co., appar., cab., Whitewater.....	11 90
446	24	Whitewater Electric Light Co., light, Whitew.....	33 25
447	24	T. W. Gray & Co., repairs, Whitewater.....	26 75
448	24	Whitewater Electric Light Co., light, Whitewater.....	36 96
449	24	Whitewater Electric Light Co., light, Whitewater.....	33 80
450	24	Whitewater Water Works Co., water rent, Whitewater.....	75 00

*List of Vouchers Paid, 1899-1900.*

451	24	Chas. Strelinger Co., misc., Whitewater.....	24 52
452	24	T. H. Goodhue, misc., repairs, Whitewater.....	70 14
453	24	S. S. Rockwood, general expenses, Board.....	42 65
454	24	Edna M. Greenfield, general expenses, Board.....	60 00
455	24	J. Q. Emery, regents' expense, Board.....	31 45
456	24	S. S. Rockwood, salary, Secretary, Board.....	150 00
457	24	C. & N. W. R'y Co., John T. Gettnng, Agent, expense, Board.....	50 00
458	Feb. 8	S. S. Rockwood, general expenses, Board.....	10 15
459	8	Wis. Central Railway Co., W. A. Carleton, gen. ex., Board.....	50 00
460	8	Chicago, Milwaukee, St. Paul R'y. Co., gen. exp., Board.....	50 00
461	8	Chicago Northwestern R'y. Co., gen. exp., Board.....	50 00
462	8	H. A. Adrian, expenses, Institute.....	12 20
463	8	Tracy, Gibbs & Co., incidental, Institute.....	17 00
464	8	Superior Water, Light & Power, light, water rent, Su- perior.....	48 90
465	8	A. C. McClurg & Co., reference books, Stevens Point..	43 49
466	8	C. H. Taylor, repairs, Stevens Point.....	10 00
467	8	Northwestern Furniture Co., furniture, Stevens Point	17 30
468	8	G. E. McDill, repairs, Stevens Point.....	10 70
469	8	New England Furniture & Carpet Co., furniture, R. F.	61 25
470	8	J. B. Wilhelm, fuel, River Falls.....	59 63
471	8	W. J. Brier, miscellaneous, River Falls.....	7 80
472	8	T. Jenkins, Jr., fuel, Platteville.....	234 14
473	8	City of Platteville, water rent, Platteville.....	52 00
474	8	Fette & Meyer Coal Co., fuel, Oshkosh.....	280 87
475	8	Oshkosh Gas Light Co., light, Oshkosh.....	20 30
476	8	Grand Rapids School Furniture Co., furniture, Oshkosh	87 90
477	8	Charlotte G. Noble, salaries, Oshkosh.....	49 00
478	8	Oshkosh Northwestern Tel. Co., misc., Oshkosh.....	15 45
479	8	James A. Sheridan, fuel, light, Milwaukee.....	30 42
480	8	Albert Salisbury, misc., Whitewater.....	12 29
481	8	T. B. Pray, misc., Stevens Point.....	60 18
482	8	W. J. Brier misc., River Falls.....	26 06
483	8	R. H. Halsey, misc., Oshkosh.....	27 28
484	8	I. C. McNeill, misc., Superior.....	31 80
485	8	W. H. Cheever, misc., Milwaukee.....	11 53
486	8	T. B. Pray, misc., Stevens Point.....	18 34
487	8	D. McGregor, misc., Platteville.....	21 10
488	8	J. Q. Emery, expenses, services, Board.....	100 25
489	8	A. E. Thompson, expenses, service, Board.....	42 61
490	8	F. H. Lord, expenses service Board.....	57 25
491	8	G. E. McDill, expense, service, Board.....	112 50
492	8	Z. P. Beach, expense, service, Board.....	30 00
493	8	T. Jenkins, Jr., expense, service, Board.....	61 60
494	8	Frank A. Ross, expense, services, Board.....	30 00
A	8	Regent Wollaeger, budget, Milwaukee.....	1,144 17
B	8	Regent Thompson, budget, Oshkosh.....	2,424 07
C	8	Regent Jenkins, Platteville.....	892 41
D	8	Regent Lord, budget, River Falls.....	1,094 68
E	8	Regent McDill, budget, Stevens Point.....	1,448 01
F	8	Regent Ross, budget, Superior.....	1,509 23
G	8	Regent Beach, budget, Whitewater.....	1,140 13
495	Feb. 7	James O. Davidson, general expenses, Board.....	\$10,000 00
496	7	J. O. Davidson, general expenses, interest on loan..	1,600 00
497	27	J. Q. Emery, pay roll, Milwaukee.....	3,571 00
498	27	Fette & Meyer Coal Co., fuel, Milwaukee.....	731 53
499	27	A. E. Thompson, pay roll, Oshkosh.....	4,330 00
500	27	Fette & Meyer Coal Co., fuel, Oshkosh.....	341 81
501	27	A. E. Thompson, fuel, Oshkosh.....	87 56
502	27	T. H. McAllister, appar., cab., Oshkosh.....	60 00
503	27	Emma P. Levings, salaries, Oshkosh.....	20 00
504	27	The Buckstaff, Edwards Co. furniture, Oshkosh.....	43 04
505	27	Aura E. Powers, salaries, Oshkosh.....	6 00
506	27	Agnes A. Black, salaries, Oshkosh.....	19 50
507	27	L. W. Hine, salaries, Oshkosh.....	30 00
508	27	John H. Crawford & Co., fuel, Oshkosh.....	5 25
509	27	Wm. R. Blair, salaries, Oshkosh.....	17 50
510	27	T. Jenkins, Jr., pay roll, Platteville.....	2,685 00
511	27	L. S. Keeley, misc., Platteville.....	19 50
512	27	T. Jenkins, Jr., fuel, Platteville.....	126 56
513	27	F. H. Lord, pay roll, River Falls.....	2,255 00
514	27	Joseph J. Pechacek, fuel, River Falls.....	13 50

*List of Vouchers Paid, 1899-1900.*

515	27	Chas. W. Mallberg, fuel, River Falls.....	24 19
516	27	Freeman H. Lord, fuel, River Falls.....	72 19
517	27	George Fox, fuel, River Falls.....	23 06
518	27	L. H. Clark, appar., cab., River Falls.....	100 00
519	27	Freeman H. Lord, fuel, River Falls.....	17 40
520	27	G. E. McDill, pay roll, Stevens Point.....	2,830 50
521	27	Vetter Mfg. Co., furniture, Stevens Point.....	24 00
522	27	G. E. McDill, fuel, Stevens Point.....	41 75
523	27	Frank A. Ross, pay roll, Superior.....	2,250 00
524	27	R. H. Halsey, misc., Superior.....	27 56
525	27	H. F. Cowdin, repairs, Superior.....	60 00
526	27	Johnson Electric Service Co., repairs, Superior.....	35 55
527	27	McGibbon Coal Co., fuel, Superior.....	202 95
528	27	Z. P. Beach, pay roll, Whitewater.....	2,701 00
529	27	D. McGregor, misc., Whitewater.....	10 79
530	27	O. B. Williams, light, Whitewater.....	28 85
531	27	Albert Hardy, expenses, Institute.....	15 45
532	27	A. J. Hutton, expenses, Institute.....	8 79
533	27	W. C. Hewitt, expenses, Institute.....	13 34
534	27	E. W. Walker, expenses, Institute.....	16 05
535	27	C. M. & St. Paul R'y. Co., general expenses, Board..	50 00
536	27	Edna M. Greenfield, general expenses, Board.....	60 00
537	27	S. S. Rockwood, general expenses, Board.....	150 00
538	27	S. S. Rockwood, general expenses, Board.....	6 45
539	Mar. 20	J. Q. Emery, pay roll, Milwaukee.....	3,308 00
540	20	James A. Sheridan, fuel, light, Milwaukee.....	23 62
541	20	A. E. Thompson, pay roll, Oshkosh.....	4,330 00
542	20	Oshkosh Gas Light Co., light, Oshkosh.....	22 60
543	20	W. L. Morrison, misc., Oshkosh.....	20 08
544	20	Richards & Co., Limited, appar., cab., Oshkosh.....	56 05
545	20	Agnes A. Black, salaries, Oshkosh.....	21 40
546	20	L. W. Hine, salaries, Oshkosh.....	30 00
547	20	Emma P. Levings, salaries, Oshkosh.....	20 00
548	20	Wisconsin Central Ry. Co., fuel, Oshkosh.....	51 27
549	20	Wisconsin Central Ry. Co., fuel, Oshkosh.....	40 12
550	20	Wisconsin Central Ry. Co., fuel, Oshkosh.....	38 84
551	20	R. H. Halsey, misc., Oshkosh.....	11 68
552	20	T. Jenkins, Jr., pay roll, Platteville.....	2,630 00
553	20	T. Jenkins, Jr., fuel, Platteville.....	408 10
554	20	F. H. Lord, pay roll, River Falls.....	2,255 00
555	20	Matt. Bergseng, fuel, River Falls.....	70 44
556	20	Andrew Hendrickson, fuel, River Falls.....	54 00
557	20	Jens Hendrickson, fuel, River Falls.....	36 00
558	20	M. F. Kennedy & Bro., misc., River Falls.....	10 00
559	20	W. T. Glass, fuel, River Falls.....	4 20
560	20	W. J. Brier, misc., River Falls.....	32 45
561	20	I. C. McNeill, misc., River Falls.....	15 80
562	20	G. E. McDill, pay roll, Stevens Point.....	2,827 50
563	20	M. E. Means, fuel, Stevens Point.....	62 50
564	20	G. E. McDill, fuel, Stevens Point.....	79 50
565	20	C. H. Sylvester, furniture, Stevens Point.....	12 00
566	20	A. G. Green, fuel, Stevens Point.....	383 00
567	20	Frank A. Ross, pay roll, Superior.....	2,250 00
568	20	I. C. McNeill, misc., Superior.....	32 85
569	20	Northwestern Fuel Co., fuel, Superior.....	421 38
570	20	Superior Water, Light & Power Co., light, water rent, Superior.....	64 70
571	20	McGibbon Coal Co., fuel, Superior.....	119 23
572	20	Z. P. Beach, pay roll, Whitewater.....	2,699 00
573	20	Whitewater Electric Light Co., light, Whitewater.....	20 18
574	20	Whitewater Water Works Co., water rent, Whitewater...	75 00
575	20	A. C. McClurg & Co., reference books, Whitewater..	94 69
576	20	A. J. Hutton, expenses, salary, Institute.....	79 75
577	20	Albert Hardy, expenses, salary, Institute.....	80 57
578	20	A. H. Sage, salaries, Oshkosh.....	13 00
579	20	State Journal Printing Co., Board, Institute.....	52 25
580	20	S. S. Rockwood, Board, Institute.....	15 85
581	20	C. & N. W. Ry. Co., general expenses, Board.....	100 00
582	20	S. S. Rockwood, general expenses, Board.....	150 00
583	20	Edna M. Greenfield, general expenses, Board.....	60 00
584	20	C. M. & St. Paul Ry. Co., general expenses, Board..	200 00
585	20	E. W. Keyes Postmaster, general expenses, Board....	49 70
586	20	T. B. Pray, misc., Stevens Point.....	12 91
587	20	A. E. Brainerd, misc., Platteville.....	15 04
588	20	C. I. King, misc., Board.....	69 47

*List of Vouchers Paid, 1899-1900.*

603	25	F. E. Mitchell, expenses, Institute.....	14 30
604	25	C. E. Patzer, expenses, salary, Institute.....	54 90
605	25	E. W. Walker, salary, Institute, expenses.....	81 10
606	25	Albert Hardy, expenses, Institute.....	17 35
607	25	W. C. Hewitt, expenses, salary, Institute.....	87 56
608	25	Taylor & Gleason, incidentals, Institute.....	11 00
609	25	H. A. Adrian, expenses, salary, Institute.....	76 79
610	25	J. W. Livingston, expenses, Institute.....	33 53
611	25	A. E. Thompson, pay roll, Oshkosh.....	4,244 50
612	25	Fette & Meyer Coal Co., fuel, Oshkosh.....	500 00
613	25	L. W. Hine, salaries, Oshkosh.....	30 00
614	25	Agnes A. Black, salaries, Oshkosh.....	8 20
615	25	Emma P. Levings, salaries, Oshkosh.....	20 00
616	25	Oshkosh Electric Light & Power Co., light, Oshkosh..	18 32
617	25	Oshkosh Gas Light Co., light, Oshkosh.....	21 55
618	25	Oshkosh Water Works Co., water rent, Oshkosh.....	92 50
619	25	Cook & Brown Lime Co., fuel, Oshkosh.....	63 00
620	25	The Hicks Printing Co., building, Oshkosh.....	4 05
621	25	Cook & Brown Lime Co., fuel, Oshkosh.....	64 00
622	25	Oshkosh Electric Light & Power Co., Light, Oshkosh	29 82
623	25	T. Jenkins, Jr., pay roll, Platteville.....	2,613 50
624	25	T. Jenkins, Jr., fuel, Platteville.....	233 00
625	25	J. A. Henry, repairs, Platteville.....	150 60
626	25	F. H. Lord, pay roll, River Falls.....	2,290 00
627	25	G. Hosed, fuel, River Falls.....	21 50
628	25	G. M. Bredahl, fuel, River Falls.....	57 38
629	25	G. E. McDill, pay roll, Stevens Point.....	2,814 50
630	25	Stevens Point Water Co., water rent, Stevens Point	100 00
631	25	H. A. Bright, building, Stevens Point.....	840 00
632	25	P. P. Caproni & Bro., appar., cab., Stevens Point..	14 64
633	25	Stevens Point Lighting Co., light, Stevens Point...	54 67
634	25	A. C. McClurg & Co., reference books, Stevens Point	55 17
635	25	Allan D. Conover, building, Stevens Point.....	200 00
636	25	G. E. McDill, fuel, Stevens Point.....	165 75
637	25	L. B. Dresser, misc., Superior.....	20 30
638	25	Northwestern Fuel Co., fuel, Superior.....	135 78
639	25	McGibbon Coal Co., fuel, Superior.....	175 60
640	25	Bausch & Lomb Opt. Co., appar., cab., Superior.....	25 26
641	25	Superior Water, Light & Power Co., light, water rent, Superior.....	51 35
642	25	Amelia Sabin, salaries, Superior.....	21 00
643	25	Z. P. Beach, pay roll, Whitewater.....	2,711 00
644	25	Tunsted Heating Co., repairs, Whitewater.....	49 55
589	20	Tunstead Heating Co., repairs, Whitewater.....	300 00
590	20	G. E. McDill, repairs, Stevens Point.....	1,275 00
591	20	F. H. Lord, expenses, service, Board.....	82 10
592	20	L. D. Harvey, expenses, services, Board.....	6 50
593	20	A. E. Thompson, expenses, service, Board.....	67 11
594	20	G. E. McDill, expenses, service, Board.....	69 24
595	Apr. 25	Riverside Printing Co., general expenses, Board.....	75 00
596	25	W. M. Castle, general expenses, Board.....	13 00
597	25	Democrat Printing Co., Board, Institute.....	320 95
598	25	S. S. Rockwood, general expenses, Board.....	150 00
599	25	S. S. Rockwood, Board, Institute.....	33 93
600	25	Edna M. Greenfield, general expenses, Board.....	60 00
601	25	C., M. & St. Paul Ry Co., general expense, Board..	50 00
602	25	C. & N. W. Ry. Co., general expenses, Board.....	50 00
645	25	Whitewater Lumber Co., fuel, Whitewater.....	1,792 83
646	25	O. B. Williams, light, Whitewater.....	17 10
647	25	A. C. McClurg & Co., reference books, Whitewater...	17 45
648	25	A. C. McClurg & Co., reference books, Whitewater...	46 64
649	25	Whitewater Water Works Co., water rent, Whitewater	75 00
650	25	A. N. Meyer, Water Registrar, water rent, Milwaukee	44 16
651	25	James A. Sheridan, fuel, light, Milwaukee.....	23 06
652	25	Arthur H. Vogel, repairs, Milwaukee.....	341 30
653	25	F. A. Ross, pay roll, Superior.....	2,402 00
654	25	J. Q. Emery, pay roll, Milwaukee.....	3,319 50
655	25	W. H. Cheever, expenses, salary, Institute.....	52 25
656	25	W. H. Cheever, expense, salary, Institute.....	29 90
657	25	Wisconsin Central Ry. Co., general expenses, Board..	50 00
658	May 23	J. Q. Emery, pay roll, Milwaukee.....	3,540 00
659	23	James A. Sheridan, fuel, light, Milwaukee.....	12 22
660	23	Fette & Meyer Coal Co., fuel, Milwaukee.....	767 38
661	23	A. E. Thompson, pay roll, Oshkosh.....	4,250 00
662	23	Richards & Co., Limited, appar., cab., Oshkosh.....	46 55



*List of Vouchers Paid, 1899-1900.*

663	23	William Diacon, Jr., fuel, Oshkosh.....	30 79
664	23	Oshkosh Gas Light Co., light, Oshkosh.....	13 70
665	23	John H. Crawford & Co., fuel, Oshkosh.....	39 74
666	23	Wisconsin Central Ry. Co., fuel, Oshkosh.....	46 19
667	23	Shaw-Walker Co., furniture, Oshkosh.....	14 90
668	23	Florence G. Smith, salaries, Oshkosh.....	8 20
669	23	Ida M. Huggett, salaries, Oshkosh.....	6 40
670	23	L. W. Hine, salaries, Oshkosh.....	30 00
671	23	Emma P. Levings, salaries, Oshkosh.....	20 00
672	23	T. Jenkins, Jr., pay roll, Platteville.....	2,662 50
673	23	Bausch & Lomb Opt. Co., appar., cab., Platteville.....	134 60
674	23	F. H. Lord, pay roll, River Falls.....	2,315 00
675	23	G. E. McDill, pay roll, Stevens Point.....	2,897 50
676	23	G. R. Potter, building, Stevens Point.....	2,565 00
677	23	T. B. Pray, fuel, misc., Stevens Point.....	24 15
678	23	C. I. Banker Wire & Iron Co., repairs, Stevens Point.....	66 00
679	23	T. B. Pray, furniture, Stevens Point.....	33 20
680	23	Frank A. Ross, pay roll, Superior.....	2,370 00
681	23	Ziegler Electric Co., appar., cab., Superior.....	52 45
682	23	I. C. McNeill, misc., Superior.....	7 90
683	23	Superior Water Light and Power Co., light, water rent, Superior.....	48 50
684	23	Amelia Sabin, salaries, Superior.....	7 00
685	23	P. McDonald, repairs, Superior.....	55 38
686	23	Z. P. Beach, pay roll, Whitewater.....	2,755 00
687	23	Whitewater Elec. Light Co., light, Whitewater.....	18 00
688	23	Carrie E. Morgan, misc., Whitewater.....	26 88
689	23	W. J. Brier, misc., Stevens Point.....	17 23
690	23	B. H. Meyer, misc., Milwaukee.....	13 01
691	23	L. D. Harvey, expenses, Board.....	74 10
692	23	Edna M. Greenfield, general expenses, Board.....	60 00
693	23	Wyckoff, Seamans & Benedict, general expenses, Board.....	5 85
694	23	S. S. Rockwood, salary, Secretary, Board.....	150 00
695	23	C. & N. W. Ry. Co., general expenses, Board.....	150 00
696	23	Wisconsin Central Ry. Co., general expenses, Board.....	100 00
697	23	J. Knauber Litho. Co., general expenses, Board.....	9 00
698	23	S. S. Rockwood, Secretary's expenses, incidentals, Board, Institute.....	13 84
699	23	State Journal Printing Co., general expenses, inci- dentals, Board.....	31 00
700	23	J. W. Livingston, salary, conductor, Institute.....	55 00
701	23	Albert Hardy, salary, Institute.....	55 00
702	23	F. E. Mitchell, salary, Institute.....	32 50
703	23	A. J. Hutton, expenses, salary, Institute.....	62 17
704	23	Fette & Meyer Coal Co., fuel, Oshkosh.....	73 66
705	23	F. E. Converse, misc., Milwaukee.....	11 65
706	June 24	L. D. Harvey, expenses, Board.....	24 20
707	24	Frank A. Ross, expenses, Board.....	35 50
708	24	G. E. McDill, expenses, Board.....	85 35
709	24	F. H. Lord, expenses, Board.....	40 56
710	24	T. Jenkins, Jr., expenses, Board.....	31 50
711	24	S. S. Rockwood, Secretary's expenses, Board.....	43 10
712	24	J. Q. Emery, expenses, Board.....	34 99
713	20	J. Q. Emery, pay roll, Milwaukee.....	3,450 00
714	20	James A. Sheridan, fuel, light, Milwaukee.....	12 04
715	20	A. E. Thompson, pay roll, Oshkosh.....	4,330 00
716	20	Shaw-Walker Co., furniture, Oshkosh.....	100 00
717	20	Oshkosh Elec. Light & Power Co., repairs, Oshkosh.....	35 30
718	20	Ida M. Huggett, salaries, Oshkosh.....	12 00
719	20	Lucy A. Potter, salaries, Oshkosh.....	20 00
720	20	Oshkosh Gas Light Co., light, Oshkosh.....	14 15
721	20	L. W. Hine, salaries, Oshkosh.....	30 00
722	20	Aura E. Powers, salaries, Oshkosh.....	7 80
723	20	Florence G. Smith, salaries, Oshkosh.....	8 00
724	20	T. Jenkins, Jr., pay roll, Platteville.....	2,685 00
725	20	The Open Court Pub. Co., ref. books, Platteville.....	4 13
726	20	W. & L. E. Gurley, appar., cab., Platteville.....	150 00
727	20	A. C. McClurg & Co., text books, Platteville.....	99 45
728	20	American Luxfer Prism Co., repairs, Platteville.....	67 60
729	20	Richards & Co., Limited, appar., cab., Platteville.....	24 98
730	20	A. C. McClurg & Co., ref. books, Platteville.....	39 92
731	20	W. H. Cheever, misc., Platteville.....	14 45
732	20	F. H. Lord, pay roll, River Falls.....	2,325 00
733	20	C. E. Slothower, misc., River Falls.....	32 11
734	20	C. E. Pratt, City Treas., water rent, River Falls.....	50 00

*List of Vouchers Paid, 1899-1900.*

735	20	I. C. McNeill, misc., River Falls.....	13 95
736	20	Tracy, Gibbs & Co., printing, River Falls.....	179 30
737	20	G. E. McDill, pay roll, Stevens Point.....	2,897 50
738	20	Mary E. Tanner, appar., cab., Stevens Point.....	17 87
739	20	O. E. Wells, misc., Stevens Point.....	12 08
740	20	Geo. R. Potter, building, Stevens Point.....	3,060 00
741	20	C. I. Banker, repairs, Stevens Point.....	25 60
742	20	Post Publishing Co., ref. books, Stevens Point.....	29 13
743	20	P. P. Caproni & Co., appar., cab., Stevens Point.....	17 86
744	20	Frank A. Ross, pay roll, Superior.....	2,370 00
745	20	Superior Water, Light & Power Co., light, water rent, Superior.....	44 45
746	20	R. H. Halsey, misc., Superior.....	32 70
747	20	L. B. Dresser, misc., Superior.....	20 30
748	20	Frank R. Albright, repairs, Superior.....	28 00
749	20	Chi. Lab. Supply & Scale Co., appar., cab., Superior.....	18 77
750	20	Northwestern Fuel Co., fuel, Superior.....	67 32
751	20	Peter McDonald, repairs, Superior.....	45 00
752	20	Z. P. Beach, pay roll, Whitewater.....	2,754 00
753	20	Whitewater Electric Light & Power Co., light, White- water.....	15 03
754	20	C. M. & St. Paul Ry. Co., general expenses, Board...	50 00
755	20	Edna M. Greenfield, general expenses, Board.....	60 00
756	20	S. S. Rockwood, general expenses, incidentals, Board, Institute.....	12 07
757	20	S. S. Rockwood, general expenses, Board.....	150 00
758	20	Wisconsin Central Ry. Co., general expenses, Board...	50 00
759	20	Wisconsin Central Ry. Co., general expenses, Board...	150 00
July	2	Fette & Meyer Coal Co., fuel, Milwaukee.....	236 12
761	2	Oshkosh Elec. Light & Power Co., light, Oshkosh....	12 71
762	2	Raycraft, Meyer & Dompke, building, Oshkosh.....	2,000 00
763	2	W. J. Brier, misc., River Falls.....	3 05
764	2	Stevens Point Lighting Co., light, Stevens Point....	49 58
765	2	F. J. Frost, misc., Stevens Point.....	180 00
766	2	Vetter Mfg. Co., furniture, Stevens Point.....	83 80
767	2	C. H. Sylvester furniture, Stevens Point.....	10 00
768	2	Stevens Point Water Co., water rent, Stevens Point	100 00
769	2	V. P. Atwell, building, Stevens Point.....	54 00
770	2	Amelia Sabin, salaries, Superior.....	5 00
771	2	Superior Hardware Co., misc., Superior.....	42 97
772	2	W. H. Schulz, misc., Superior.....	45 79
773	2	I. C. McNeill, misc., Superior.....	25 06
774	2	I. C. McNeill, misc., Superior.....	63 59
775	2	W. C. Hewitt, salary, Institute.....	55 00
776	2	H. A. Adrian, expenses, salary, Institute.....	36 55
777	2	C. & N. W. Ry. Co., general expenses Board.....	50 00
778	2	Mary E. Smith, general expenses, Board.....	13 80
779	2	Albert Salisbury, misc., Milwaukee.....	14 61
780	2	King, Cramer Co., printing, Milwaukee.....	174 12
781	2	T. B. Pray, misc., Oshkosh.....	7 08
782	2	H. Kleinhammer, repairs, Platteville.....	3 15
783	2	T. Jenkins, Jr., appar., cab., repairs, text books, Platteville.....	88 31
784	2	A. C. McClurg & Co., ref. books, Stevens Point.....	28 11
785	2	A. C. McClurg & Co., ref. books, Stevens Point.....	76 13
786	2	T. B. Pray, misc., Stevens Point.....	30 26
787	2	Evening Telegram Co., printing, Superior.....	166 62
788	2	Albert Salisbury, misc., text books, Whitewater.....	22 00
789	2	Albert Salisbury, misc., etc., Whitewater.....	90 17
790	2	E. D. Coe, misc., etc., Whitewater.....	279 25
791	2	D. McGregor, misc., Whitewater.....	9 64
792	2	H. J. O'Connor, appar., cab., misc., stationery, White- water.....	176 54
793	2	Z. P. Beach, incidentals, Institute.....	24 75
794	2	I. C. McNeill, misc., Superior.....	38 15
795	3	Frank A. Ross, expenses, service, Board.....	77 50
796	3	J. Q. Emery, expenses, service, Board.....	126 90
797	3	F. H. Lord, expenses, service, Board.....	148 61
798	3	W. J. Brier, misc., River Falls.....	25 45
799	3	Z. P. Beach, expenses, service, Board.....	76 96
800	3	Gustav Wollaeger, expenses, service, Board.....	33 35
801	3	G. E. McDill, expenses, service, Board.....	141 70
802	3	Chas. McKenney, misc., Milwaukee.....	15 80
803	3	D. McGregor, misc., Platteville.....	10 00

*List of Vouchers Paid, 1899-1900.*

804	3	L. D. Harvey, expenses, service, Board.....	123 50
805	3	T. Jenkins, Jr., expenses, service, Board.....	73 00
806	3	R. H. Halsey, misc., Oshkosh.....	12 18
807	3	Albert Salisbury, misc., Whitewater.....	25 34
808	3	American Book Company, text books, Whitewater....	67 36
809	3	B. E. Cutter, appar., cab., misc., repairs, White- water .....	32 95
810	3	Sup. Water, Light & Power Co., light, Superior.....	17 35
811	3	J. J. Fruit, expenses, service, Board.....	46 46
812	3	A. E. Thompson, expenses, service, Board.....	148 46
A	3	Gustav Wollaeger, budget, Milwaukee.....	1,390 22
B	3	A. E. Thompson, budget, Oshkosh.....	1,895 01
C	3	T. Jenkins, Jr., budget, Platteville.....	894 12
D	3	F. H. Lord, budget, River Falls.....	779 44
E	3	G. E. McDill, budget, Stevens Point.....	1,379 08
F	3	Frank A. Ross, budget, Superior.....	1,348 62
G	3	Z. P. Beach, budget, Whitewater.....	976 61
Total .....			\$304,929 00

## Schedule of classified expenditures of the schools for the annual period ending July 3, 1900.

Items,	Milwaukee.	Oshkosh.	Platteville.	River Falls.	Stevens Point.	Superior.	Whitewater.	Totals.
Apparatus and cabinet....	\$84 25	\$734 45	\$518 31	\$196 74	\$180 78	\$183 14	\$234 97	\$2,132 64
Building .....		2,404 05			7,595 47			9,999 52
Fuel .....	2,773 93	2,648 58	1,529 05	1,124 72	1,984 19	1,819 89	1,820 68	13,703 04
Furniture.....	432 73	259 28	116 75	787 23	492 46	259 06	133 57	2,481 11
Light .....	154 56	221 85	46 85	31 77	228 75	235 70	245 20	1,164 68
Miscellaneous .....	890 75	1,631 38	526 21	744 70	2,146 98	740 98	765 27	7,446 27
Printing.....	231 47	256 80	346 70	203 90	60 47	461 52	231 75	1,792 61
Reference books.....	811 26	863 63	98 21	283 34	764 81	577 72	390 56	3,789 53
Repairs.....	773 76	998 87	967 67	560 57	2,359 73	1,638 53	6,780 40	14,079 53
Salaries.....	34,303 50	44,039 25	26,852 50	22,635 00	29,212 00	23,191 00	27,422 00	207,655 25
Stationery.....	292 88	797 31	213 14	344 22	245 39	462 84	289 91	2,615 69
Text books.....	449 11	1,499 99	527 75	561 07	548 62	825 30	1,158 09	5,569 93
Water rent.....	101 28	370 00	52 00	100 00	400 00	324 00	3 0 00	1,617 28
<b>Totals.....</b>	<b>\$11,299 48</b>	<b>\$56,725 44</b>	<b>\$31,795 14</b>	<b>\$27,575 29</b>	<b>\$46,219 65</b>	<b>\$30,719 68</b>	<b>\$39,772 40</b>	<b>\$274,107 08</b>
Expenses of Committees, of the Secretary's office, Board for general purposes, per diem of members.....							*\$17,723 37	
Salary of Secretary for twelve (12) months.....							1,800 00	\$19,523 37
Cost of Teachers' Institutes:								
For incidentals.....							\$423 81	
For conductors' expenses.....							2,400 06	
For conductors' salaries.....							8,474 68	11,298 55
<b>Total expenses from July, 1899, to July, 1900, inclusive, one year.....</b>								<b>\$304,929 00</b>

\* These expenses include \$10,000 principal, and \$1,600 interest on loan from Normal School fund. See R. S., 1893, Sec. 406a.

*Milwaukee Normal School.*

## APPENDIX B.

## REPORTS OF PRESIDENTS OF SCHOOLS.

REPORT OF THE PRESIDENT OF THE MILWAUKEE STATE  
NORMAL SCHOOL.

Honorable F. A. Ross, President Board of Regents of Normal Schools.

*Dear Sir:* — I have the honor of submitting the biennial report for the State Normal School at Milwaukee for the two years ending August 31st, 1900.

Very respectfully,

CHARLES McKENNY,

*President.*

## CHANGES IN THE PRESIDENCY.

The two years just closing have been characterized by a change in the presidency. Hon. L. D. Harvey, who came to the presidency in 1892 and under whose administration the attendance of the school increased from 90 to 394 and the number of graduates from 31 to 147, resigned in December, 1898, to become State Superintendent.

Under the leadership of Prof. W. H. Cheever, who succeeded Mr. Harvey, the work of the school moved on without interruption or loss. Prof. Cheever not desiring the presidency, his successor was chosen and took up his work April first of this year.

The fact that the school did not suffer by these frequent changes is evidence of the sterling character of the faculty and students.

*Enrollment.*

	1898-'99.	1899-'00.
Seniors.....	194	181
Juniors.....	141	185
Model School.....	254	283
No. Graduates.....	129	84
No. High School Graduates.....	321	292
No. from other Normal Schools or Colleges.....	4	16
No. admitted on examination.....	10	18

*Milwaukee Normal School.*

No. graduated since school was organized—year	1885	15
	1887	17
	1888	21
	1889	19
	1890	22
	1891	25
	1892	31
	1893	35
	1894	53
	1895	70
	1896	80
	1897	105
	1898	147
	1899	129
	1900	84
Total number graduates		853

It will be observed that the number of graduates steadily increased up to 1898 and that the number graduated in 1900 was much smaller than for the three preceding years. This was due to the additional entrance requirements which went into force in 1898. Prior to 1898 graduates from four-year high schools have been admitted without examination, but in that year the new rule requiring examinations in arithmetic, grammar, United States history and geography went into effect. The result was a reduced entering class, it being sixty less than the entering class of the preceding year. The graduating classes for the ensuing years were correspondingly smaller. The reason for making the additional entrance requirements were two:

1. To decrease the attendance. The school had grown beyond its capacity.
2. To bring in a class of students better prepared to do the professional work required.

The subjects above named were not taught in many of the high schools of the state and the normal was obliged to give to academic instruction time that should have been given to professional work. Since the rule was adopted that all candidates for entrance who had not pursued United States history, grammar, arithmetic and geography in the high school should pass examinations in them, high schools have modified their programs and most of the candidates presenting themselves bring standings in the four subjects named, and the normal has been relieved of a considerable elementary work.

## BROADENING OF THE COURSE.

As a result of the conviction that many would be more profited by a line of study dealing with the problems of social and economic life than by the study of a foreign language, a course called the Social Science Course has been added to the program in which social themes are substituted for

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*Milwaukee Normal School.*

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Latin, or German. This is not a research course in the somewhat indefinite field of sociology. It rather deals with practical facts and forces of community and national life. The aim is to bring the students into intelligent relation with the pressing questions of social life of today, and better equip them to bear a part in the solution of those questions. There is reason to think that the course will prove popular and profitable.

*Primary and Intermediate Course.*—The fact that so large a number of the graduates teach in the grades below the grammar grades led to the offering of a course which would especially fit them for the primary and intermediate grades. It certainly is wisdom to recognize not only differences of tastes and abilities in individuals but also the different demands made by our school system. It is the business of the Normal School to fit teachers for all grades of service from the kindergarten to the high school. The addition of the Primary and Intermediate course is another step toward the better fulfillment of this mission.

## EQUIPMENT.

The wise policy of the state in providing funds for the maintenance of the Normal Schools and the judicious management of the Board of Regents has resulted in a commendable equipment of the Milwaukee Normal. The laboratories, class rooms and library are quite satisfactorily supplied. There is much material that could profitably be used which the school has not been able to purchase but the work is not suffering from lack of educational appliances.

The most serious limitations of the school come from over-crowding. There is urgent need for more room. The Board and the state must soon face the alternative of enlarging the plant or refusing admittance to young men and women who desire to fit themselves for teaching.

## SUPPLY AND DEMAND.

In this connection it is of interest to know that the demand for normal trained teachers more than equals the supply. During the last two months at least twenty-five requests for teachers have come which the school has been unable to fill. This indicates a growing purpose throughout the state to put into the school the best teachers the state can supply. It is obviously the duty of the state to encourage this sentiment and if need be to enlarge its facilities for supplying the educational demands of this growing commonwealth.

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*Oshkosh Normal School.*

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## REPORT OF THE PRESIDENT OF THE OSHKOSH NORMAL SCHOOL.

Pres. FRANK A. ROSS, Superior, Wis.

*Dear Sir:*— I submit herewith my report of the condition and needs of the Oshkosh State Normal School. During the year and a half of my connection with the School I have had opportunity to learn from its condition more of the remarkable qualifications of my predecessor for the work which he was carrying on than even my intimate acquaintance with him had enabled me to understand. I do not know of any other educational institution in the United States that may be justly said to be so entirely a monument to one man as this may be reasonably said of the Oshkosh School as a monument to George S. Albee. The marks of his strong personality are seen in the harmonious relations of members of the faculty with one another, and the cordial coöperation of faculty and students, and in the deep earnestness with which both faculty and students subordinate every other interest to the welfare of the school. It is unnecessary for me to dwell upon the fact that I found the school in excellent condition, the best evidence of the enduring quality of Mr. Albee's work, and of the intelligent and energetic administration of Mr. Briggs during the interregnum.

The enrollment of students during the past two years has been about constant. It leads one to conjecture whether the school has not reached the maximum limit in size that the present needs of the territory naturally tributary to it demand. In spite of the fact that there are a number of normal schools in other states with a larger enrollment than the seven hundred students that have made up our quota during the past year, it seems to me that a school which passes the five hundred or six hundred mark of students in attendance at one time seriously imperils the quality of the training given to its members. There is little opportunity in a larger school for that close relationship between students and faculty that has been one of the distinguishing features of this school in the past and has contributed not a little to the excellence of the work done by its graduates in different parts of the country. We can not afford to lose this quality in our work. I am not prepared to say at the present time just what method will be best to limit the numbers of the school, so that it may best accomplish the work that the State expects of it. It has been suggested that at the expiration of a given period— five years, perhaps—the elementary course be abolished and the school depend solely upon the graduates of our high schools for its membership. The principal objection to this plan is that the normal schools are already in danger of drawing too far away



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*Oshkosh Normal School.*

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from the district schools, and a regulation of this kind would but tend to widen the breach. From the graduates of the Elementary Course and the undergraduates, the rural schools must for some time expect to recruit their teaching force. It will be many years before the State can depend upon the county training schools for teachers for its district schools, even if we suppose that these schools be supervised by State authority with sufficient care to maintain a high standard of excellence. Without further action of the Board it would not be feasible to raise the standard for admission to the Elementary Course except by more stringent entrance examinations, and in the judgment of those who have been conducting these examinations during the past few years, there has been a gradual elevation in the standard. It is evident that this cannot be indefinitely continued.

During the past year more than one hundred practice teachers, on the average, have been engaged in work in the model department. Although we have enrolled three hundred pupils in the model department during that time, it will be readily seen that a larger number of pupils is necessary to furnish the requisite amount of practice, if the conditions of teaching are to be approximately what our students will find when they begin the actual work of teaching. It is not feasible to increase the size of the model department so that it may contain a sufficient number of pupils for needs of the normal department. I see no way out of the difficulty except to make some such arrangement with the city school officials as has been made in Milwaukee, Stevens Point, Marquette, and other places where the Board of Education has entered into an arrangement with the normal school authorities by which the latter furnish to the former practice teachers for certain grades in one of the city schools. Reports indicate that the practical working of this plan is most successful.

I desire to call the attention to the necessity for the establishment of a kindergarten department as an integral part of the model school. The kindergarten is now recognized in the best city school systems of the state as an absolutely essential part of the school. The primary teachers in such schools need to have some knowledge of kindergarten methods. We receive requests continually from such cities for teachers of primary grades who know something of the kindergarten. I think we are doing injustice to our students on the one hand, and to the communities looking to us for teachers, on the other, if we do not at least give opportunity to our students to observe a kindergarten. Not a few of our male graduates accept positions as principals of graded schools where the kindergarten is an essential part of the school. Of what value are these persons as supervising

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*Oshkosh Normal School.*

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officers in this line of work if we have not given them any opportunity to see the practical working of the kindergarten? The normal schools should at least seek to keep abreast of the progressive schools of the state in the introduction of improvements, or we must resign the leadership which we have claimed in school work.

For a similar reason manual training in some form should be a part of the course of study in the model department of each of our normal schools. For its introduction not a very expensive outfit is necessary; but something should be done that will serve to show that we are alive to the rightful demand that hand-work is making for a place in the course of every graded school. At a comparatively slight expense bench work could be introduced for the boys and sewing for the girls, and a start be made.

The conditions in the Oshkosh school will be much more favorable when the addition now in process of construction is completed. We hope then to have proper housing for the primary departments of our model school, for the science work of the normal department, and sufficient space for proper recitation rooms.

Respectfully,

R. H. HALSEY,

*President.*

August 31st, 1900.

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*Platteville Normal School.*


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## REPORT OF PRESIDENT OF PLATTEVILLE NORMAL SCHOOL.

HON. FRANK A. ROSS, President Board of Regents of Normal Schools: F

*Dear Sir:* — In compliance with the requirements of the Board, I have the honor to report as follows for the Platteville School, for the period of two years, closing August 31st, 1900:

The enrollment for the year ending June 16, 1899, was as follows:

Normal .....	372
Preparatory .....	12
Model School .....	146
Deduct twice counted .....	19
Total .....	511

Enrollment for the year ending June 15, 1900:

Normal .....	327
Preparatory .....	40
Model School .....	114
Deduct twice counted .....	27
Total .....	454

Graduates for year ending June 16, 1899:

Full Course .....	45
Elementary Course .....	9

Graduates for year ending June 15, 1900:

Full Course .....	70
Elementary Course .....	11

The school has just closed its thirty-fourth year and graduated its thirty-second class. During this period the Diploma of the Board has been conferred upon 641 persons, making the average membership of graduating classes 20:

The Elementary Course was first offered in 1875, since which time 263 persons have received the Certificate of the Board. Of this number, however, 115 have received the Diploma also, leaving 148 persons with the Certificate only. As the school has sent out 25 Elementary Classes, the average number of Certificates granted is a trifle less than 11, and the average number apparently satisfied with the Certificate about 6.

It has been the policy of the school to encourage its membership to seek for the best that the school can offer. All that a Diploma represents should be mastered by those intending to teach. Two years of training added to what the Certificate represents, should make, as we believe it does, a very marked difference in the scholarship and the power of the pupil. Generally the last year of a Course is worth much more in a professional sense than an equal length of time at an earlier stage. The more advanced the Course the more evident is this superiority.

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*Platteville Normal School.*


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It is a matter of congratulation, too, that the school, for many years, has furnished from its graduates, a large representation to the University of Wisconsin and to like institutions in other states. A school that does not inspire its membership with ambition for higher and more thorough attainments, fails in one of its most important purposes. The Drumtochty schoolmaster preparing his lads for college, teaches a lesson that the American teacher might profitably learn. Before the true teacher and appreciative student there ever rise higher ideals inviting to richer fields of learning. All good teaching creates a craving that can be satisfied only by higher attainments.

In a Normal School, scholarship is absolutely essential, but not more so than is teaching power. The great business of a teacher is teaching, and the great business of a Normal School is to develop teaching power in its members. So long as those entering a Normal School are deficient in scholarship, so long must the Normal School do academic work. Under present conditions the Normal School is forced to divide its energies between academic instruction and professional training. Scholarship alone is sufficient only for the "born teacher," but the number thus gifted is so very small as to count for little or nothing in the general demand. However learned the student, to become a teacher he must acquire the art of teaching. Scholarship is all that the scholar needs, but the teacher needs that and much besides. The Normal School is earnestly striving to blend these two elements so as to produce the highest type of teacher that time and conditions will permit.

Year by year fewer persons seek admission by examination and a larger proportion by Diploma. Were it not for applicants from the Preparatory Department, there would hardly be necessity for Entrance Examinations. The increasing number of High School graduates makes the Junior and Senior classes large, while the diminishing number entering by examination makes the lower classes correspondingly small. Heretofore the number entering from Three Year High Schools was very considerable; but schools are expanding their courses to four years, thus increasing the membership of Junior rather than Second Year Classes.

In December, 1899, the following items of information were furnished by the Superintendents of the counties herein named, showing the extent to which teachers with Normal training are employed in these counties:

Grant County:		
Number of teachers needed.....		299
Number Normal Undergraduates.....	73	
Number Elementaries.....	13	
Number Diplomas.....	39	
Total.....	125	= 41 per cent.

*Platteville Normal School.*

La Fayette County:		
Number of teachers needed .....		167
Number Normal Undergraduates .....	33	
Number Elementaries .....	5	
Number Diplomas .....	14	
Total .....	52	=31 per cent.
Richland County:		
Number of teachers needed .....		161
Number Normal Undergraduates .....	5	
Number Elementaries .....	2	
Number Diplomas .....	12	
Total .....	19	=12 per cent.
Crawford County:		
Number of teachers needed .....		122
Number Normal Undergraduates .....	5	
Number Elementaries .....	1	
Number Diplomas .....	5	
Total .....	11	= 9 per cent.

From this showing it would seem that it will take many years yet before the schools of counties even nearest the Normal Schools, are supplied with teachers with any professional training except what may be obtained in High schools or in Institutes. That Normal graduates especially are in demand there is abundance of evidence. To cite but one instance: In June, 1900, a class of 70 young people received the Diploma of the Board. Up to the date of this report, every one desiring to teach had been offered employment, in many instances a chance of from three to five positions, and all but three had accepted. At the opening of the present quarter, there were on hand six calls for Normal graduates that could not be filled.

Each year has brought some desirable improvement in the building and equipment. While it is not possible to change the older part so as to conform with modern ideals of architecture, such interior improvements have been made as contribute very much to comfort, health, and convenience. Especial mention should be made of the steam heat and fan system of ventilation that has just been installed in the north wing of the building, completing the work that was commenced two years ago. The entire building is now heated and ventilated by the same plant.

Growing interest in Biological and Geological studies has resulted in an accumulation of specimens that demand display room much more ample than has been heretofore afforded. Hence it has become necessary to enlarge the Museum both in floor space and in cases. A good beginning in that direction has been made, and it is hoped that in a short time the Museum of the Platteville Normal will be of much educational value not only to the school but to the community and to visitors. Already the school is promised the use of some very valuable private collections on condition that they be given room in the Museum. The current year has

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*Platteville Normal School.*

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added most valuable material to our collection. A considerable part, and that the most choice, of the display at the Mining Congress recently held in Milwaukee has come into the possession of the school and will be arranged and labeled as soon as cases to receive it can be secured. This collection costs the Board only freight from Milwaukee. Then, too, several of our graduates who spent the summer at Wood's Hall, have made for the school valuable contributions of biological specimens. With the interest now manifested in the Natural Sciences, it will be an easy matter to secure materials of such variety and abundance as will make the Museum equal to any in the land.

The reference Library is growing quite rapidly especially in the department of Public Documents. Being the depository for the 3d Congressional District it is regularly and liberally supplied with such government documents as are designed for free distribution.

Individual gifts of much value have been made within the current year. But a few weeks ago 73 volumes of the Congressional Globe and Cong. Record of early dates, together with 10 volumes of the Wisconsin Legislative Manual and Blue Book, were presented to the school by Harrison H. Rountree, Esq., of Chicago. This generous and valuable gift is now being arranged so as to be used by the school.

Among many interesting and helpful addresses with which the school has been favored, by persons not officially connected with our educational system, the following are worthy of special mention:

Dr. C. F. Millspaugh, Botany Curator, Field Museum, Chicago. Subject: Yucatan and a Lost Civilization, Illustrated.

E. F. Newton, Esq., Supt. Laffin & Rand Powder Mill, Platteville. Subject: Smokeless Powder and its Manufacture.

Dr. C. O. Whitman, Head Professor of Zoology, Univ. of Chicago. Subject: The Pigeon and its Varieties, Illustrated.

With sincere thanks for the many courtesies extended and the liberal spirit manifested toward the school by individual members, committees, and officers of your Board, I respectfully submit this report.

Truly yours,

D. MCGREGOR,  
*President.*

Platteville, Wis., Aug. 31, 1900.

*River Falls Normal School.*

## REPORT OF THE PRESIDENT OF THE RIVER FALLS NORMAL SCHOOL.

Hon. F. A. Ross, President of Board of Regents of Normal Schools:

*Sir:*—I have the honor to submit herewith the biennial report of the State Normal School at River Falls for the period ending August 31, 1900:

## ATTENDANCE.

During the two years covered by this report the school has been in operation in the new building, with an attendance so large that it has taxed to its utmost the study room, considered at the time it was planned ample to accommodate the school for two or three decades. The single seats supplied when the house was opened in September, 1898, have been placed in double rows for one-half of the room thus somewhat increasing the seating capacity. Additional numbers can be accommodated by supplying the whole room in the same manner but the advantage of single seating is thereby sacrificed.

The enrollment for the last year has been equalled but once in the history of the school in the Normal Department, and stands without an equal when the entire enrollment including Model Schools is considered.

The following table shows the distribution of students by departments:

	1898-1899.	1899-1900.
Normal Department .....	274	302
Preparatory (not admitted to Normal) .....		3
Model Department:		
Grammar Grade .....	62	54
Intermediate .....	41	38
Primary .....	46	47
Kindergarten .....	68	69
	217	208
Total, none counted twice .....	491	513

## GRADUATING CLASSES.

For reasons not easy to determine the higher classes in this school have been relatively very small. The small number of high schools in this portion of the state has had something to do with this condition, no doubt, but in connection with this there are probably other causes. The policy has prevailed for a long time in the school of advising students who have not had experience to go out and teach on the completion of the Elementary Course. This policy is suicidal so far as third and fourth

*River Falls Normal School.*

year classes are concerned. To advise students to go out and teach where it is possible for them to continue to the end of the course is almost tantamount to advising them to withdraw permanently from the school, for statistics show that of the people who have completed the Elementary Course and taken out the Certificate only nineteen per cent. have ever returned and taken the Diploma. This policy has been changed and students who show good capabilities are advised to continue, if possible, and secure the Diploma. For the first time since the school was organized the number of Diplomas granted has exceeded the number of Certificates, the former being twenty-six and the latter twenty-four. Of the persons to whom Diplomas were given ten were admitted to the Normal as graduates of high schools.

During the two years there have been conferred thirty-three Diplomas and fifty-four Elementary Certificates.

## THE PROFESSIONAL WORK.

The only excuse for the existence of a Normal School lies in the fact that a body of doctrine is inculcated through the lines which are popularly denominated The Professional Work. The Academic Work alone could not justify these separate schools as it can be done to good advantage in the high schools. In the present condition of Normal Schools in Wisconsin it is impossible to dispense with the Academic studies and the effort is consequently made to treat these subjects with a view to the manner in which the student will present them when he becomes a teacher.

During these two years a strenuous effort has been made to bring about a condition of hearty coöperation between the so-called Professional and Academic lines of work. It is believed that this effort has been to a reasonable degree successful, and has brought about a union of departments, each one of which is taught in such a way as to make the isolation of one department not only inadvisable but impossible. The fact that heads of Normal Academic Departments are called upon to assist to whatever extent time will permit in the inspection of practice and are expected to make reports upon their inspection is in a measure indicative of the harmonious relations which exist among the several lines of work.

Some condition of the Practice work is shown by the following statistics, compiled for the year 1899-1900:

Whole number of practice teachers for the year .....	93
Whole number of practice classes .....	306
Whole number of weeks of practice work .....	1,647
Average time of practice for each practice teacher in weeks .....	17.15
Maximum time of practice by one pupil in weeks .....	40
Minimum time of practice by one pupil in weeks .....	5
Whole number of practice teachers successful .....	65
Whole number of practice teachers unsuccessful .....	28
Whole number who have taken observation .....	152



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*River Falls Normal School.*

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## GRADUATES.

During the quarter of a century the school has existed it has sent forth a body of graduates whose enthusiasm, capability, professional spirit and energy have made them felt in almost every school interest, in Wisconsin. The graduates are found in the faculty of the State University, in Normal School professorships, in Colleges, in City and County Superintendencies, in Principalships of High Schools and in special work in the High School departments, in the Grades and in the Country schools, and, almost without exception, they fill these positions with great credit to themselves and honor to the school which gave them their initiative in professional directions. The superiority of their instruction has given the school a standing which makes a demand for its product in excess of the supply, last year many calls having been made for holders of the documents from this school in excess of the teachers available. The best advertisement of any school is its product.

## MODEL SCHOOLS.

That two hundred children, ten per cent. of the population of the city, annually attend the Model Schools, and with the exception of the Kindergarten, pay tuition for the privilege, in spite of the fact that there are good free schools in the city, is a substantial tribute to the excellence of the instruction, as well as to the friendly attitude of the citizens toward the Normal and its interests.

## THE FACULTY.

If strong character, high teaching power and definite coöperation are the most serviceable conditions obtainable in a corps of teachers, the River Falls Normal is fortunate in possessing such a teaching force. It is contrary to the present policy of the school to make numerous and sweeping changes in the faculty, it being thought that a body of people who have long served in a school, other things being equal, will be able to work in its interests to better advantage than those who know less of the needs of the school and who are less known to its clientele.

Stability of position leads to better results than can be secured where teachers are doubtful concerning their tenure of office. If teachers presume upon permanence and grow indifferent or idle the remedy is not hard to find. But the fact that teachers remain year after year, and their names become intimately associated with the institution, gives it a stability which appeals directly to the young people who are seeking educational advan-

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*River Falls Normal School.*

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tages. The average of service in this faculty at the present time is nearly six years.

In conclusion permit me to say that the loyal attitude of the faculty, the earnest spirit of the students, the magnanimous treatment given me by the Board of Regents, have made the duties of these two years peculiarly agreeable.

Respectfully submitted,

W. J. BRIER,

*President.*

Aug. 31, 1900.

*Stevens Point Normal School.*

REPORT OF PRESIDENT OF THE STEVENS POINT NORMAL SCHOOL.

August 31, 1900.

Hon. F. A. Ross, President Board of Regents of Normal Schools.

Sir:—I have the honor to submit the following report of the State Normal School at Stevens Point for the biennial period ending August 31, 1900:

Enrollment for year ending June, 1899.

Normal Department.....	403	
Model School.....	168	
Other classes.....	44	
	<hr/>	615
High School Graduates.....		128
Different High Schools represented.....		48
Whole number of graduates receiving Diploma.....		38
Average amount of practice teaching.....		38 wks.
No. receiving Elementary Certificates.....		37
Average amount of practice teaching.....		23.8wks

Enrollment for year ending June, 1900:

Normal Department.....	377	
Model School.....	177	
Other classes.....	90	
	<hr/>	644
(Including 75 children in Practice Department of Public School, but wholly under instruction and care of the Normal School.)		
High School Graduates.....		120
Different High Schools represented.....		48
Whole number of graduates receiving Diplomas.....		27
Average amount of practice teaching.....		36.5wks
Whole number of graduates receiving Certificates.....		37
Average amount of practice teaching.....		27.4wks

As will be seen from the tables of attendance given above, there is no great variation from year to year, except as the number of students in the first year and preparatory classes is slightly smaller. This decrease of attendance, as will be seen from an examination of the catalogs in which all the facts are given in detail, seems to correspond closely with the decrease in the number of students attending from the county in which this school is located. This, perhaps, is not to be greatly regretted and seems to be due, in the main, to raising the standard of the school by cutting off a part of the preparatory course and discouraging attendance below the normal grade from all localities where suitable local schools are provided, furnishing preparation for entrance to the normal department.

The addition to the building, planned by the Board of Regents some three years ago or more, and provided for by the appropriation made by the last legislature in the winter of 1898-9, promises now to be in readiness for use by the school during the coming year. This will offer needed relief from the overcrowded condition of the main building for the past two or three years and will provide additional facilities for several departments

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*Stevens Point Normal School.*

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whose classes are now obliged to recite in the basement or attic of the main building, or in rooms which are needed for the proper development of the model school. All concerned in the administration of this school are anticipating with much pleasure the early completion of the new building.

The arrangement entered into with the Board of Education of the City of Stevens Point, by which the Practice department was extended into the public schools, has proved to be mutually helpful and satisfactory. Pleasant relations have continued throughout the year, and the arrangement has been renewed for the ensuing year. A great advantage for the Normal school is found in the fact that this puts within our reach six divisions, of three grades,—namely, Lower, Intermediate and Primary. In these practice is most needed by the Normal students because the call for good teachers of those grades is constant and imperative.

During the year about fifty different students were assigned to service in the public school practice department; giving a total of 919 weeks of practice teaching, about one-third of the whole amount of practice teaching at Stevens Point. The students, "practice teachers," have charge of the rooms a part of the time, and teach both with and without immediate oversight, and are in all respects while at work surrounded by precisely the same conditions as public school teachers, except for the consultations, criticism and advice of the critic teacher in charge. I see no reason to change my former opinion that this experiment may lead to a great extension of the training departments of the Normal Schools in Wisconsin, and to a large increase in the actual training in teaching available for our students.

An examination of the records, as published in the annual catalogs, shows that for the past year the graduates from the several courses of this school were employed in teaching in the public schools of thirty-eight different counties of the state. At the same time under-graduates of the school were teaching in nearly or quite all of the fifty-seven counties from which, at different times, students have come to attend this school, and in some counties in the northern part of the state from which no students have ever been received. Of the eighty-nine persons to whom diplomas have been issued prior to January, 1900, that is during the previous four years, fifteen were employed during the past year as principals or assistants in high schools, two were serving as county superintendents, a few in ungraded country schools and nearly all the rest in the graded city and village schools. Some have temporarily withdrawn from teaching to pursue further studies at the State University or other higher educational institutions. Of the under-graduate body of students not now members of the

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*Stevens Point Normal School.*

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school, but who have attended for a longer or shorter period, a very large proportion are engaged in teaching in the country schools of the counties from which they came.

That the district immediately adjacent to Stevens Point is affected in no small degree by the preparation given at this Normal School will appear from the statement that of 115 teachers actually employed in the schools of Portage county, outside of the city of Stevens Point, during the past winter, 66 or nearly 60 per cent. of the whole number were former students of this State Normal School. Of these, four were graduates. If it be conceded that some of those have begun teaching too soon, with insufficient preparation, it remains true that nearly all have carried into their schools higher ideals and a knowledge of conditions and methods of teaching which must be of great service to the schools of the county. As the result of careful inquiry, in which I endeavored to reach every person who had at any time been a student in the Normal department of this school, it appears that the whole body of students, graduates and under-graduates, have, since entering this school, taught upwards of 6,500 months in the public schools of the state. This is fairly equivalent to a full year's work for more than 800 teachers. These figures show that no small effect has already been produced upon the teaching in the public schools of the state by the opportunities furnished for professional training at Stevens Point.

On behalf of the students and teachers of this school, whose efforts are made effective and fruitful through the watchfulness and constant services of the members of the Board of Regents, I desire to express to you and to the Board our full appreciation of your more than official interest.

Respectfully submitted,

Theron B. Pray,

*President.*

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*Superior Normal School.*

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## REPORT OF PRESIDENT OF THE SUPERIOR NORMAL SCHOOL.

Hon. FRANK A. ROSS, President Board of Regents of Normal Schools.

*Dear Sir:*—I beg to submit the following report of the Superior State Normal School for the biennial period 1898-1900:

## ATTENDANCE.

The attendance of this school has increased steadily and conservatively from the first year of its existence. The enrollment in the Normal department has not yet reached the limits of its accommodations. The building was originally planned for a fair sized school and the maximum of attendance will probably not be reached for a year or two. It is thought that it would be good policy for the school to establish a waiting list and admit persons in order of their application, when the attendance reaches the capacity of the building. Last year the students came from twenty-nine different counties in the state. There were three hundred twelve in the Normal department and one hundred seventy-four in the Training department. More than two thirds of the students in the Normal department are either teachers of experience or High school graduates. The average age at the beginning of the third quarter last year was twenty years.

## TRAINING DEPARTMENT.

The success of the Training department, or Model School, is a matter for congratulation. From the first opening of the school until the present time it has been necessary to maintain a waiting list and admit boys and girls in the order of their application for the grades. When we recall the fact that the building stands apart from the thickly settled portions of the city, we have a means of measuring the interest taken by the patrons of this department. The Training department is conducted as a first-class graded school should be. Students must here show skill in teaching and in managing in order to be good candidates for graduation. Classes are large so that the problems they meet are actual.

## TEACHERS IN COUNTRY SCHOOLS.

The County Superintendent of Douglas County informs me that only five of the teachers who attended the Douglas County Institute during the month of August had not been Normal students. The fact that nearly every undergraduate who withdraws from school goes to the country dis-

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*Superior Normal School.*

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tricts to teach indicates that the school is serving the educational interests of Northern Wisconsin as the founders of Normal Schools in this state planned. Some of the full course graduates and many of the elementary graduates have gone into the district schools of Douglas and adjoining counties. The township system of school organization is operating in this and neighboring sections of the state. The school districts are large and the wages paid teachers are sufficient to induce a person of some special training to gain experience in the rural schools. School officers have found that young men and women with Normal training conduct better schools than the persons who have not had such training, and discriminations are made in many instances in favor of individuals who have made a study of the business of teaching.

## EQUIPMENT.

The equipment of the Seventh Normal School is modern. The material was bought when prices were very low and much could be had for the money. Every piece of apparatus is usable and a sufficient quantity is provided for each student to perform his own experiments. It must be understood, however, that in the original equipment of the building there was no provision for the sharp demands that are now made on Normal Schools for Kindergarteners, and for teachers who can conduct classes in manual training. This school at a comparatively small expense can support a first class Kindergarten and make a good start in a manual training course. The next lines of equipment should be in meeting the needs of public schools in these two directions.

## FACULTY.

In the selection of the faculty of this school the constant aim has been to secure men and women who, in addition to the necessary Normal and other academic training, have had successful experience in the various lines of public school work. The great function of the Normal School is to train teachers. No one is competent to enter upon such important work, no matter what his scholarship may be, until he has served the necessary apprenticeship and journeymanship in the public school systems of this country. There is in consequence of the training and make-up of the faculty of the institution a co-ordination of all of the departments with the actual work of teaching.

## LIBRARY WORK.

Two years ago the Board of Regents authorized the employment of a skilled librarian to take charge of the library work and library readings of

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*Superior Normal School.*

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this institution. The effect of this action is that the library is serving the purpose of a most useful adjunct to every department. Instruction by the librarian is given to the students of the school in how to use the library to the best advantage. In connection with the work in critical literature and reading, ten weeks' time is spent in the class room in a study of children's literature. Students are brought in contact with the leading books for the various grades of the elementary school and are made to feel the importance of the teacher's leadership in the matter of arousing and maintaining interest in suitable reading for the boys and girls in our graded and rural schools.

## LECTURES AND ADDRESSES.

During the past two years the Superior Normal School has been fortunate in securing addresses and lectures from eminent men and women from all parts of the United States. The location of the school at one of the great gateways to the east and the west brings many people of public note to Superior. Public spirited citizens co-operate with the school authorities and induce them to visit this institution for the purpose of meeting the student body.

## ORGANIZATIONS IN THE SCHOOL.

An organization by young men, known as the Athena, did good work during the last year. Membership in this society is by vote of the student members and only men whose mental tastes are approved by the club are invited to enter it.

A reading club for young women known as the Third Story Club, has maintained a vigorous existence during the past two years. The aesthetic influence of this organization is felt in the regular oratorical work of the school.

The board of editors of the "Gitche Gumee" have made it an excellent quarterly magazine. The publication takes easy rank with school periodicals published elsewhere and reflects great credit upon the students who conduct it and upon the institution.

The regular Athletic Associations are supported by the young men and women of the school. The most popular athletic sport in this institution is that of basket ball.

## ADVANTAGES OF SUPERIOR FOR NORMAL SCHOOL PURPOSES.

The substantial growth of the Superior State Normal School arises in part from its natural advantages in location. Here are found great ship-building and milling industries; and here "sail meets rail." Many hun-



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*Superior Normal School.*

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dreds of carloads of the product of farm, forest and mine are daily shipped by water from this point; while fleets of ships discharge cargoes of coal and other merchandise. The manufacturing of great steamboats, chairs, farming utensils, stationary engines, barrels, grass twine, brooms, wind-mills, and many other necessities of business and home, gives one who studies the question, a comprehensive notion of what manufacturing means.

The social side of Superior is of value. Here is a restless young city which has outlived the first flush of extravagance and is finally settled down to a steady growth. Churches, theatres, social clubs, public entertainments, lectures, and public functions that characterize cosmopolitan life, attract attention here. The electric street car lines give rapid transit to all parts of the city at one fare. City water works, electric light, and steam-heated houses add much to the comfort and conveniences of life. Paved streets and level roadways invite outdoor exercise in walking, bicycling, or driving. The steady winter, not characterized by sudden changes, is enjoyed. The large and well equipped public school system, working in harmony with the Normal School, makes it possible for individuals, training here to teach, to study some great problems in education by actual contact with them.

GRADUATES.

During the past two years the total number graduating is:

Full Course.....	47
Elementary Course.....	17

The total number of graduates since the school was organized is:

Full Course.....	66
Elementary Course.....	33

One fact to which your attention is called is this. Only a small percentage of the enrollment of a Normal School continues long enough to complete a course. A great many men and women avail themselves of the opportunity to improve in ability to teach and then go back to the rural schools from which they come. In this connection it is no doubt interesting to know that 132 undergraduates who left the school have done 2,860 months' teaching since they were enrolled. A careful personal canvass of the matter proves beyond any reasonable doubt that the Normal School does great good through the higher ideals and better equipment the undergraduate teachers carry to the rural schools.

Respectfully submitted,

I. C. MCNEILL,  
*President.*

August 31st, 1900.

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*Whitewater Normal School.*


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**REPORT OF THE PRESIDENT OF THE WHITEWATER NORMAL SCHOOL.**


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Hon. FRANK A. ROSS, President Board of Regents of Normal Schools.

*Dear Sir:* — According to custom, I submit the following report upon the condition and work of the Whitewater Normal School for the *biennium* closing August 31st, 1900.

The history of the school for this period has been one of quiet prosperity, marked by great harmony and earnest co-operation on the part of both teachers and students. The extension and improvement of the building, completed by the installment of steam heating in all parts of the building, has put us into very comfortable condition for work. The building has been utilized to its full capacity and yet has not been overcrowded. The health of the school has been excellent. The spirit of the student body has been admirable; and it is believed that the school has never brought forth better results than in the past two years.

*Enrollment.*

Normal Department.	1898-99.	1899-1900.
Post-graduates.....	3	6
Senior class.....	49	49
Junior class.....	72	97
Second year classes.....	90	70
First year classes.....	109	96
Special students.....	3	2
Preparatory class.....	37	21
<b>Totals.....</b>	<b>363</b>	<b>341</b>
Number of ladies.....	238	227
Number of gentlemen.....	125	114
<b>MODEL DEPARTMENT.</b>		
Grammar grades.....	38	47
Intermediate grades.....	55	51
Primary grades.....	73	66
<b>Totals.....</b>	<b>166</b>	<b>164</b>
<b>Total in Normal department.....</b>	<b>363</b>	<b>341</b>
<b>Total in all departments.....</b>	<b>529</b>	<b>505</b>
<hr/>		
Sources of Membership.	1898-99.	1899-1900.
Admitted on entrance examination.....	13	15
Admitted on high school diplomas.....	57	60
From 2d and 3d years of high school.....	27	22
On 1st and 2d grade certificates.....	6	12
Promoted from preparatory department.....	20	16
From other Normal Schools.....	2	2
Miscellaneous.....	.....	.....
	125	127

*Whitewater Normal School.*

Analysis of these figures, and comparison with those of former reports, shows that the ratio of high school graduates to other students entering is steadily increasing, reaching 47 *per cent.* during the past year. Correspondingly, the number entering by way of the Preparatory department is decreasing, dropping to 12 *per cent.* of the whole the past year.

*Age at Admission.*

The average age of those admitted in 1898-9 was... 19.3 years.  
 The average age of those admitted in 1899-1900 was... 19.9 years.  
 The average for the last fifteen years is... 19.7 years.

*Graduation.*

The sanction of the school has been granted as follows:

	1898-9.	1899-1900.
Certificated (Elementary Course).....	40	46
Graduated (Advanced Course).....	26	42
	66	88

*Occupation of Graduates.*

(Classes from 1870 to 1900 inclusive.)

Graduated from Advanced Course.....	416
Have not taught since graduation.....	15
Still in the teaching profession.....	239
Have completed college or professional courses.....	46
Now in college or university.....	9
Have entered other professions.....	25
Women who have married and left the profession.....	80
Deceased.....	26
Completed the Elementary Course only.....	521
Have not taught since Certification.....	32
Are pursuing the Advanced Course.....	20
Have completed college or professional courses.....	17
Still in the teaching profession.....	270
Men who have entered other professions.....	19
Women who have left the profession by marriage.....	131
Deceased.....	34

DEVELOPMENT OF THE LIBRARY.

Perhaps the most marked feature of progress during these two years has been the growing and more general use of the library. This school has never been behind others, nor behind the times, in its appreciation of the library as an instrument of culture. We do not believe that any school in the West has had a better selected or a better used library; but the placing of first one and then a second woman, trained in modern library meth-

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*Whitewater Normal School.*

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ods, at the service of the students has surprisingly increased their use of both books and periodicals, and made the library a more vital part of the school machinery.

During the past year, the average number of charges made each month is as follows: Books (bound volumes), 2,828; Periodicals (unbound), 1,827, making a total of 4,655 monthly. Of course this takes no account of the constant use of books not taken away from the library. The number of volumes now in the library is about 6,500, which number should be largely increased as rapidly as possible.

#### KINDERGARTEN NEEDED.

The Whitewater school yet lacks one valuable appurtenance, a kindergarten. There is no question among intelligent educators as to the wisdom, and almost necessity, of supplementing our public school system, in every town of 2,000 population or more, with the kindergarten or sub-primary school. Many small cities as well as large ones in our State have already recognized this need, and the Normal Schools ought to be exerting a greater influence in this direction than they have yet done. The Milwaukee School has a Kindergarten Training Department, which is well and sufficient. The State needs but one such department. But every Normal School needs a working kindergarten as an adjunct to and part of its Model School. It is an indefensible condition of things that Normal School graduates should be sent out to take positions as principals of graded schools, or as primary teachers, or as teachers in any grade, without any observation or direct knowledge of what a kindergarten is. The argument need not be expanded here, but it is earnestly hoped that the Board of Normal Regents may soon find means of establishing a kindergarten in connection with this school.

#### THE SCHOOL GROUNDS.

The grounds of the Whitewater school are well known for their beauty and for the efficient care which the Board has enabled us to bestow upon them. The five acres in front of the building are kept as a shaded lawn with constant watering and lawn-mowing. The five acres to the rear have been kept, as nearly practicable, in the natural wild state. The mortality among the black oaks so prevalent of late in southern Wisconsin, however, is thinning out the grove to such an extent that active measures must be taken at once for filling up the gaps by planting trees of other and more reliable species.

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*Whitewater Normal School.*

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Thus far, all trees and shrubs planted in these grounds — and we have now more than 100 species established — have been contributed or paid for by the students and teachers. This new demand for replanting the grove may, however, prove beyond the ability of the school and call for some expenditure, at the opening of another spring, on the part of the Board.

Respectfully submitted,

ALBERT SALISBURY,

*President.*

August 31st, 1900.









REPORT

OF THE

STATE VETERINARIAN

OF THE

STATE OF WISCONSIN.

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1900.



MADISON  
DEMOCRAT PRINTING COMPANY, STATE PRINTER  
1901

## LETTER OF TRANSMITTAL.

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MARINETTE, WIS., JANUARY 4, 1901.

*Office of State Veterinarian.*

To his Excellency, EDWARD SCOFIELD,

*Governor of Wisconsin:*

I have the honor to submit as required by law the sixteenth annual report of this office.

In order to convey a correct idea of the doings of the office, it will be necessary to reproduce some of the work in tuberculosis in cattle and glanders in horses not completed in former years.

Yours very respectfully,

DR. H. P. CLUTE,

*State Veterinarian.*

## REPORT.

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The office of state veterinarian was created by the enactment of chapter 476 of the laws of 1885, which was amended by the enactment of chapter 76 of the laws of 1887. The first appointment being made April, 1885. Since then the work of the office has necessarily grown, as the stock interests of the state have increased immensely in the past few years.

The work of the office has become so great that it is impossible for the state veterinarian without assistance to anywhere near do the stock interests of the state justice. The only way I can come near doing the people justice, is to make calls of long duration and of recent dates in the same locality at the same time, thus save covering the road for each call. I am from six weeks to two months behind in the work most of the time. It is very necessary that this office have help in the way of assistant veterinarians, as stock being quarantined any length of time pending the investigation of the state veterinarian not only causes dissatisfaction to the stock-holder, but wreaks a hardship upon the owner, and the loss of time and use of stock and larger mortality by the spread of the contagion. This can be avoided by the aid of assistant veterinarians located in different parts of the state on a per diem and expense when on duty, and in many cases the cost of per diem and expense of the assistant would not be more than the railway expenses of the state veterinarian. Such a bill was introduced in the legislature of 1898, passed the committee of public health and sanitation in the senate and was killed by the committee on claims, after being referred twice to said committee. The chairman being opposed to the bill.

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*General Report.*

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It would be wise to recommend the introduction of a bill in the next legislature providing for ten assistant veterinarians. One to be located in each congressional district, subject to call by the state veterinarian on a per diem and expense when on duty. The law as it is at the present time allows consultation at \$7.00 per day and expenses, but to make it consultation it necessitates that the state veterinarian be present, while if they were assistants they could test cattle for tuberculosis without his covering the ground until after the test was made and post mortems ready to be held, and in many cases would save the veterinarian making a call where there are suspected contagious diseases, and on examination it is found that no contagion exists.

This would give the state veterinarian more time to look after the correspondence of the office, which at the present time cannot be properly attended to with his mail being forwarded around the state, and sometimes following him for a couple of weeks before it is attended to.

The time has been taken up in the investigation of suspected contagious and infectious diseases, of which the most of the calls have been to those in the order named, — tuberculosis, hog cholera, glanders, actinomycosis, blackleg, anthrax, scab and foot-rot in sheep, huss or lungworm in bovine and sheep and rabies and the correspondence of the office.

The largest percentage of the correspondence has related to tuberculosis in cattle, which has been gradually on the increase the past few years. The disease increases so gradual that the owner, especially when not located near, or where he can solicit the aid of a competent veterinarian loses one or two animals before he is aware that the contagion exists in his herd. He then will awaken to the fact that he has introduced the dreadful scourge in the herd, and the chances are that it has been done by bringing an animal from an infected herd which was in the

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*General Report.*

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incipient stage of the disease when purchased. The proposition then strikes him how he can get rid of the disease in his herd with the least cost to himself; the result being the case is reported to the local health officer or chairman of the board, and through him to the state veterinarian. On making an investigation where the above conditions occur, I have found on applying the tuberculin test from twenty-five per cent. up to one hundred per cent. which occurred in one instance of the herd infected with tuberculosis. This case being in a herd of Jerseys belonging to Mr. Farnhan of Merrimac, where eighteen head were tested by Dr. Russell of the experimental station, all reacted to the test, and were slaughtered and post mortemed by Dr. Russell and myself. All developed a very advanced stage of the disease, which the post mortem verified. In all the reacting cases where the temperature has risen two degrees by applying the test, I have held post mortems to verify the diagnosis. The result has been, that I have left the owner as well as others that have visited the post mortem satisfied that the disease existed. Through the tests and post mortems conducted by me, work of the state board of health, and Dr. H. L. Russell of the experimental station, we have done a great deal to warn the stock interests of the state how to protect themselves against the introduction of the disease into their valuable herds, as well as the eradication of the same. No breeder should take a strange animal into his herd of cattle for breeding, or other purposes without first having the tuberculin test applied. The result of the work of the past two years has caused an increased demand for the tuberculin test to be applied to herds where there is no known infection, as well as infected herds, showing the breeders and dairymen are awakening to the necessity of protecting themselves against the loss of stock and carrying of the infection into their families, and the consumers of the product of the dairy.

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*General Report.*

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Our percentage of tuberculous stock in Wisconsin at the present time (with figures to follow) shows the percentage in this state to be, basing the percentage in herds tested in different parts of the state where there is no known infection, as well as those where there are infected animals, to be 7 and 29-100 per cent., a much smaller percentage than in the older dairy states, which is very favorable, considering that by the last census Wisconsin ranks fourth in the number of milch cows in the United States. The only states having more milch cows going up the scale are Illinois, Iowa and New York. I am satisfied at the present time that the average dairymen who have taken any pains to enlighten themselves on the subject of tuberculosis are willing to co-operate with this office to reduce the disease in the state to a minimum, and it can be done by giving this office help through the next legislature at a very small percentage of what it will cost if it runs a few years longer without taking any further steps to check the spread of the contagion. The next legislature will be called upon to pass a bill to compel a certificate of health to come with every animal brought into the state for breeding, or dairy purposes, as well as other animals shipped into the state, which are not shipped in for slaughter. In that way the importation of contagious diseases can be checked in a large measure. There are several states that we cannot ship cattle to without a tuberculin test, and the people of this state are entitled to the same protection asked by other states.

Cattle tested when there was known infection:

General Report.

TUBERCULOSIS.

Names.	Breed.	Tested.	Reacted.	Appr'sed.
Mr. Berens, Kaukauna.....	Grades & Jerseys.	1	1	\$35 00
Frank Piper, Kenosha.....	Grades & Jerseys.	23	11.	243 00
Joe Preston, Spring Green.....	Grades & Jerseys.	1	1	27 00
Geo. C. King, Sparta.....	Grades & Durham	1	1	40 00
Mrs. Lizzie Hoffman, Burk.....	Grades & Holstein	12	2	30 00
J. M. Powers, Prairie du Sac.....	Grades & Jerseys.	5	4	87 00
Mrs H. Stack, Madison.....	Grades & Jerseys	1	1	15 00
F. Walszak, Milwaukee.....	Different Breeds.	8	2	35 00
Adam Engle, Milwaukee.....	Different Breeds	1	1	24 00
H. Mayer Dairy, Milwaukee.....	Different Breeds.	23	2	55 00
Wm. Bolker, Verona.....	Different Breeds	1	1	15 00
E. Parker, Janesville.....	Different Breeds.	23	2	25 00
Mrs. O. Gripe, Milwaukee.....	Different Breeds.	1	1	36 00
Jacob Jenny, Cudahy.....	Grades & Jerseys.	1	1	38 00
J. Thompson, Token Creek.....	Grades & Jerseys.	11	6	165 00
E. Shores, Ashland.....	Grades & Jerseys.	1	1	50 00
Richard Hoffman, Genoa Jct.....	G a l e s	26	9	350 00
Watson & Dillingham, Baraboo.....	Durham.....	1	1	50 00
Ellis Owen, Dodgeville.....	Jersey.....	1	1	37 50
W. Laven, Appleton.....	Grades.....	12	4	110 00
F. L. Shadel, Milton.....	Durham.....	1	1	6 00
J. Bushman, Wrightstown.....	Durham.....	1	1	20 00
R. G. Randolph, Utica.....	Grades.....	10	2	75 00
W. T. Sherman, Janesville.....	Durham.....	29	12	620 00
J. C. Upphoff, Cottage Grove.....	Durham.....	18	5	210 00
S. J. Upphoff, Cottage Grove.....	Grades.....	26	5	48 00
S. M. Swarthout, Midway.....	Jersey.....	35	3	120 00
S. Hazen, Lodaga.....	Holstein.....	2	2	30 00
S. K. Severson, Dodgeville.....	Holstein.....	12	2	49 00
Bachaud Brewing Co., Fond du Lac.....	Jersey.....	27	7	250 00
P. Trimmer, Fond du Lac.....	Grades.....	1	1	35 00
C. A. Burrows, Plainfield.....	Jersey.....	1	1	26 00
H. Weiner, Marshall.....	Holstein.....	28	12	326 00
Wm. Droster, Burke.....	Jersev.....	13	5	.....
M. Duffies, Markesan.....	Durham.....	18	2	.....
J. A. Dickerson, Chester.....	Grades.....	15	1	.....
Mr. Griffith, Fond du Lac.....	Jersey.....	45	7	.....
Cook Bros., Oconto.....	Grades.....	3	3	105 00
W Morehouse, Oconto.....	Jersey.....	1	1	50 00
Albert Stillwell, Waukesha.....	Grades.....	15	8	282 00
L. McKeith, Galesville.....	Grades.....	1	1	30 00
H. Rood, Sun Prairie.....	Grades.....	9	4	168 66
Father Miller's Herd, Waukesha.....	Durham.....	33	18	.....
T. Mayers, Paynesville.....	Grades.....	8	1	.....
Mr. Farnham, Merrimac.....	Jersey.....	18	18	.....
Mrs. Griffith, Markesan.....	Jersey.....	23	14	.....
S. K. Simonson, Spring Green.....	Grades.....	13	11	.....
		586	210	

*General Report.*

Cattle tested where there is no known infection:

Tested by	Tested.	Reacted.
Dr. W R. Pick, V. S., Lodi.....	900	28
Drs. Orr & Hemmy, New London.....	180	3
Dr. E. W. Flack, Manitowoc.....	14	
Dr. T. R. Wrigglesworth, V. S., Eau Claire.....	49	1
Dr. W. J. Butier, V. S., Fond du Lac.....	34	
Dr. Newton, D. V. S., States Prison, Waupua.....	25	2
Dr. S. Beattie, V. S., Madison.....	325	
Dr. D. Roberts, D. V. S., Waukesha.....	165	
Dr. E. D. Roberts, D. V. S., Janesville.....	213	5
Dr. S. J. Collins, V. S., Reedsburg.....	250	4
Dr. Charles Schmidt, V. S., Dodgeville.....	254	7
Dr. J. M. Armstrong, V. S., Richland Center.....	284	
Dr. H. P. Clute, V. S., Marinette.....	391	14
Dr. G. Ed. Leech, D. V. S., Milwaukee.....	140	3
Dr. Wm. Wilson, M. D. C., Menomonie.....	76	1
No known infection before testing.....	3,224	68
Where there was known infection before testing.....	586	210
Grand total.....	3,803	278

Averaging herds where there is no known infection und those where the infection is apparent before testing.

Considering the number where there is no known infection to be nearly six times as many as where there is known infection, and a large part of the cattle where there was no known infection to be picked stock, mostly milch cows for shipment to Illinois, I think it is fair to presume that the percentage of reactions is as near as we can get to the percentage of tuberculosis in this state.

These tests have been made in all parts of the state, and I consider that 7 and 29-100 per cent. to be a fair estimate of the infection at the present time. While the percentage is not so large as it is in some other states, it is far too large to let go without using the most strenuous measures to eradicate the disease, which if something is not done to stop the spread of same, it will cost the loss of hundreds of thousands of dollars in the loss of cattle, as well as the most important part cost the loss of life to the human family.



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*General Report.*

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Considering the contagion is communicated direct from the bovine to the human family, an accepted fact of the medical profession of today.

**HOG CHOLERA.**

Hog cholera has been quite prevalent in some counties in this state. These statistics of the loss is not complete for the past year, so cannot give them. The contagion has not been as widespread as in 1898 and 1899, although the loss has been quite heavy in Green Lake, Fond du Lac, Buffalo, parts of Rock, Iowa, Trempealeau and La Crosse counties. I am satisfied that the contagion is spread in many instances by the stock cars that hogs are shipped in that are infected. The farmers in many cases sell their whole drove of hogs as soon as they find they have the disease in the drove, selling at a low price to get rid of them before they die, and keep it as quiet as possible. In those cases it is rarely brought to the attention of the authorities.

I was informed during the past summer, and upon investigation found it to be true, that hogs that were infected with hog cholera were shipped from various stations in Green Lake and Dodge counties and in lots of cases hogs died in the stock-yards and on the cars, nothing being said about it. The drovers bought the hogs for about one-half price and ran their chances on getting rid of them before they died. A hog affected with cholera will revive for a few hours after being put in a car and shipped. The excitement and motion of the cars have that effect upon them, thus the drovers take the chances. It is plain to see that cars infected in that way are seldom cleaned until they are returned for another shipment, in most cases to other localities, and sometimes cleaned there before re-loading, and the manure drawn away by farmers and the deadly hog cholera bacteria with it, and in other cases tracked from the cars on

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*General Report.*

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the feet of men loading hogs and carried home to their own swine, and thus the contagion spreads. The railroad company should be compelled by the enactment of a law to clean and disinfect cars after shipment of hogs at dumping grounds which they have for the purpose of cleaning cars at the present time. The hog raisers as well as the shippers which I have consulted in regard to the above are in favor of a law of that kind, as the cars become very filthy before they are cleaned. I have seen many with six inches of manure in them. I have issued a bulletin on hog cholera and distributed it largely in the hog cholera districts.

BULLETIN ON HOG CHOLERA.

Hog cholera and swine plague are caused by different bacteria, but they are equally dependent for the success of their attacks to the unhealthiness of the hog, due, in most instances, to unwholesome food and filthy surroundings. The disease will attack hogs that are kept in the best of condition when the surroundings become thoroughly infected, although the danger can be greatly eliminated by thoroughly disinfecting pens and by antiseptic treatment of healthy hogs. The germs are easily spread over large territories, being carried by cars, wagons and in the clothing of men who have been handling hogs, on the shoes of men who have been among infected hogs, often by stock buyers coming from among affected hogs. Dogs and birds often spread the contagion, in fact anything that comes in contact with the faeces of infected hogs is a conveyer of the contagion. Frequently the outbreak may be traced to the importation of hogs from infected districts, again, it will be carried a long distance by running streams.

SYMPTOMS.

The period of incubation runs from three to fifteen days. The animal shivers, nose hot and dry, and soon refuses food, lies

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*General Report.*

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under litter, eyes sunken, gate unsteady, redness of skin on lower part of neck and inner part of thighs. Usually a hog so affected begins to cough when started from litter or suddenly startled. A constipated condition of the bowels changes to diarrhoea as the disease progresses. The animal loses flesh rapidly, if it lives five to fifteen days; ears present a swollen condition, reddened parts turn purple, and finally pieces of ears slough off and flesh slough from affected parts, and the animal often loses use of hind parts as if spine was affected.

## POST MORTEM.

Show lungs to be inflamed, the spleen often enlarged, and the mucous membrane of the large intestines is covered with numerous ulcers. In some cases where the animal succumbs quickly, very hard and dry places are found in the intestines.

## PRECAUTION.

To protect hogs from this disease it is necessary to observe the following recommendations: The hog should not be watered at running streams, as the germs are readily conveyed by this means.

Persons coming from infected districts should not be allowed to come in contact with your hogs and you should not go among your neighbors hogs if they are sick. When other hogs are brought to your farm assume that they may have been exposed and keep them away from your other hogs for at least six weeks. Observe as much cleanliness as possible in regard to food and surroundings. Feed a mixture of soft, sloppy food and without heavy grain feeding.

Disinfect the quarters of the hogs by sprinkling liberally with a five per cent. solution of carbolic acid and use a two per cent. solution of the same for washing hogs. Whitewash pens with

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*General Report.*


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solution of whitewash, two ounces of carbolic acid to a pail of whitewash; also sprinkle pens liberally with chloride of lime every three or four days.

## TREATMENT.

The hogs showing any of the symptoms described should be separated from well animals. Thoroughly disinfect quarters and remove well hogs from infected pens or surroundings. All litter should be burned where hogs are affected and they should be supplied with fresh litter thoroughly disinfected. Give hogs access to soft coal, which they will eat readily. Give all the hogs the following mixture:

Sodium hyposulphite .....	3 lbs.
Potassium chlorate .....	2 lbs.
Wood charcoal.....	1 lb.
Sulphur.....	1 lb.
Glauber's salts .....	1 lb.
Carbolic acid.....	8 drs.

This should be given in soft feed in proportion of a tablespoonful once a day to every one hundred and fifty pounds of hog.

Burn or bury (very deep) all refuse from pens in which infected hogs were kept. The place of burial should be as far away from all streams as possible. The dead hogs should never be drawn over the ground, and the wagon used for hauling dead hogs should be washed with a disinfectant. Dig out the old soil in the pens and put in fresh earth. Disinfect with carbolic acid solution and allow the pens to remain vacant for at least six months after disinfection and disinfect by a coat of carbolized whitewash before occupying again. The same feeder should not attend the well and sick hogs unless his shoes are changed after each visit to sick hogs. The bodies of the dead hogs should be burned if possible, if not, bury in a long trench six feet deep, cover with quick lime and six inches of dirt, put on another covering of lime over this first dirt and fill trench.

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*General Report.*

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## LIST OF DISINFECTANTS.

(Sternberg.)

1. FIRE, complete disinfection by burning.
2. STEAM under pressure (221 F.) for ten minutes.
3. BOILING IN WATER for half an hour.
4. CHLORIDE OF LIME, a 4 per cent. solution.
5. MERCURIC CHLORIDE solution, 1 to 500.
6. CARBOLIC ACID, a 5 per cent. solution.
7. SULPHATE OF COPPER, a 5 per cent. solution.
8. SULPHUR DIOXIDE exposure for twelve hours to an atmosphere containing at least four volumes. Ten per cent. of this goes in the presence of moisture. (This will require the combustion of between 3 to 4 pounds of sulphur to each 1,000 cubic feet in space.)

## GLANDERS.

Glanders and farcey, a most virulent disease, has been prevalent in the state, but has been held down for several years by the most energetic means. The last year there have been more cases than several years past, the disease having been imported by western and range horses. At the present time we have no line inspection and there is no check on the importation of this disease. We are not aware of the fact until we find the disease and find the contagion traceable to the importation of the above named stock. In the handling of glanders where there have been a number of animals exposed, I have used the mallein test with splendid results. Where I have had animals react to the test with outshowing the physiological symptoms, I have destroyed the animals that showed the physical symptoms, and isolated the ones that reacted to the test that did not show same, and retested again at intervals of ninety days for three tests, and in one case

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*General Report.*

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horses belonging to the R. Connor Co., of Auburndale eleven re-acted out of sixty-four head. I have had the privilege of watching the eleven for two years and six months, none of them so far have developed glanders, and as they receded with each subsequent test, I have no fear that they will develop the disease. In another case five animals belonging to C. Johnson of Deforest, Dane county, which I have watched a year with the same results; these horses were exposed by a western bronco which I slaughtered with one other horse. The veterinary profession so far have found no cure for glanders.

*GLANDERS (Equina Malleus).*

Glanders (quoting from Friedberger and Frohner) is one of the oldest known equine diseases in history. Aristotle and Hippocrates were acquainted with farcey and glanders of the donkey. The Roman authors, Apsyrtus and Vegetius, have described glanders, and Vegetius recognized several kinds of glanders especially that of the nose and skin. In the Middle Ages glanders was considered, by the German laws, to be illegal unsoundness. The infectiousness of glanders was recognized as early as the seventeenth century. The investigators demonstrated, about 1764, that the virus of glanders was fixed. The susceptibility of the virus to resist the action of disinfectants varies greatly according to different authors. For practical purposes a one to one thousand solution of corrosive sublimate, or a five per cent. solution of creolin or carbolic acid, is sufficient for disinfection. Glanders is recognized as being essentially an equine disease and affects horses, mules, donkeys, and is transmitted from the horse to many other animals, as well as man, Cattle are considered immune through the natural course of the contagion. Pigs are rarely susceptible.

There is a great difference in the susceptibility of different

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*General Report.*

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horses to contract the disease. Some horses will work alongside of an infected animal for months and not contract glanders, while others constantly changing about or coming in contact with the infected animal will contract it. An animal illy kept and overworked and in a debilitated state is much more susceptible than one that is kept in prime condition, although the animal that is kept in the best of condition, if they contract the disease are the most dangerous, as they live much longer, take longer to develop the disease and may be throwing off bacillus for quite a period before the disease is discovered to be glanders or farcey.

The bringing of a large number of horses together with one or two infected ones in the lot has proven very disastrous, which has been demonstrated during the English-Boer war in south Africa, where hundreds of horses and mules have been killed. Undoubtedly the debilitation caused by the long sea voyage and the number of animals packed together aboard the transports materially aided the spread of the contagion. Glanders is oftener spread by drinking fountains, water pails and food which has been contaminated by a horse affected with the disease. A horse coming in direct contact with the discharge from a horse's nose, or from the farcey ulcers, as well as by the germ being inhaled after it becomes dried and in the form of dust; when taken in the latter form it comes in direct contact with the nasal chambers and air passages of the lungs, resulting in pulmonary or nasal glanders. When you have glanders of the skin or farcey form it is generally of the acute kind and an animal rarely lives more than six months, and may die in six weeks.

**BLACKLEG.**

Blackleg has occurred the past year in Clark, Jackson, Eau Claire, Buffalo, Trempealeau, Iowa and Oconto counties.

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*General Report.*

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It has been most prevalent in Clark, Jackson and the eastern part of Buffalo counties.

The disease is due to the bacillus of symptomatic anthrax, which was first described by Bollinger and Fesser in 1878, but its functional characteristics were determined by Arrloing, Carnevin and Thomas later. The germ is very hardy and its spores are very prolific, thus the disease is highly infectious, and will spread fast under favorable conditions. The germ of blackleg, although not unlike the bacillus of anthrax in appearance, is a separate germ and affects bovine only, and is peculiar to young stock, affecting calves, yearlings and two-year olds, and rarely older animals. While the bacillus of anthrax attacks cattle of all ages, horses, sheep, mules, goats, swine and sometimes men, the latter generally by inoculation.

#### HOW INFECTION IS CARRIED.

The spoor may live for years under favorable circumstances, often in the soil, dust about barns and sheds, in hay, grain and fodder; it may also be carried by birds and vermin and running water.

The vermin having come in contact with the germ by feeding on infected carcasses and grain that has come in contact with the disease. Low lands that are inundated during the spring months often are responsible for the outbreak of blackleg, the bacillus having been left there by the water and may have come a long distance before being deposited where it does its deadly work. Drinking from stagnant pools where the germ has been deposited by the same influences. The germ may also enter the body through abrasions or scratches, wounds or by the bite of insects that have first come in contact with the spoor from infected animals or otherwise.



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*General Report.*

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## SYMPTOMS.

The first symptoms, if the animals are closely watched, are dullness, loss of appetite followed by swellings on the thigh or shoulder and perhaps neck, hence it takes the name of black-quarter, quarterill, etc. On rubbing your hands over the parts affected, they have a peculiar crackling sound, like rubbing your hand over coarse paper, caused by the collecting of gasses under the integument. The disease is very fatal, the animal dies in from a few hours to three days; after death the animal bloats very rapidly, swells all out of semblance. If the points of swelling be cut into at this time the tissue is found to be infiltrated with a dark frothy fluid which has the characteristic odor of the disease. As said before the animal may die in a few hours, in which case the swellings may not be well marked, but on post mortem examination dark venous blood patches will be localized in the flesh.

The mortality in blackleg like hog cholera is great, after the animals are infected, but unlike hog cholera the preventive (blackleg vaccine) is sure. I have used a great deal of the vaccine the past year, and where I have found one or more animals have died from the disease the prompt vaccination of the rest of the young stock has stopped the spread in the herd. A great many stock raisers in infected districts do not wait for the appearance of the disease, but wisely use the vaccine in advance.

## RABIES.

Hydrophobia has not been prevalent in this state. There has only one case and one outbreak been drawn to my attention. First, one at Deerfield, Dane county, which was in a horse reported by A. L. Fossee, V. S. No more cases developed at that place. The only way the infection in the horse could be accounted for was by a dead skunk (polecat) found in the stable. The supposition that the polecat had bitten the horse, thus inoculating the same,

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*General Report.*

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I did not verify this by making any inoculations, as the polecat was badly decomposed.

In the fore part of March last, I was called by the Hon. L. B. Dresser of St. Croix Falls, to investigate what was thought to be rabies. There had been several dogs bitten as well as some stock. The disease proved to be hydrophobia. By strict quarantine by the health officer and killing of dogs showing symptoms of the disease and tying up of all dogs in the locality its spread was stopped. I brought the heads of a calf and dog that had died with the disease to Madison and put the case in the hands of Dr. H. L. Russell, bacteriologist at the experimental station.

The case of the calf was a peculiar one: The calf having been bitten by a sheep that had been bitten by a rabid dog. All three animals died with hydrophobia. Two rabbits inoculated with the virus taken from the medulla-oblongata of the calf died, in from eighteen to twenty-one days, and the same result occurred in two rabbits inoculated the same way from the medulla of the dog. No people as far as known were inoculated by this outbreak.

**ANTHRAX.**

Anthrax has been reported in several places in the state. On investigation I have found the presence of the disease in several cases. At Mellen and Medford cases have occurred that were evidently traceable to the tanneries at those places, having been imported in hides that came from the Orient, the hides having been washed and the water run into the streams flowing through those towns. Since the cause was discovered the hides are all put through an antiseptic treatment. A loss of upward of twenty-five head of stock occurred along the Black River. Some horses but mostly cattle from the above cause, and the disease will undoubtedly reappear for a series of years along the track of the infected district. Several head of stock died on and around Goose Island, near La Crosse, of anthrax. The animals were drinking from a slough near the Mississippi river. The remaining animals were taken from the pastures, removed away

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*General Report.*

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from the stream to fresh pastures and vaccinated with anthrax vaccine, no more cases occurring thereafter.

The John R. Davis Lumber Co., at Phillips, lost during October and November fourteen horses of anthrax.

Anthrax is a very purulent, highly infectious disease; the bacillus of anthrax is the hardiest of all bacteria, and will live exposed to the vicissitudes of the weather for many years.

Professor Williams reports a case where the earthworms during a dry season when they have been compelled to go deep to get moisture, have brought up the bacteria from where a carcass had been buried twenty years, and stock being infected by this cause. Bacteriological examination of the worms showed the bacillus. The infection of anthrax can be stopped by the use of anthrax vaccine the same as blackleg can be prevented by blackleg vaccine.

#### SCAB IN SHEEP.

Scab in sheep is not prevalent in Wisconsin, only one case having been brought to my notice in the past year; that was in a flock of sheep at Moulton, St. Croix county. There were six hundred sheep in the flock, the disease being brought into the flock by sheep bought at the stock yards in Minneapolis. They had lost upwards of seventy-five head before my attention was officially called to it. I quarantined the stock six months. Had them dipped several times and succeeded in keeping the disease from spreading farther.

#### OESTRUS OVI.

Snuffles in sheep caused by the oestrus ovi depositing its larva in the nose of the animal is very prevalent, and in some localities there has been quite a loss of the flocks by the owners letting the sheep go without treatment until in an advanced stage.

It is very simple and easily treated if taken in time, the injection of terebenth and sweet oil equal parts into the nostril

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*Expenses.*

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once a day will cause the grub to let go and also heal the mucous membrane.

HOOSE OR HUSK (*parasitic bronchitis.*)

Parasitic bronchitis in lambs and calves have occurred in several parts of the state. The disease is caused by the strongylus filaria, it is from one to two and a half inches long. The female is white, larger than the male, which is of a yellowish white color. Its body is uniform in size but tapers at both ends. The head is short, stumpy, but not tuberculated as in astronygles. They are found in the lung and bronchial tubes and lower trachea, and set up an irritation which causes congestion of the lungs and causing death in that way. The disease is very successfully treated by intertracheal injections of turpentine, chloroform and sweet oil equal parts, and used in quantities according to the size of the animal, from one to four drams.

EXPENSES OF THE OFFICE.

The expenses of the office for the last fiscal year:

State veterinarian, salary.....	\$2,000 00
State veterinarian, total expense traveling, experimental stationery and all current expenses of the office.....	2,144 71
Consultation fees of veterinarians mostly on work in tuberculosis and tubercu- line testing:	
W. J. Butler, V. S.....	56 00
A. E. Bryant, V. S.....	21 00
J. L. Carney, D. V. S.....	47 50
Charles Schmidt, D. V. S.....	73 50
T. Wrigglesworth, V. S.....	34 25
S. Beattie, V. S.....	42 00
William Wilson, M. D. C.....	14 00
G. Ed. Leech, D. V. S.....	34 50
E. R. Mack, V. S.....	19 00
W. A. Ogelvie, V. S.....	7 00
E. D. Roberts, D. V. S.....	52 50
L. A. Wright, V. S.....	17 50
Dr. H. L. Russell.....	16 00
J. L. Scott, V. S.....	14 00
W. G. Clark, D. V. S.....	46 50
E. H. Newton, D. V. S.....	35 00
Parke, Davis & Co., Detroit tuberculine.....	113 28
S. F. Beattie, V. S.....	50 88
L. G. Hart, V. S.....	7 00
B. F. Holmes, V. S.....	28 00
Dr. C. H. Ormond.....	11 50
W. E. A. Wyman, M. D. C.....	21 00
Total expense.....	\$1,906 62

*Slaughtered Animals.*

## AMOUNT PAID FOR DISEASED ANIMALS SLAUGHTERED IN 1899.

Abler, M.....	\$25 83
Botker, William.....	10 00
Baumgardt, F.....	66 66
Berens, M.....	20 00
Breitenfeld, F.....	16 67
Cook, Alex.....	33 33
Cochrane, J. M.....	10 00
Carty, Thomas.....	50 00
Connor, R.....	33 33
Cook, F. S.....	90 00
Connors, D.....	9 34
Castello, D.....	20 00
Crouch, E. M.....	6 66
Dorster, Wm.....	33 33
Eick, H.....	33 33
Groeschel, J.....	33 33
Grebe, U.....	24 00
Hudkins, B. G.....	16 66
Herman, E.....	60 00
Hoffman, R.....	183 34
Harder, G.....	9 34
Hanson, L.....	23 33
Lang, P.....	26 00
Jacobson, G. C.....	33 33
Jenny, J.....	25 33
Keys, C. W.....	30 00
Keenan, J.....	26 66
Loewen, M.....	73 33
Marx, Hy.....	24 00
Murphy, D.....	26 66
Morgan, G. W.....	26 67
Mitchell, S.....	19 55
Owens, E.....	20 00
Ornstein, A.....	33 34
Parker, E. H.....	16 67
Piper, F.....	189 75
Polege, E.....	33 33
Palmer, J. S.....	23 33
Pace, J. H.....	33 33
Rosenbaum, J.....	28 00
Rapid Delivery Co.....	23 33
Reid, L.....	26 67
Roberts, R.....	26 00
Stanchfield, S. B.....	26 66
Schmidt, Hy.....	24 00
Stair, F. N.....	66 66
Steblyne, A.....	23 33
Shores, E. A.....	33 33
Stone & Deitz.....	33 33
Shadel, T. L.....	4 00
Thompson, J.....	110 00
Uphoff, S. J.....	20 00
Walezak, F.....	23 33
Watson, Dillingham.....	28 00
Total.....	\$1,965 90

*Slaughtered Animals.*

## AMOUNT PAID FOR DISEASED ANIMALS SLAUGHTERED IN 1900.

Barton, J. M.	\$36 67
Brochert, A.	33 33
Bushman, J.	13 33
Balthazar, J.	20 00
Butler, A. L.	26 67
Barrow, J.	70 00
Maumhardt, S.	12 67
Balsam, F.	16 67
Burrows, C. A.	17 33
Bechand Brewing Company.	166 66
Connor R. Co.	33 33
Croft, S.	33 33
Costello, M.	21 33
Cook, Sheldon.	74 99
Cook, W. B. & Bros.	118 67
Cook Brothers.	70 00
Denz, R.	13 33
Faulke, F.	26 66
Flynn, J.	13 33
Glun, J.	50 00
Guttenberg, F.	100 00
Hassel J.	106 67
Hankerson, S. C.	66 67
Hazen, S.	20 00
Hodge, J.	13 33
Holt Lumber Company.	23 33
Hughes, Owen.	18 00
Holm, P. A.	34 33
Harvey, A.	10 00
Jackson, L.	30 01
Jackson Brothers.	134 33
Kalstad, C. J.	93 33
Loken, T. A.	20 00
Leith, William	23 55
McCrary, B.	23 33
McCov, J.	22 00
McKeeth, L.	20 00
Mitchell, W. J.	30 00
Mack, B.	23 33
Morley, Mrs. M.	26 67
Morehouse, W.	33 33
Neven, D. R.	43 33
Norton, T. J.	23 33
Pape, W. S.	20 00
Retzlaff, A.	20 00
Randolph, R. G.	50 00
Rickhoff, Wm.	20 01
Regley, J.	56 67
Rodenfield, Hy.	125 33
Rood, H. M.	112 44
Rowe, W. S.	33 33
Schlem, F.	66 66
Sherman, W. T.	376 67
Schmidt, J.	30 00
Steffen, J.	18 00
Schneider, J.	24 00
Schmitz, J.	22 00
Stillwell, A.	188 00
Sargeant, H.	80 00
Swaithout, H. M.	80 00
Simonson, S. K.	32 67
Thompson, G. W.	12 00
Trummer, P.	23 33
Uphoff, J. C.	146 66
Uphoff, S. J.	32 00
Werner, Hy.	217 33
Zunke, F.	20 00
Total.	\$3,631 25

*Number of Horses, by Counties, in State.*

Counties.	Number.	Valuation by state board of assessment.	Per head by state board of assessment.
Adams	3,960	\$138,800	\$35 00
Ashland	1,581	55,335	35 00
Barron	5,645	197,575	35 00
Bayfield	1,802	63,070	35 00
Brown	7,130	249,550	35 00
Buffalo	6,773	237,055	35 00
Burnett	1,659	58,065	35 00
Calumet	5,829	204,015	35 00
Chippewa	7,156	250,460	35 00
Clark	6,985	243,775	35 00
Columbia	12,121	424,235	35 00
Crawford	5,825	203,875	35 00
Dane	19,132	669,620	35 00
Dodge	12,842	449,470	35 00
Door	4,659	163,065	35 00
Douglas	884	30,940	35 00
Dunn	8,564	299,740	35 00
Eau Claire	7,071	247,485	35 00
Florence	465	16,275	35 00
Fond du Lac	12,418	434,630	35 00
Forest	206	7,210	35 00
Grant	16,944	593,040	35 00
Green	7,977	279,195	35 00
Green Lake	5,358	187,530	35 00
Iowa	9,693	339,255	35 00
Iron	431	15,085	35 00
Jackson	5,764	201,740	35 00
Jefferson	9,632	337,120	35 00
Juneau	5,957	208,495	35 00
Kenosha	4,411	154,385	35 00
Kewaunee	5,748	201,180	35 00
La Crosse	6,005	210,175	35 00
Lafayette	8,277	289,695	35 00
Langlade	3,322	81,270	35 00
Lincoln	1,889	66,115	35 00
Manitowoc	10,085	352,975	35 00
Marathon	7,029	246,015	35 00
Marquette	3,605	126,175	35 00
Marquette	3,701	129,535	35 00
Milwaukee	16,111	563,885	35 00
Monroe	9,613	336,455	35 00
Oconto	5,115	179,025	35 00
Oneida	1,040	36,400	35 00
Outagamie	9,259	324,066	35 00
Ozaukee	4,785	167,475	35 00
Pepin	2,749	96,215	35 00
Pierce	7,256	253,960	35 00
Polk	5,464	191,210	35 00
Portage	6,359	222,565	35 00
Price	1,489	52,115	35 00
Racine	6,087	213,045	35 00
Richland	6,449	225,715	35 00
Rock	15,179	531,265	35 00
St. Croix	7,424	259,840	35 00
Sauk	9,979	349,265	35 00
Sawyer	332	11,620	35 00
Shawano	6,733	235,655	35 00
Sheboygan	10,321	361,235	35 00
Taylor	2,222	77,770	35 00
Trempealeau	8,594	300,790	35 00
Vernon	10,667	373,345	35 00
Vilas	534	18,690	35 00
Walworth	10,191	356,685	35 00
Washburn	956	33,460	35 00
Washington	8,469	296,415	35 00
Waukesha	10,814	378,490	35 00
Waupaca	9,680	338,800	35 00
Waushara	6,571	229,985	35 00
Winnebago	8,519	298,165	35 00
Wood	4,662	163,170	35 00
Total	461,133	\$16,139,830	\$35 00

## Number of Neat Cattle, by Counties, in State.

Counties.	Number.	Valuation by state board of assessment.	Per head by state board of assessment.
Adams	8,637	\$86,370	\$10
Ashland	1,849	18,490	10
Barron	13,522	135,220	10
Bayfield	825	8,250	10
Brown	13,235	132,350	10
Buffalo	21,453	214,530	10
Burnett	5,400	54,000	10
Calumet	15,519	155,190	10
Chippewa	12,952	129,520	10
Clark	18,084	180,840	10
Columbia	34,388	343,880	10
Crawford	20,112	201,120	10
Dane	69,293	692,930	10
Dodge	45,274	452,740	10
Door	11,835	118,350	10
Douglas	500	5,000	10
Dunn	20,933	209,330	10
Eau Claire	13,793	137,930	10
Florence	197	1,970	10
Fond du Lac	39,337	393,370	10
Forest	187	1,870	10
Grant	64,032	640,320	10
Green	49,582	495,820	10
Green Lake	16,546	165,460	10
Iowa	55,336	553,360	10
Iron	271	2,710	10
Jackson	15,775	157,750	10
Jefferson	39,811	398,110	10
Juneau	14,242	142,420	10
Kenosha	17,675	176,750	10
Kewaunee	18,874	188,740	10
La Crosse	16,088	160,880	10
Lafayette	44,505	445,050	10
Langlade	3,895	38,950	10
Lincoln	2,912	29,120	10
Manitowoc	2,591	25,910	10
Marathon	19,358	193,580	10
Marquette	4,872	48,720	10
Marquette	11,487	114,870	10
Milwaukee	11,886	118,860	10
Monroe	25,390	253,900	10
Oconto	12,466	124,660	10
Oneida	835	8,350	10
Outagamie	27,839	278,390	10
Ozaukee	14,898	148,980	10
Pepin	6,437	64,370	10
Pierce	17,033	170,330	10
Polk	18,483	184,830	10
Portage	11,333	113,330	10
Price	2,194	21,940	10
Racine	17,935	179,350	10
Richland	23,434	234,340	10
Rock	44,261	442,610	10
St. Croix	17,835	178,350	10
Sauk	32,220	322,200	10
Sawyer	342	3,420	10
Shawano	18,679	186,790	10
Sheboygan	36,560	365,600	10
Taylor	3,261	32,610	10
Tempelaleau	26,454	264,540	10
Vernon	25,711	257,110	10
Vilas	241	2,410	10
Walworth	42,880	428,800	10
Washburn	1,213	12,130	10
Washington	21,733	217,330	10
Waukesha	27,999	279,990	10
Waupaca	26,276	262,760	10
Waushara	16,411	164,110	10
Winnebago	25,640	256,400	10
Wood	9,730	97,300	10
Total	\$1,361,817	\$13,618,170	\$10



*Number of Mules and Asses, by Counties, in State.*

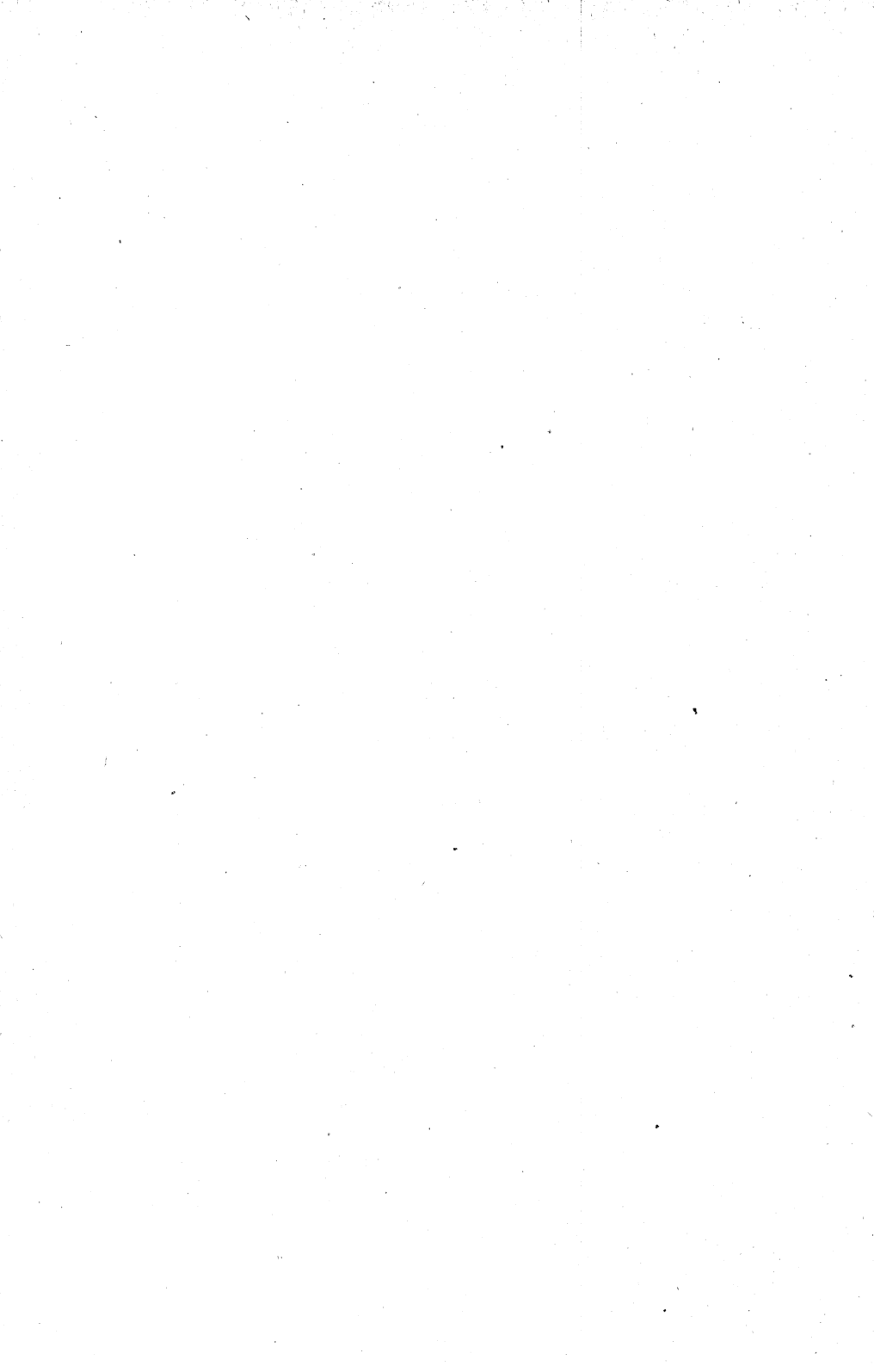
Counties.	Number.	Valuation by state board of assessment.	Per head by state board of assessment.
Adams .....	82	\$2,460	\$30
Ashland .....	4	120	30
Barron .....	74	2,220	30
Bayfield .....	3	90	30
Brown .....	12	360	30
Buffalo .....	42	1,260	30
Burnette .....	13	390	30
Calumet .....	18	540	30
Chippewa .....	46	1,380	30
Clark .....	61	1,830	30
Columbia .....	54	1,620	30
Crawford .....	71	2,130	30
Dane .....	62	1,860	30
Dodge .....	32	960	30
Door .....	14	420	30
Douglas .....	2	60	30
Dunn .....	60	1,800	30
Eau Claire .....	27	810	30
Florence .....	1	30	30
Fond du Lac .....	12	360	30
Forest .....	7	220	30
Grant .....	137	4,110	30
Green .....	48	1,440	30
Green Lake .....	13	390	30
Iowa .....	66	1,980	30
Iron .....	6	180	30
Jackson .....	27	810	30
Jefferson .....	34	1,020	30
Juneau .....	90	2,700	30
Kenosha .....	18	540	30
Kewaunee .....	16	480	30
La Crosse .....	31	930	30
Lafayette .....	114	3,420	30
Langlade .....	14	420	30
Manitowoc .....	16	480	30
Marathon .....	23	690	30
Marinette .....	43	1,290	30
Marquette .....	29	870	30
Milwaukee .....	30	900	30
Monroe .....	53	1,590	30
Oconto .....	28	840	30
Oneida .....	10	300	30
Outagamie .....	41	1,230	30
Ozaukee .....	39	1,170	30
Pepin .....	17	510	30
Pierce .....	35	1,050	30
Polk .....	19	570	30
Portage .....	23	690	30
Price .....	20	600	30
Racine .....	30	900	30
Richland .....	103	3,090	30
Rock .....	98	2,940	30
St. Croix .....	20	600	30
Sauk .....	67	2,010	30
Shawano .....	39	1,170	30
Sheboygan .....	66	1,980	30
Taylor .....	31	930	30
Trempealeau .....	50	1,500	30
Vernon .....	72	2,160	30
Walworth .....	25	750	30
Washburn .....	14	420	30
Washington .....	86	2,580	30
Waukesha .....	29	870	30
Waupaca .....	68	2,040	30
Waushara .....	41	1,230	30
Winnebago .....	15	450	30
Wood .....	30	900	30
Total .....	2,621	\$78,630	\$30

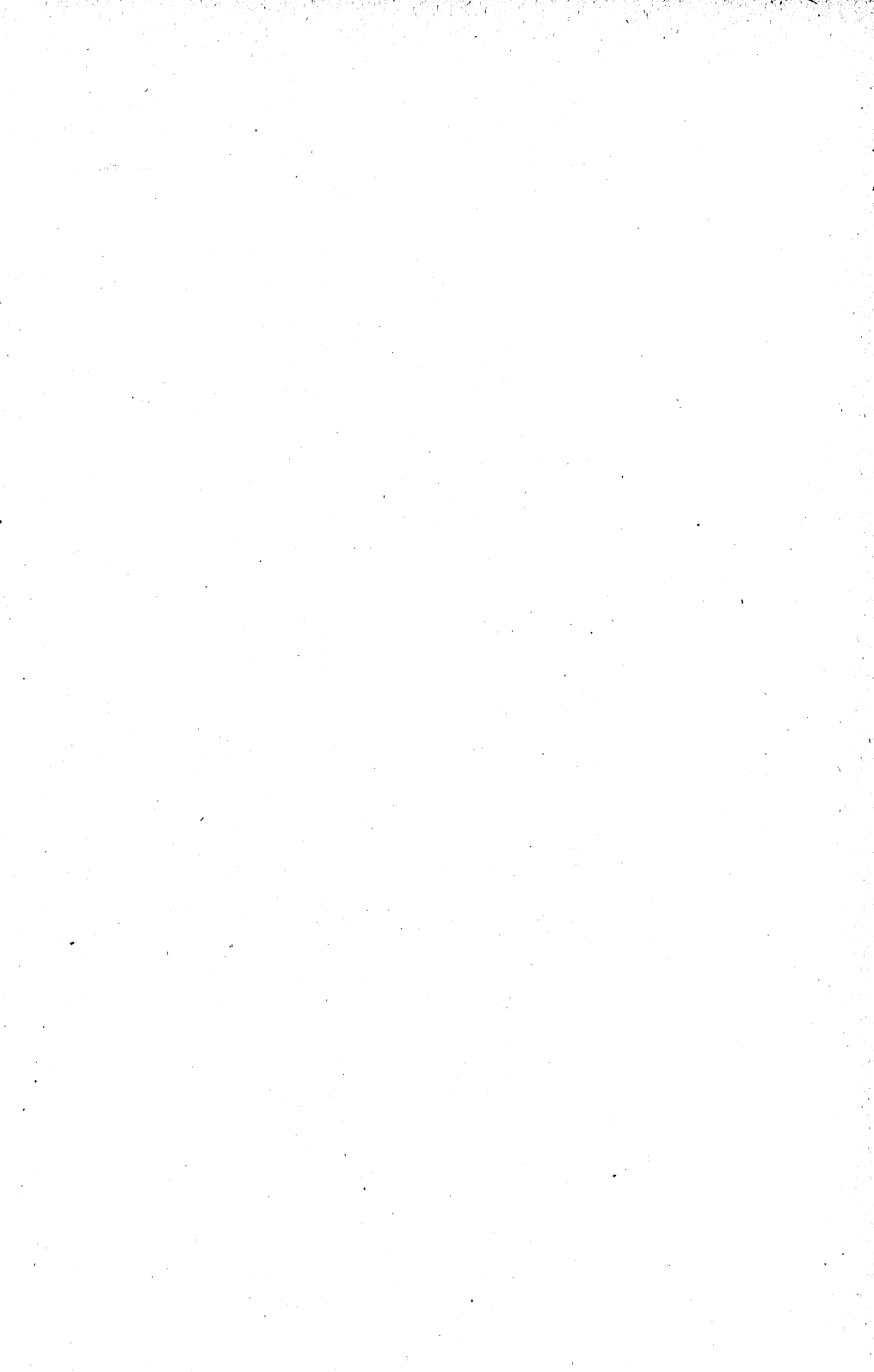
*Number of Sheep and Lambs, by Counties, in State.*

Counties.	Number.	Valuation by state board of assessment.	Per head by state board of assessment.
Adams	5,143	\$7,714 50	\$1 50
Ashland	338	507 00	1 50
Barron	11,625	17,437 50	1 50
Bayfield	84	51 00	1 50
Brown	2,886	4,329 00	1 50
Buffalo	15,571	23,356 50	1 50
Burnett	1,746	2,619 00	1 50
Calumet	4,761	7,141 50	1 50
Chippewa	8,648	12,972 00	1 50
Clark	18,283	21,424 50	1 50
Columbia	42,418	63,627 00	1 50
Crawford	12,258	18,387 00	1 50
Dane	32,155	48,232 50	1 50
Dodge	22,295	33,442 50	1 50
Door	5,747	8,620 50	1 50
Douglas	35	57 00	1 50
Dunn	20,319	30,478 50	1 50
Kau Claire	5,475	8,212 50	1 50
Florence	76	114 00	1 50
Fond du Lac	49,822	74,733 00	1 50
Forest	2	3 00	1 50
Grant	25,434	38,151 00	1 50
Green	15,544	23,316 00	1 50
Green Lake	29,459	44,188 50	1 50
Iowa	17,789	26,683 50	1 50
Iron	38	52 50	1 50
Jackson	8,133	12,199 50	1 50
Jefferson	8,293	12,439 50	1 50
Juneau	8,949	13,423 50	1 50
Kenosha	16,865	25,297 50	1 50
Kewaunee	6,798	10,197 00	1 50
La Crosse	5,435	8,152 50	1 50
Lafayette	21,764	32,646 00	1 50
Lanai	1,394	2,091 00	1 50
Lincoln	1,279	1,918 50	1 50
Manitowoc	6,589	9,893 50	1 50
Marathon	12,723	19,089 00	1 50
Marquette	891	1,336 50	1 50
Marquette	14,225	21,237 50	1 50
Milwaukee	459	688 50	1 50
Monroe	21,674	32,511 00	1 50
Oconto	3,680	5,520 00	1 50
Oneida	20	30 00	1 50
Outagamie	10,104	15,156 00	1 50
Ozaukee	989	1,483 50	1 50
Pepin	4,654	6,981 00	1 50
Pierce	23,808	35,712 00	1 50
Polk	6,720	1,080 00	1 50
Portage	5,148	7,722 00	1 50
Prairie	189	283 50	1 50
Racine	11,796	17,694 00	1 50
Richland	42,562	63,843 00	1 50
Rock	25,957	38,935 50	1 50
St. Croix	13,497	20,245 50	1 50
Sauk	25,657	38,485 50	1 50
Sawyer	24	36 00	1 50
Shawano	11,567	17,350 50	1 50
Sheboygan	6,701	10,051 50	1 50
Taylor	391	1,336 50	1 50
Trempealeau	18,814	28,221 00	1 50
Vernon	39,601	59,401 50	1 50
Vilas	28	42 00	1 50
Walworth	28,240	42,435 00	1 50
Washburn	310	465 00	1 50
Washington	10,983	16,482 00	1 50
Waukesha	36,816	55,224 00	1 50
Waupaca	12,730	19,085 00	1 50
Waushara	12,804	19,205 00	1 50
Winnebago	17,473	26,209 50	1 50
Wood	4,726	7,089 00	1 50
Total	857,919	\$1,286,879 50	\$1 50

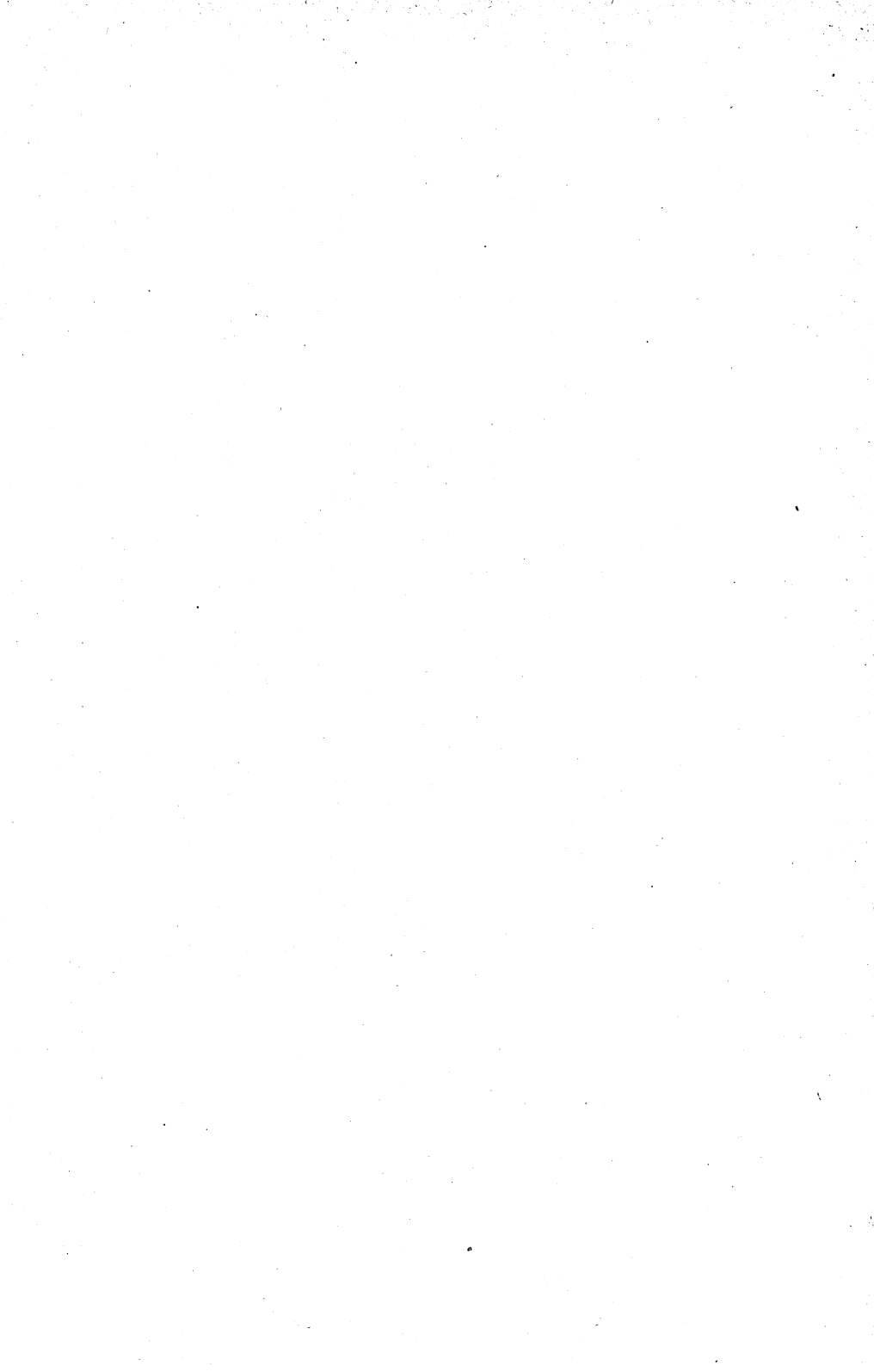
*Number of Swine, by Counties, in State.*

Counties.	Number.	Valuation by state board of assessment.	Per head by state board of assessment.
Adams	4,347	\$13,041	\$3 00
Ashland	76	228	3 00
Barron	3,485	10,455	3 00
Bayfield	163	489	3 00
Brown	3,240	9,720	3 00
Buffalo	11,416	34,338	3 00
Burnett	896	2,688	3 00
Calumet	6,952	20,856	3 00
Chippewa	5,002	15,006	3 00
Clark	5,904	17,712	3 00
Columbia	24,407	73,221	3 00
Crawford	10,226	30,678	3 00
Dane	41,457	124,371	3 00
Dodge	15,343	46,029	3 00
Door	4,050	12,150	3 00
Douglas	100	300	3 00
Dunn	11,158	33,474	3 00
Eau Claire	7,260	21,780	3 00
Florence	102	306	3 00
Fond du Lac	14,286	42,858	3 00
Forest	101	303	3 00
Grant	44,749	134,247	3 00
Green	26,511	79,533	3 00
Green Lake	9,934	29,802	3 00
Iowa	19,458	58,374	3 00
Iron	54	162	3 00
Jackson	6,015	18,045	3 00
Jefferson	13,965	41,895	3 00
Juneau	6,225	18,675	3 00
Kenosha	4,265	12,795	3 00
Kewaunee	5,996	17,988	3 00
La Crosse	7,629	22,887	3 00
Lafayette	28,189	84,567	3 00
Langlade	1,031	3,093	3 00
Lincoln	549	1,647	3 00
Manitowoc	7,805	23,415	3 00
Marathon	5,829	17,487	3 00
Marinette	1,242	3,726	3 00
Marquette	4,650	13,950	3 00
Milwaukee	2,841	8,523	3 00
Monroe	10,078	30,234	3 00
Oconto	3,995	11,985	3 00
Oneida	208	624	3 00
Outagamie	11,136	33,408	3 00
Ozaukee	3,443	10,329	3 00
Peplin	4,770	14,310	3 00
Pierce	6,702	20,106	3 00
Polk	3,804	11,412	3 00
Portage	5,379	16,137	3 00
Price	224	672	3 00
Racine	5,480	16,440	3 00
Richland	17,358	52,074	3 00
Rock	29,227	87,981	3 00
St. Croix	4,622	13,866	3 00
Sauk	19,661	58,983	3 00
Sawyer	115	345	3 00
Shawano	9,977	29,931	3 00
Sheboygan	11,399	34,197	3 00
Taylor	538	1,614	3 00
Trempealeau	9,045	27,135	3 00
Vernon	15,627	46,881	3 00
Vilas	158	474	3 00
Walworth	19,930	59,790	3 00
Washburn	167	501	3 00
Washington	9,481	28,443	3 00
Waukesha	10,259	30,777	3 00
Waupaca	7,500	22,500	3 00
Waushara	7,008	21,024	3 00
Winnebago	9,420	28,260	3 00
Wood	2,473	7,419	3 00
<b>Total</b>	<b>606,322</b>	<b>\$1,818,966</b>	<b>\$3 00</b>













# SECOND BIENNIAL REPORT

OF THE

## COMMISSIONERS

OF THE

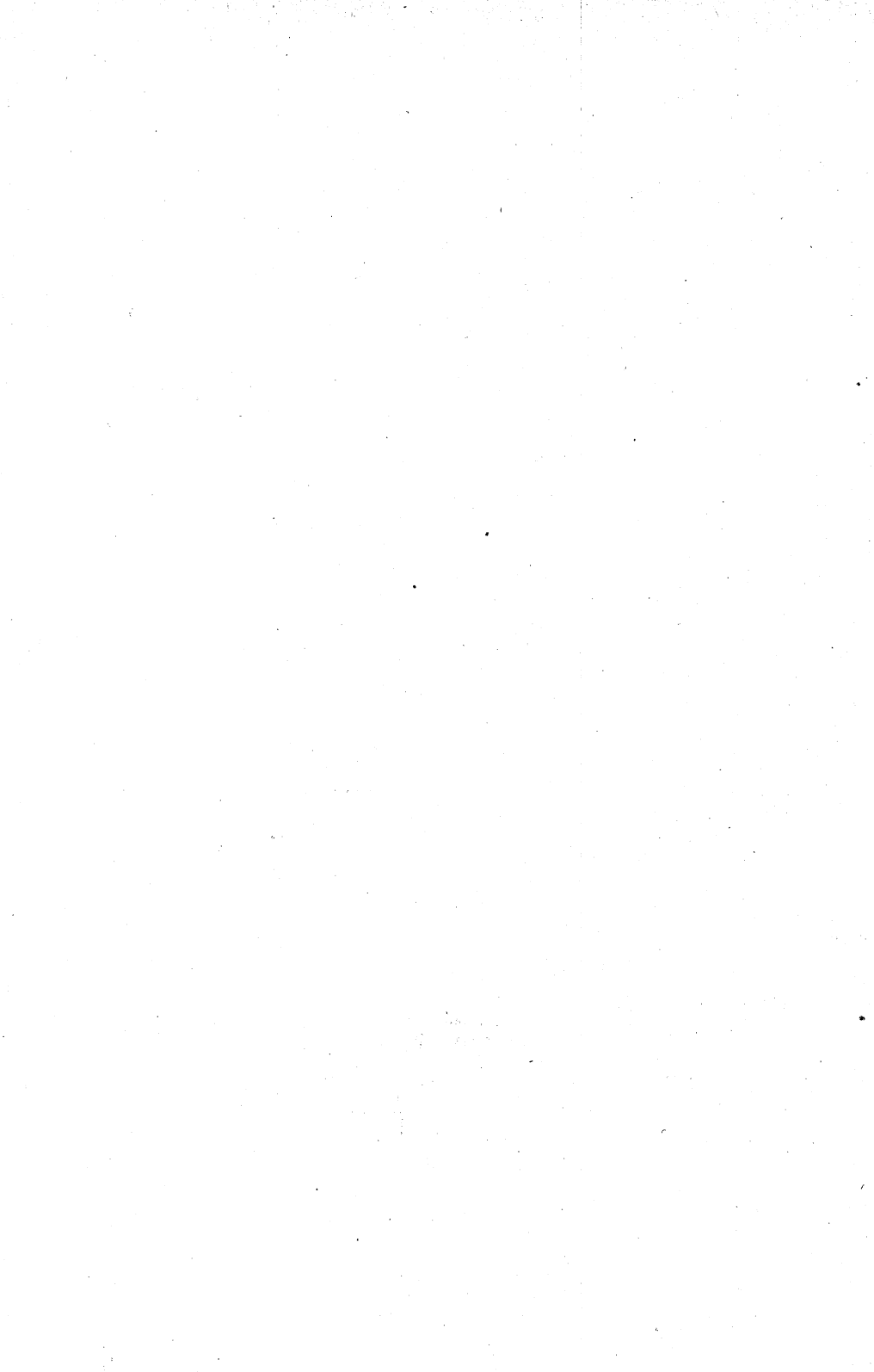
# Geological and Natural History Survey

Covering the period from  
October 1, 1898, to September 30, 1900.

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MADISON  
DEMOCRAT PRINTING COMPANY, STATE PRINTER  
1901



## TABLE OF CONTENTS.

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	Page
Board of Commissioners .....	3
Staff of the Survey .....	4
Letter of Transmittal .....	5
Report of the Superintendent of the Survey .....	7
I. Personnel of the Survey.....	8
II. Financial Statement.....	11
III. Work of the Survey .....	12
A. Organization .....	12
B. Economic Geology.....	13
Investigation of clays.....	13
Road materials and road construction.....	15
Marls and Portland cement.....	16
Water supply.....	17
Mining industry.....	17
Building stones.....	18
C. Areal Geology.....	18
D. Investigation of the lakes.....	20
Hydrographic survey.....	20
Physical geography .....	20
Lake biology.....	21
E. Copper bearing rocks of North Wisconsin.....	23
F. Physical geography.....	24
IV. Publications.....	25
V. Plans for the future .....	30
Financial report from Secretary of State.....	37
Statutes of Wisconsin relating to the Survey...	40
Publications of the Survey.....	42



**STATE OF WISCONSIN.**

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**GEOLOGICAL AND NATURAL HISTORY SURVEY**

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**BOARD OF COMMISSIONERS.**

EDWARD SCOFIELD,  
*Governor of the State.*

L. D. HARVEY,  
*State Superintendent of Public Instruction.*

CHARLES K. ADAMS,  
*President of the University of Wisconsin.*

EDWIN E. BRYANT,  
*President of the Commissioners of Fisheries.*

CHARLES S. SLICHTER,  
*President of the Wisconsin Academy of Sciences,  
Arts, and Letters.*

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**OFFICERS OF THE BOARD:**

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*Treasurer.*

Oct. 1, 1900.

## STAFF OF THE SURVEY.

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- E. A. BIRGE, Ph. D., Sc. D.,  
*Director and Superintendent.*
- C. R. VAN HISE, Ph. D.,  
*Consulting Geologist.*
- T. C. CHAMBERLIN, Ph. D., LL. D.,  
*Consulting Geologist. Pleistocene Geology.*
- E. R. BUCKLEY, Ph. D.,  
*Assistant Superintendent. Economic Geology.*
- SAMUEL WEIDMAN, Ph. D.,  
*Assistant Geologist. Geology of Central Wisconsin*
- S. V. PEPPEL, M. S.,  
*Chemist in Charge of Analysis of Clays (resigned August, 1900).*
- W. S. FERRIS, B. S.,  
*Assistant Chemist.*
- CHANCEY JUDAY, A. M.,  
*Assistant Biologist.*
- L. S. SMITH, C. E.,  
*In Charge of Hydrography.*
- U. S. GRANT, Ph. D.,  
*Assistant Geologist. Professor of Geology, Northwestern University. In Charge of Survey of Copper-bearing Rocks.*
- N. M. FENNEMAN, M. S.,  
*Assistant Geologist. Physical Geography of the Lake District.*

Special assistants are also employed in the work of the Survey. Among these are: C. Dwight Marsh, Professor of Biology, Ripon College (Lake Biology); G. L. Collie, Professor of Geology, Beloit College, (Physical Geography); D. P. Nicholson, Professor of Geology, Lawrence University, (Geology of Northern Lake Region); L. S. Cheney, Assistant Professor of Botany, University of Wisconsin (Forest Trees).

## LETTER OF TRANSMITTAL.

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MADISON, October 1, 1900.

HONORABLE EDWARD SCOFIELD,  
*Governor of Wisconsin.*

SIR:—The absence from the state by reason of illness of Dr. Charles K. Adams, President of the Commissioners of the Geological and Natural History Survey, makes it my duty to present to you, for transmission to the Legislature, the second biennial report of the Commissioners. This Survey was authorized by Chapter 297 of the Laws of 1897, and was furnished with means for the farther prosecution of its work by Chapter 163 of the Laws of 1899.

One change has occurred during the biennial term in the membership of the Board of Commissioners. Professor C. Dwight Marsh, of Ripon College, completed his term of service as President of the Wisconsin Academy of Sciences, Arts, and Letters with the year 1899, and Professor Charles S. Slichter, of the University of Wisconsin, who succeeded him as President, became thereby one of the Commissioners of this Survey, and has served in that capacity since the opening of the year 1900.

The very lucid and detailed report of Dr. E. A. Birge, the Director and Superintendent, accompanying this letter, renders unnecessary any recapitulation here of the work of the Commissioners since the last report. This report is adopted and submitted as the report of the Commissioners. It shows the work accomplished, the work unfinished, and the lines of investigation pursued. No argument is needed to prove that the means provided by the State have been expended in practical

work of great scientific value, and not less important from the material point of view.

The work assigned to the Commissioners embraces a wide field, and demands the labor of years. The task has been undertaken in all the lines of work prescribed by the act creating this board. A beginning has been made and the State is already receiving the benefit of the results accomplished.

The successful planning and prosecution of the work requires, as the Superintendent so cogently presents, that an adequate appropriation be made, and that it be made permanent, or, at least, extended over a longer term than two years.

In all the recommendations of the Superintendent, the Commissioners fully concur, and urge upon the Legislature action in accordance therewith.

Respectfully submitted,  
EDWIN E. BRYANT,  
*President of the Board of Commissioners.*



# REPORT OF THE SUPERINTENDENT OF THE SURVEY.

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*To the Commissioners of the Geological and Natural History Survey:*

GENTLEMEN:—I submit herewith my report on the operations of the Survey under your charge, from October 1, 1898, to September 30, 1900. At the date with which this report begins the income of the Survey was \$5,000 annually. The Legislature of 1899 increased the income of the Survey to \$10,000 annually. This increased appropriation became available about the middle of April, so that something more than six months of the two years covered by the report were carried on under the smaller appropriation, and a year and a half under the larger sum.

The increased appropriation became available in time for the field season of 1899, so that the Survey was able to enlarge very materially the scope of its work. The main direction of this increase was in the investigation of the Keweenaw, or copper-bearing rocks, in Northern Wisconsin. The field season of 1899 was devoted to an examination of these rocks as they are found in Douglas County, and that of 1900 to a study of the Southern, or Minong, range, most of which lies to the south of Douglas County. The work on building stones, which was completed by the spring of 1899, was replaced by work on the clays, which has been vigorously pushed and whose prosecution has involved the expenditure of a very considerable sum.

The two years have very materially increased our knowledge of the economic resources of the state, a not inconsiderable amount of work has been done in the scientific exploration of its geology, and at least a good beginning has been made on the

study of the biology of the lakes. Subsequent sections of the report will show in detail the amount and nature of the work which has been done.

Especial and cordial acknowledgment should be made at this point of the great assistance given by the United States Geological Survey in the matter of topography. Without this assistance the Survey would have been able to accomplish far less than has been done in the direction of geology. During the past two years the United States Geological Survey has completed the topography of the region about the Dalles. It has also surveyed the region now being investigated by Dr. Weidman, and has thus made it possible to work out the geology far more accurately than could otherwise have been done. It is impossible to conduct a geological survey with the care and accuracy necessary to detailed work at the present time unless the topographic survey has already been made. During the past season the United States Geological Survey extended into the southwestern part of Wisconsin the topographic work which had been done in former years in the adjacent parts of neighboring states, so that the topographic base for that region has been prepared and will be ready for this Survey, should we be able to undertake the investigation of the geology of that district next summer.

#### I. PERSONNEL OF THE SURVEY.

The following persons have been employed by the Survey during the past year with the compensation stated in each case. All persons paid by the year or month have been allowed their actual expenses while in the field, in addition to the compensation stated.

E. A. Birge, Director of the Survey, \$300 per annum until April 15, 1899; \$500 per annum since that date.

C. R. Van Hise, Consulting Geologist, without compensation except field expenses.

E. R. Buckley, Assistant Superintendent in charge of economic geology, \$800 per annum until April 1, 1899; \$1,400 per annum thereafter.

S. Weidman, Assistant Geologist in charge of areal geology, \$800 per annum until April 1, 1899; \$1,200 per annum thereafter.

U. S. Grant, Assistant Geologist in charge of Northern Wisconsin survey, \$100 per month while actually employed.

S. V. Peppel, Chemist in charge of analysis of clays, \$40 and \$80 per month according to the amount of time given to the Survey; employed from September 26, 1899, to August 26, 1900.

L. S. Smith, in charge of hydrography, \$5 per day while actually employed.

Chancey Juday, Assistant Biologist, \$800 per annum since July 1, 1900.

C. Dwight Marsh, Biologist, \$4 per day while employed in lieu of expenses.

D. P. Nicholson, survey of northern lakes, \$4 per day while employed in lieu of expenses.

W. W. Daniells, chemical analyses of copper-bearing rocks; compensation depending on amount of work done.

N. M. Fenneman, Assistant Geologist, physical geography of lakes of Eastern Wisconsin, \$100 per month while employed; engaged during part of the summer and autumn of 1900.

C. P. Berkey, Assistant to Professor Grant, \$60 per month while employed, about 2½ months, summer of 1899.

H. M. Adkinson, Assistant to Professor Grant, summer of 1900; \$60 per month while employed, about 2 months.

H. F. Little, Assistant to Professor Grant summer of 1900; \$40 per month while employed, about 2 months.

W. S. Ferris, Chemical Assistant, analyses of marls and clays, \$50 per month, about 6 weeks, summer of 1900.

J. Lloyd Nelson, preliminary investigation of marls, summer of 1900; \$30 per month, engaged about seven weeks.

E. E. Hemmingway, Assistant to Professor Marsh, summer of 1899; \$50 per month while employed.

L. S. Cheney, forest tree bulletin; no compensation beyond expenses.

Besides the persons named above, Professor Grant's parties

have included several compassmen, cooks, etc., necessary to their parties, and a considerable number of persons have been engaged in various capacities for stenography and typewriting, drafting, and other office work and in various temporary employments connected with field work. The names of all persons who have received money from the Survey with the amounts paid in each case, appear in the statement of expenses from the Secretary of State, which is appended to this report. Miss Florence K. Denniston was engaged to draw the illustrations for Professor Cheney's report on the forest trees, and was paid various rates of compensation, according to the nature and amount of service rendered.

## II. FINANCIAL STATEMENT.

Appended to this report is a statement from the Secretary of State, giving the names of all persons who have received money from the Survey, with the amount received by each. In the case of the permanent employees, the sums paid include not only salary, but also expenses while in the field, and the repayment of bills paid for the Survey. These latter sums are considerable and in some cases are more than the regular compensation whose amount has been stated in the preceding section.

In order that you may better appreciate the directions in which the money of the Survey has been expended, I have summarized the expenditures, not according to the persons to whom the money was paid, but by departments. The result is as follows:

	1898-1899.	1899-1900.	Total.
Administration .....	\$675 68	\$1,230 06	\$1,905 74
Clays and Marls .....	1,289 11	3,641 93	4,931 09
Building Stone .....	824 76	476 59	1,301 35
Statistics of Wells .....		20 00	20 00
Road Materials, .....		486 78	486 78
Northern Wisconsin, .....	1,662 00	1,949 76	3,611 76
Areal Geology .....	1,467 31	1,842 54	3,309 85
Lake Biology .....	583 26	503 86	1,087 12
Lake Survey .....	635 68	344 54	980 22
Physical Geography .....	288 00	148 50	386 50
Physical Geography (Devil's Lake Bulletin) .....	400 00		400 00
Physical Geography (Lakes) .....		131 75	131 75
Forest Trees .....	106 12	76 80	182 92
Total .....	\$7,886 92	\$10,855 16	\$18,740 08

From this statement it appears that during the two years \$6,739.22 have been expended in the direction of strictly economic geology—building stones, clays, road materials, etc. The geology of Northern Wisconsin and that of the central crystalline area have used \$6,921.61, making a total spent for geology of more than \$13,600, or something more than 78 per cent. of the total expenditures. It appears also that the natural history of the state, in the larger sense, has been able to receive but a comparatively small portion of the income of the Survey, since the needs for the economic and general geology have been so pressing. During the two years covered by this report the sum of \$1,532.13 has been spent for apparatus and testing machinery.

Some explanation may be given to the sum allotted to administration. This has included \$925, paid the Superintendent during the two years as compensation for his services, both as director and as assistant in biology; \$290.04 have been spent for transportation, including freight and express bills; \$140.94 have been paid for clerical and other assistance. The Attorney General, in December, 1899, ruled that the changes

made in the Revised Statutes made it unlawful for the Superintendent of Public Property to issue stamps and stationery to the Survey; and during the past year \$195.41 have been spent for that purpose, including therein the purchase of a typewriter. We have spent \$259.48 in fitting up offices for the Survey in Science Hall, University. The regents of the University have granted the Survey the free use of space in this building, but it was necessary to partition off the offices and to equip them properly with furniture. During the first two years the Survey found accommodations in other offices in Science Hall, but the growth of the work, both of the University and of the Survey, made it impossible to occupy these quarters longer. The Survey is now well accommodated with offices, which will serve unless there should be a considerable increase in its permanent working force. The Survey is under great obligations to the University for providing us with these quarters.

On October 1, 1900, there remained of the money appropriated to the Survey by the Legislature of 1899 a balance of \$4,374.88, according to the report made by the Secretary of State. This sum will be sufficient to carry on the work of the permanent employees of the Survey and the necessary office and incidental expenses during the coming fall and winter, or until the appropriation made by the Legislature of 1901 shall be available.

### III. WORK OF THE SURVEY.

A. I desire to repeat the acknowledgment made in the last report of the great value to the Survey of the service freely rendered to it by Professor C. R. Van Hise as Consulting Geologist. He has directed the work of the geological assistants, especially that of Dr. Weidman and Prof. Grant, and has given much attention to their problems, making several visits to them while in the field. Besides these services, he has always been ready to advise with the Director on all questions of importance relating to the welfare of the Survey and to advance its interests in every possible manner.

I am glad to be able to report that Professor T. C. Chamberlin, Director of the former Geological Survey, and now professor of geology in the University of Chicago, has consented to act as Consulting Geologist in regard to the Pleistocene geology of the state, with which he is especially familiar. His services began on the 1st of October, 1900, and therefore do not fall properly within the limits of this report. Like Professor Van Hise, he receives no compensation from the Survey beyond the payment of actual expenses while in the field.

*B. Economic Geology.*—The work of the department of economic geology has been for the past two years in charge of Dr. E. R. Buckley. The work of the two years has consisted of the completion and publishing of the building stone report, the investigation of the clays and clay industries of the state, the preliminary investigation of the marl deposits, the study of the road materials, and smaller amounts of work on the subjects of water supply, wells, and mining statistics.

*Investigation of Clays.*—Since May, 1899, the study of the clays and clay industries has been the main subject of economic importance, whose investigation the Survey has undertaken. During this time Dr. Buckley has visited all except two or three of the brick and tile factories operating at the present time, about one hundred and ninety in number. The clay banks have been carefully examined and the methods of manufacture and the economic considerations relative to the successful marketing of the products have been given consideration.

Samples of clay from about ninety localities were shipped to the Survey for examination. A few of these samples have been examined, both physically and chemically, but from the greater part only the chemical analyses have been made. The chemical work has been done by Mr. S. V. Peppel, assisted by Mr. W. S. Ferris. From the chemical analyses made the refractory quotient (or the behavior of the clays toward heat) has been computed. The refractory quotient will be checked up by experiments yet to be made for the determination of the fusibility of the clays. A complete report of the clay working industry of the state should include, besides discussion and description,

two series of tests,—one on the raw clay and one on the manufactured products. It is expected that during the present season all the samples of clay now in the laboratory will be thoroughly tested to determine their physical properties. When these tests have been made, it will be possible to state with a considerable degree of certainty the purposes for which the different clays occurring within the state can be used.

It has been thought best to publish the report on clays in two parts; the first part, which is to be printed at once, is largely descriptive in nature, containing only a small part of the chemical and physical tests. During the present winter it is thought that it will be possible to complete these physical tests, which will then be used as a basis for the second part of the report.

The first part of the report is essentially a summary of the present condition of the brick and drain-tile industry in Wisconsin, with chapters on the principles which are necessary to an intelligent understanding of the same. No attempt is made to discuss in detail the methods of manufacture of the different wares and the explanations of the difficult problems involved in the ceramic art are left to writers who are more experienced in the discussion of these subjects.

The investigation of the clays as thus far conducted shows that the state has enormous quantities of clay suitable for the manufacture of common building brick, terra cotta, fire-proofing, drain-tile, and earthenware. There are also less extensive deposits of clay which give evidence of being well adapted to the manufacture of ornamental building brick. It is believed that there are also limited deposits of clay that can be advantageously utilized for the manufacture of paving brick and other vitrified wares. The most refractory clay or shale found in this state is suitable for the manufacture of fire brick of moderate fire resisting qualities. Fire brick can be manufactured which are sufficiently refractory to serve the purpose for which three-fourths of the imported fire brick are used.

The very plastic white kaolin, which occurs in the western part of the state, is admirably adapted to the manufacture of the highest grades of porcelain. At the present time it is being



used almost exclusively in the manufacture of paper, for which purpose it is sold to the pulp and paper manufacturers of Minnesota, Wisconsin, and Michigan. This kaolin might be used successfully with the marl which occurs so abundantly in the northeastern part of Wisconsin, for the manufacture of Portland cement.

Many of the lower grade clays, such as occur in the vicinity of the Great Lakes and along the stream channels, are suitable for the manufacture of flower pots, cheap cuspidors, and other earthenware vessels of a similar character.

With the decreased output of lumber in Wisconsin, and the consequent rise in price, the people will be forced to use brick as a substitute for wood. The constant demand for a cheap and durable material will call into use enormous quantities of brick, stone, and concrete. Clay must be used in the manufacture of brick and terra cotta in this state, and will probably also be used in the manufacture of Portland cement. Everywhere the industrial and economic conditions point to the rapid development of the clay manufacturing industry.

*Road Materials and Road Construction.*—The Survey has devoted considerable time to an investigation of the improved highways of the cities, towns, and villages of the state. Data have been collected on the materials used in street construction and the methods of construction, in all parts of the state. Information has also been obtained on the cost of construction, cost of maintenance, and cost of cleaning. A knowledge of the manner in which the pavements have been constructed, the materials used, the location, traffic to which it will be subjected, and the conditions under which the pavement has been constructed, gives a basis from which a rational estimate of the life of the pavement may be made.

During the last few years there has been an increased demand for definite quantitative information concerning the relative value of different rocks used for macadam. About a year ago the Survey purchased an abrading machine and an impact testing machine, with which to make tests of the wearing and cementing qualities of different stones now being used for the

construction of macadam streets. Tests have been made on stone from the most important quarries, and although these are not published, they are available to the public on application. It is hoped that the Survey will soon be in a position to publish a report on the experiences of Wisconsin cities in highway construction, which will be a treatise on the materials available for street construction in Wisconsin cities and towns. It is proposed to make this report a work of reference for those who are interested in construction of highways in the towns, cities, or villages of Wisconsin.

*Marls and Portland Cement.*—During the last two or three years the Portland cement industry throughout the country has been developing very rapidly and the Survey has received many inquiries relative to the suitability of the deposits of marl occurring in various parts of the state for the manufacture of Portland cement. The limitation of the funds at the disposal of the Survey has made it impossible to begin as yet a thorough investigation of these deposits, but during the past summer the Survey attempted to determine the extent and character of some of the marl deposits which have been reported from the central, eastern, and northeastern parts of the state. For the purpose of collecting samples and determining the areal extent and depth of these deposits, Mr. J. Lloyd Nelson spent seven weeks during the summer of 1899 in Door, Kewaunee, Waupaca, Shawano, Langlade, and Waushara counties. During the time that Mr. Nelson was in the field he inspected some twenty-five marl beds, some of which covered an areal extent of a hundred acres and having a depth of from one to forty feet of marl. The marl deposits inspected vary greatly in their character and composition; some of the deposits are thoroughly decomposed, while others contain a great many shells and some coarse sand.

Borings were made in many parts of each of the deposits, so that the quantity of the marl contained in the deposit is easily computed. Samples were collected from various parts of the deposits, both from the surface and deep within the deposit. These samples are now in the laboratory of the Survey and will be analyzed during the present winter.

There seems little question that these deposits of marl are sufficiently pure to be utilized advantageously in the manufacture of Portland cement. The Survey is examining deposits of clay in the immediate vicinity of the marl beds to determine whether or not the clay occurring at these places can be used in the manufacture of Portland cement. It is a well recognized fact that suitable clay must be found near to the marl in order to make the manufacture of the Portland cement cheap enough to be sold in competition with cement now on the market.

The report on the marls cannot be published for a year or more, but the information collected is available to the public upon application. However, it is the intention to issue a report on this important subject as soon as possible, in order to make the information which has been collected more accessible to parties interested in the development of this industry. It is thought that a preliminary report on this subject will be of value to the state.

*The Water Supply of the State.*—The Survey has been continuing to collect statistics on well borings throughout the state, although the responses of the well drillers are not very numerous. The data which have been obtained by the Survey are valuable in showing the depth at which water is now being obtained and the character of the rock formations passed through. It is expected to continue the collection of data on well borings, although it may be a long time before the well drillers as a whole attach sufficient importance to the subject to make the information especially valuable. However, when once collected and collated, the data will be of inestimable value to the well drillers of this state.

*The Mining Industry.*—The collection of statistics of the iron mining in the northern part of the state and the lead and zinc mining in the southwestern part has been begun. None of the mines, with the exception of those in the southwestern part of the state, have received any attention further than the collection of statistical data. Dr. Buckley spent a short time in Southwestern Wisconsin inspecting some of the more important mining properties, with a view to the necessity of continuing

the work of the former Survey in this region. The needs of the miners in Southwestern Wisconsin are very apparent and it is hoped that the Survey will be in a position during another year to do some work in this region.

Throughout the state there has been continual applications on the part of men interested in the developing of mining properties for the assistance of the Survey in inspecting the undeveloped regions. As far as time would permit, Dr. Buckley has visited these mining properties and given such information and assistance as was possible under the existing conditions.

This department receives many mineral specimens to be identified and reported upon. Each request which has been received has been given careful attention; the minerals have been examined with reference to their economic importance and the best judgment of the geologist in charge has been given to those making requests for information.

*Building Stones.*—The work which was done during the preceding two years on the quarrying industry of the state has furnished a basis from which the Survey has been able to give information and much needed assistance to quarrymen and parties desiring to use Wisconsin stone. Dr. Buckley has been able to visit a number of undeveloped deposits of stone and render assistance to men desiring to enter this field of industry. The Survey has been in a better position to assist the quarrying industry during the last two years than it was the first two, and each succeeding year the Survey purposes to render to the quarrymen throughout the state assistance and information which will materially aid them in the development of any deposits which merit exploitation.

*C. Areal Geology.*—The Wausau district forms an area approximating four thousand square miles, and is located in the central part of the state in the vicinity of Antigo, Merrill, Medford, Wausau, Marshfield, Grand Rapids, and Stevens Point. The district consists principally of the crystalline rocks and includes extensive formations of slate, quartzite, granite, and trap rock. In the western and southern part of the district the sandstone formation is abundant, while overlying both the older

crystalline rocks and also the sandstone are deposits of glacial drift, distributed irregularly throughout the district.

The geology of the crystalline rocks is very complicated and it is often very difficult to determine the origin and relations of the various formations. These formations are of Huronian and Archean age, the former being the system of rocks in which the iron ores of the Lake Superior region are found. This fact has led many to believe in the possibility of finding iron ore and other valuable minerals in this region. It has been estimated that from \$75,000 to \$125,000 have been expended for the purpose of discovering and mining ores of iron, gold, copper, and silver in the vicinity of Wausau alone. This expenditure was a complete loss to the investors. It can be stated with certainty that if a geological survey of the locality had been made at an earlier day this loss could have been averted. The present geological survey of the crystalline rocks of the state, however, is not only for the purpose of determining the presence or absence of ore bodies, but also for the purpose of locating and examining all the various kinds of rocks of the region, the occurrence of the building and monumental stones, of clays, and road metal, and thereby furnishing the people of the state with a valuable fund of information which will be of service to those in quest of these materials.

In carrying on the work of the Survey every ledge of rock is examined, located upon the section map, and many specimens collected for further study in the laboratory with the microscope and by chemical analysis. Since the Wausau district is fairly well settled, the work in the field is being almost wholly done by using the bicycle, which is not only a very inexpensive mode of travel, but is also rapid and well adapted to the field work. The fact that the area is well settled and much of the forests cleared away, also aids in finding the rock exposures, and in obtaining other valuable information which was not accessible when the former geological survey was made about twenty-five years ago.

During the season of 1899 about six months were spent in the field and an area of eight hundred square miles in the vicinity of Marshfield and Medford was mapped. During the past sea-

son, 1900, about seven hundred square miles were surveyed between Marshfield and Grand Rapids.

In the work of the past season special attention has been paid to the mapping of the various glacial formations of the district. The nature of the soils is directly dependent upon the glacial geology and thus the detailed mapping of the glacial deposits will furnish a basis for the soil mapping of the district. In studying and mapping the soils samples of the average soils will be collected and their texture and composition studied in the laboratory. It is apparent that the mapping of the soils of the region will assist in developing the agricultural resources of this part of the state.

*D. Investigation of the Lakes.*—This Survey has now made a fair beginning on the study of the inland lakes of the state. The completion of this work will undoubtedly occupy a considerable number of years. The work hitherto done falls under three heads:

*Hydrographic Survey.*—A hydrographic survey has been made of most of the important lakes of Southern and Eastern Wisconsin from Green Lake, the Waupaca Lakes, and Elkhart Lake on the north. This work has been in charge of Professor L. S. Smith of the University of Wisconsin. He has now completed the survey of more than 60 lakes, ranging in size from Lake Mendota, Green Lake, and Lake Geneva, to the small lakes of the Waupaca chain. While numerous lakes still remain unsurveyed, even in the district under consideration, they are most of them either small or shallow. The Survey has expended in this department considerable sums of money in the period covered by the first biennial report, but much smaller amounts in the last two years. While the survey will be extended to lakes which are found to have an especial interest, the general work of this character is now regarded as nearly complete and the main attention of the Survey will be given to other departments.

*Physical Geography.*—The lakes which have thus been surveyed are most interesting from a physiographic point of view, including several types of lake basins. The study of the nature and origin of these lakes and the surface geology with which

they are associated has been assigned to Professor N. M. Feneman, formerly of Greeley, Colorado, who has given to the investigation much of the summer of 1900.

All the lakes of which a hydrographic survey has been made, and some others, have been examined, and the results of this study are being prepared for publication as an Educational Bulletin. The lakes already visited include Geneva, Delavan, Beulah, the Lauderdale Group, those of the Oconomowoc district, the lakes at Madison, Big Cedar (Washington County), Elkhart, Green, and the Waupaca Chain, with minor bodies of water in the vicinity of those named.

The points to which attention has been directed include the geological history of their basins, their relation to the surrounding topography, the history of the lakes with respect to former levels, the progress of surface agencies tending to extinguish the lake, the geological and scenic features of coasts, the changes being wrought upon the shores and features being developed by the action of waves and currents, the work of ice, and the laws of sedimentation as illustrated in the lakes studied.

A considerable collection has already been made of photographs which are designed primarily to illustrate the features and processes discussed. But in addition to this scientific use, they serve to emphasize the rare beauty and attractiveness of these lakes which are among the important natural resources of our state.

It is intended that the report shall be of a character helpful to teachers in appropriating the varied features of our lakes to the work of education, and at the same time consistent with the needs of general readers.

*Lake Biology.*—The study of the biology of the lakes has been carried on from the beginning of the Survey by the Superintendent and by Professor C. Dwight Marsh. The progress of the work has necessarily been slow, since only their leisure time could be devoted to it. The completion of the hydrographic surveys, with the attendant reduction of expenditure in that direction, permitted the employment of a biological assistant in 1900, and Mr. Chancey Juday has been appointed to that position.

The investigations hitherto carried on have concerned the lower life of the open water—the so-called *plankton*. On this supply of plants and animals, the higher life of the lakes depends in large measure for its support. Comparatively little study has been given in this country to this department of lake biology and this Survey has, therefore, given it the first place.

Professor Marsh spent several weeks of the summer of 1899 in a comparison of the biological conditions of Lake Winnebago and Green Lake. These were selected because the first is a large and very shallow lake and of great practical interest from the standpoint of the fisherman. This lake and others connected with the Fox and Wolf rivers, produce fish in enormous quantities—greater probably than any other of the inland lakes, so that Lake Winnebago is a peculiarly interesting body of water for the student of fresh water life. Green Lake, on the other hand, is a typical deep water lake, whose life resembles in many respects that of the great lakes. These two bodies of water, therefore, lying so near to each other, represent extremely different biological conditions and a comparison of their life is peculiarly instructive. In 1899 Professor Marsh gave most of his time to the study of the fauna of Lake Winnebago, as he was already well acquainted with that of Green Lake. A temporary laboratory was fitted up at Stony Beach, largely with apparatus loaned from the laboratories of Ripon College, and for two months of the summer Professor Marsh and an assistant carried on the collection and study of material from this lake. Since this time collections have been made at regular intervals from both Green Lake and Lake Winnebago and several trips have been made to lakes in more distant parts of the state. The investigation of the material collected is still going on and considerable additional collecting and study must be done before any general results can be reached.

The Superintendent and Mr. Juday have been engaged in a somewhat similar investigation of the life of various lakes, ranging from Lake Geneva to the Waupaca Lakes. The work has been of a preliminary character, designed especially to ascertain the lakes whose fauna and flora furnish the best oppor-



tunities for more detailed investigation in the future. The Superintendent has also been completing a somewhat elaborate study of the temperatures of these lakes, as furnishing one of the important conditions for life. A report on this subject has long been nearly finished, but its completion has been delayed by pressure of administrative work. It is, however, nearly ready for the press and will be published in the immediate future.

*E. Copper-bearing Rocks of North Wisconsin.*—It was understood that one of the main subjects of investigation by the Survey during the two years past would be the copper-bearing rocks of Northern Wisconsin. On the organization of the field work for the summer of 1899 Professor U. S. Grant, then connected with the Geological Survey of Minnesota, was appointed to take charge of this investigation. Professor Grant had had long experience on the Minnesota Survey with the rocks adjacent to Lake Superior, and was, therefore, peculiarly well fitted to undertake this difficult investigation. During the field season of 1899, which lasted from May 15 to September 1, he was assisted by Dr. C. P. Berkey of the University of Minnesota. The areas studied in detail were as follows:

(1) *The St. Croix Range.*—This range was mapped in detail for an area twenty miles in length (N. E. and S. W.) by four to six miles in width, traverses being made north and south across the range usually every half mile. This work extended from the southwest corner of Douglas County northeast to and including T. 45 N., R. 12 W. Outside of this area a small amount of reconnaissance work was done.

(2) *The Douglas Copper Range.*—This range was mapped in detail from the west side of T. 47 N., R. 14 W., to the east side of T. 48 N., R. 10 W. This area included all of this range in the state except for a distance of six miles on the western side of Douglas county. The area mapped in detail is forty miles long (east and west) and from three to four miles wide. Outside of this area a small amount of less detailed work was done. In the latter part of the season a trip, for comparative study, was taken to the copper-producing district of Michigan.

During the winter a preliminary report on the copper-bearing rocks of Douglas County was prepared and published as Bulletin No. VI of the Survey. This bulletin contained 55 pages, four maps, and seven illustrations of localities interesting geologically or of economic importance in this district. This bulletin was issued in the spring of 1900 and was sent out to all persons applying for it. The greater part of the edition, however, was retained in order that the results of the investigations of the summer of 1900 might be incorporated.

The field season of 1900 lasted about two months, July and August. Professor Grant was assisted by Mr. H. M. Adkinson, of the University of Chicago, and Mr. H. F. Little, of Northwestern University. The area studied in detail extends from the west side of T. 42 N., R. 11 W., to the east side of T. 45 N., R. 6 W. This area is about forty miles in length (northeast and southwest) and from four to six miles in width. It includes the important parts of the copper-bearing rocks in Washburn and Bayfield counties, except for a distance of six miles on the east side of Bayfield County. Outside of this area a small amount of less detailed work was done. At the close of the field season, Professor Grant began the preparation of a brief report on the rocks of the area studied during 1900. This will be printed as an additional chapter and incorporated with the report of the work of 1899, and will be issued as a second edition of that report. The chapter on the general geological and economic conclusions will also be revised in the light of the additional knowledge which has come from the investigations of the past summer.

*F. Physical Geography.*—Professor D. P. Nicholson has now spent three seasons in field work on the lake region of Northern Wisconsin. This is an area roughly triangular in shape, about 45 miles from north to south and 60 miles from east to west and including about 2,000 square miles. The region contains 800 lakes, or more, and much of it is still covered by forest. Access to the district is gained by the C. & N. W. and C., M. & St. P. railroads, by some county roads, and by numerous logging roads. Professor Nicholson has traversed

the district in all directions and is now preparing a report, both on the general geology of the country and on the lakes and the topography intimately connected with them. He has also made a reconnaissance of the lake region in the St. Croix valley, in order to compare the geology of that district with that of North-eastern Wisconsin. The lakes of the northeastern part of the state lie in an area bounded north and south by moraines; the lakes extending into the moraine on both sides. Between the moraines is a sandy plain between 20 and 30 miles in width, sloping to the south, in which lie most of the very numerous lakes. These are usually shallow; the greatest depth found being 95 feet, while most do not exceed 30-40 feet in depth.

This region is one which now attracts many thousands of summer visitors annually and is, therefore, well worthy of special report. Professor Nicholson's account of the district will be written in such a way as to be of general interest, as well as of scientific value.

The first publication on the physical geography of the state has been issued during the past two years, namely: Professor Salisbury's bulletin on *The Geography of the Region about Devil's Lake and the Dalles of the Wisconsin*. This publication is spoken of in a later section of the report, and the work of Professor Fenneman, on the physical geography of the lakes of Southern and Eastern Wisconsin is mentioned on a previous page.

#### IV. PUBLICATIONS.

During the past two years the Survey has issued four bulletins; two of which belong to the Economic Series on one each to the Scientific and the Educational Series. The titles of these bulletins are as follows:

Bulletin No. III. Scientific Series No. 2.—A CONTRIBUTION TO THE GEOLOGY OF THE PRE-CAMBRIAN ROCKS OF THE FOX RIVER VALLEY, WISCONSIN. Samuel Weidman, Assistant Geologist Wisconsin Geological and Natural History Survey. Pp. 63; 10 plates.

Bulletin No. IV. Economic Series No. 2.—THE BUILDING AND ORNAMENTAL STONES OF WISCONSIN. E. R. Buckley, Assistant Geologist Wisconsin Geological and Natural History Survey. Pp. 544; 69 plates, of which seven are colored, and one map.

Bulletin No. V. Educational Series No. 1.—GEOGRAPHY AND SURFACE GEOLOGY OF THE REGION OF DEVIL'S LAKE AND THE DALLES OF THE WISCONSIN. R. D. Salisbury, Professor of Geographic Geology, University of Chicago, and W. W. Atwood. Pp. 146; 38 plates, 47 figures in the text.

Bulletin No. VI. Economic Series No. 3.—THE GEOLOGY OF THE COPPER-BEARING ROCKS OF DOUGLAS COUNTY. U. S. Grant, Professor of Geology, Northwestern University. Pp. 55; 11 plates, of which four are maps.

Bulletin No. III by Dr. Weidman was issued late in the year 1898 and is a careful scientific study of the old volcanic rocks in the neighborhood of Berlin, Waushara, and Utley. These rocks are extensively quarried and are of considerable economic importance, as well as of scientific interest. The report deals with them from the scientific point of view.

Bulletin No. IV by Dr. Buckley, is by far the largest publication that the Survey has yet issued. It treats of the building stones of the state, both from the scientific and the practical point of view, and describes each of the important quarries; thus giving a full account of the industry. It is fully and beautifully illustrated by 69 plates; seven of which are colored, illustrating the main types of granites and sandstones. These plates were photographed from the stones and were engraved and printed with great care and skill and are among the most successful illustrations of stone hitherto published. Five thousand copies of this bulletin were printed, of which something more than half have already been distributed. There has been a large and constant demand for this report since it was issued, in July, 1899.

Bulletin No. V is the first educational bulletin which the Survey has issued. It is an unusually successful attempt to present the results of careful and independent scientific study in such

a manner that it will be both available as materials for school instruction and of interest to the general reader. It deals with the development of the topography and scenic features of the Devil's Lake region—one of the most interesting districts of the state from a scientific point of view and one whose scenery is of great economic value. The senior author of the bulletin—Professor Salisbury—has devoted a large amount of study to this district, as he has annually spent several weeks there in field work with his classes. The bulletin has aroused much interest among the teachers of the state and has been more sought for by them than has any other of the publications of the Survey.

Bulletin No. VI is a preliminary account of the survey made by Professor Grant of the copper-bearing rocks in Douglas county. This bulletin was issued in the spring of 1900, in order that the results might be made public before the open season of that year. During the following summer Professor Grant extended his work to the southern, or Minong, range, which lies almost entirely to the south of Douglas County. Professor Grant has completed a similar report on this region and the general results have been rewritten in the light of the additional information obtained during the summer. This report will be printed as a new chapter of Bulletin No. VI, which will be issued in a second edition with this additional matter.

At the time of the issuing of the last biennial report, one of the hydrographic maps had been issued—that on Lake Geneva. Since that date seven additional maps have been printed and two more are in the hands of the printer. The maps that have been issued thus far are as follows:

- No. 1. Lake Geneva. Scale, two inches to the mile.
- No. 2. The Oconomowoc-Waukesha Lake District. Scale, two inches to the mile.
- No. 3. Lake Beulah. Scale, six inches to the mile
- No. 4. Elkhart Lake. Scale, seven inches to the mile.
- No. 5. The Chain of Lakes, Waupaca. Scale six inches to the mile.
- No. 6. Delavan and Lauderdale Lakes. Scale, four inches to the mile.

No. 7. Green Lake. Scale, three inches to the mile.

No. 8. Lake Mendota. Scale, three inches to the mile.

There are now in the hands of the printer the following maps :

No. 9. Big Cedar Lake, Washington county.

No. 10. Lake Monona.

All of these maps except Nos. 8 and 10, furnish the hydrography alone, since the funds at the disposal of the Survey did not permit the determining of the topography of the land adjacent to the lakes. In the survey of Lakes Mendota and Monona, however, the topography of the shores was determined without expense to the Survey by the students of successive classes in the University of Wisconsin. These maps, therefore, contain much information about the shores which is lacking in the others. More care, therefore, has been taken in issuing these maps and they have been lithographed, while in the other cases the outlines of the map are a photographic zinc etching. The depth of the water in each lake is indicated by contour lines usually placed at 10 foot intervals. In the case of Green Lake, however, the interval is 20 feet, as the lake is very deep and its shores are steep, so that the use of the smaller interval would add little or nothing to the information given by the map. Lakes Monona and Mendota have been very carefully sounded, especially in the region of the shore, and their depth is shown by 5 foot contours. In all of the maps the depth of the water is also indicated by a blue tint, increasing in strength of color with the depth of the water.

Lakes Kegonsa and Waubesa have been surveyed and a map containing these lakes is now being drawn. Altogether some 58 lakes have been thus surveyed, or, if the separate basins are reckoned in the Lauderdale Lakes and Lake Beulah, the number will be increased to 63. The Survey has thus been able to bring together a large amount of accurate information regarding a considerable number of lakes in the southern part of the state. This will serve as a basis for further investigations into the life of the lakes. Such investigations can now be made with an accuracy which would be entirely wanting if the knowledge of the depth and slope of the shores was conjectural or derived from superficial observation only.

The larger part of the edition of each of these maps has been left unfolded for future use as the necessities of the Survey indicate. About 1,000 copies of each map have been folded and provided with manilla paper covers for immediate distribution and use.

*Future Publications.*—I have already stated that two maps—those of Lake Monona and Cedar Lake—are in the hands of the printer and will probably be issued before the appearance of this report, and that the map containing Lakes Kegonsa and Waukesha is now being drawn and will be issued in the near future. Several bulletins are in press, or are in active preparation. The first part of Dr. Buckley's report on the clays and the clay industries of the state is now in the hands of the printer and will probably be issued by the first of March. The bulletin by the Superintendent of the Survey, on the temperatures of the lakes in Southern and Eastern Wisconsin, is now nearly ready for the press and I trust will be in the hands of the printer before the close of the year. Professor Nicholson is actively engaged in preparing his report on the lake region of Northeastern Wisconsin. The field work for this report is now finished and the report should be ready for publication very shortly. Professor Fenneman is writing the results of his study on the physical geography of the lakes of Southern and Eastern Wisconsin. While this report will be written during the coming winter, it is not probable that it will be ready for publication until some time during the summer of 1901, since it will apparently be necessary to revisit next summer some of the lakes in order to complete the field work.

I had fully expected that Professor Cheney's report on the forest trees of the state would be in print before the date of this report, but the serious illness of Professor Cheney prevented him from doing any work during the summer, and, as a result, the preparation of this bulletin has been correspondingly delayed. The drawings for the illustrations have been completed for nearly a year and a great part of the text is now ready. During the present college year also, I expect the completion of a bulletin by Professor Hobbs of the University of Wisconsin,

on certain volcanic rocks from the center of the state. This bulletin will resemble in matter and scope the report by Dr. Weidman, which has already been issued at Bulletin No. III. It will serve as an extension and completion of the detailed work on this group of rocks in the state. The Survey has, therefore, at present in press or in active preparation the materials for six new bulletins. During the coming winter Dr. Buckley will go on with the more detailed scientific tests and investigations of the clays of the state in preparation for a second part of his report on that subject.

#### V. PLANS FOR THE FUTURE.

The first duty assigned to this Survey by the statute which established it (Chapter 297, Laws of 1897) was the completion of the geological survey of the state in both its scientific and economic aspects. To this work the Survey has devoted out of the appropriations made by the state far more than to any other department. In carrying out the first duty named,—the completion of the geological map of the state,—Dr. Weidman was at once engaged to work out the intricate and difficult geology of the great central area of crystalline rocks, whose detailed survey was not possible twenty-five years ago on account of the unsettled condition of the country. This work has been steadily carried on and more than 3,000 square miles of this area have now been carefully examined. The crystalline area includes, however, some 25,000 square miles, and, while the most difficult part of it has been studied, some years must still elapse before the work can be completed with the force at the disposal of the Survey. Where the funds at the command of the Survey permit the employment of a single geologist only, progress must necessarily be somewhat slow. The area covered by the Survey is also small, on account of the difficulties of the geology and in part of the region on account of the small number of exposures of rock.

During the last year and a half the department of economic geology of the Survey has been devoting its attention more par-



ticularly to the study of clays, marls, and road materials. The demand for information along these lines has been constant and increasing. The funds at the disposal of the Survey have not permitted the placing of forces in the field sufficiently large to complete these reports in two years, and the work at the present time has practically only been begun. The first part of the bulletin on the Clay Resources of the state will soon be published. An examination of this report will give some idea of the importance of the subject which is treated and furnishes a better conception of this vast undeveloped field which is yet to be opened up. This subject of the clay resources has not been completed. There are many tests which must yet be made to determine the suitability of the clay deposits for purposes other than those for which they are now used. It will require at least some time to complete the second part of the report, but, when finally published, the first and second parts will be equivalent to the report on the building and ornamental stones issued two years ago. The investigation of the clays has been a much more difficult problem to undertake than was that of the building stones. This investigation requires the expenditure of much more money and requires more labor and care than the investigation above referred to. If the second part of this report is completed in two years there will be at the disposal of the people of the state information of inestimable value on the clay resources of the state.

The Survey has begun the investigation of the marls of the state. This work was carried on in the field for about six weeks during the last summer, but could not be continued on account of limited funds. The investigation, so far as conducted, shows that the state is rich in deposits of marl which are thought to be of sufficient purity to be used in the manufacture of Portland cement. It is hoped that during the next few years the marl deposits can be thoroughly explored along with the clays, and information given to the public whereby Portland cement manufactories may be established. The Survey is constantly receiving inquiries relative to the occurrence of marls in the state, but the expensive character of the chemical work con-

nected with their investigation has necessarily made the answers to these inquiries indefinite.

Iron, stone, brick, terra cotta, and lime are certain to be the constructional materials of the future, not only for this state, but for every state where the lumbering industry is being rapidly extinguished by the cutting of the forests. It seems especially fitting that the Geological Survey should be continued until these important resources have been thoroughly investigated and the public has become well informed upon every phase of these subjects so important to the future of Wisconsin. The Geological Survey makes itself a bureau of information, from which information may be obtained at any time relative to these subjects. Brick makers, quarrymen, miners, cement manufacturers, and other men engaged in the development of the natural resources of the state may apply to this bureau for information and obtain assistance in locating the resources in which they are interested. The information and opinions which they obtain on the character and value of the deposits are entirely impartial and the investment of money in new enterprises becomes sure if such information is obtained from men who are not interested from a financial standpoint.

Not only have the brick and cement resources been given attention by the Survey, but a laboratory has been equipped with machinery for testing road materials. Considerable time and attention has been paid to the determination of the value of the different rocks occurring within the state for purposes of building macadam roads. The wearing and cementing qualities of different kinds of rock have been determined. Information has also been sent to various cities and companies as to the value of different stones for this purpose. The work which the Survey has undertaken in this direction can not be completed in a year or two years, but must necessarily require many years before it is ultimately finished. These tests cannot be made all at one time, but must be completed as there is a demand for them. This demand will not come in one year, but will come year by year, as occasion requires. The knowledge which the Survey has of the stone resources of the state makes it espe-

cially fitting that this should be the source from which to obtain information as to the best materials for the improvement of the highways of the state.

The lead, zinc, copper, and iron mining interests should not be neglected. For two years the Survey has had a party in the northern part of the state, investigating the copper resources. The Keweenaw rocks, in which the copper occurs, extend over a large part of the state, and it is evident that a small party of two or three men cannot cover the whole region in so short a period as has been allotted to the work by the Survey. The Survey has been unable to give any attention whatever to the important lead and zinc resources of the southwestern part of the state. The people who have become interested in the development of mining in this section of the state are very desirous that we should give them assistance in opening up new districts and in working up the old ones in that region. They desire the direction of the ranges, the depth of known openings, and the depth at which the different beds of ore occur. They are also in need of expert work on the analysis of ores and rock and the method of treatment and reduction. It is hoped that with the continuation of the Survey sufficient provision will be made so that assistance may be given from year to year to the people in the mining districts of the state. It is not expected that the work which is necessary can be done in two or three years, but it is hoped that it may be begun during the next year and continued as long as assistance is required.

Not infrequently demands are made of the Survey for information concerning the character and nature of the water supply in different parts of the state. Well drillers seek information concerning the character of the rock which they will be required to pass through in drilling wells in different parts of the state. They also desire the depth at which they can get water. This information can only be given after a vast amount of information has been gathered relative to the present well borings. As rapidly as possible, the Survey is collecting this information and it is hoped that before many years we will be in a position to furnish much information to the people en-

gaged in this work. The problem of water supply in this state is very important to the people and should be given its share of attention along with the investigation of the other resources.

The Survey has been unable to do much in the direction of the investigation of the forests. Its first piece of work was a preliminary survey made by Mr. Roth of the United States Department of Agriculture, whose expense was shared by that department and the Survey. This report furnishes a basis on which further investigations can and ought to be made, and on which practical work in forestry can be started. Other pressing necessities, however, have prevented the appropriation of funds for this purpose, and the only work done during the last two years on the forests has been in the direction of the preparation of Professor Cheney's bulletin on the forest trees of the state, to which the Survey has devoted small sums for the payment of Professor Cheney's actual expenses in the field, and for the preparation of drawings to illustrate the report. Unless the funds of the Survey are increased, it will not be practicable to extend its work in this direction.

The study of the lakes of the state, with their animal life, has been progressing slowly. Until the summer of 1900 the study of the animal life has been carried on by the Director and by Professor Marsh only. Last July a biological assistant was engaged for the first time, and a beginning is now made of systematic work on this subject, extending throughout the year. This work must necessarily move slowly, since much of it is in new and untrudden fields, and it will be better to carry on the investigations with a moderate force than to attempt to expend large sums at once. The lakes of the state are, however, one of its most valuable natural resources, both as related to the fish-culture, and especially in relation to the presence of summer visitors. It is the intention of the Survey, therefore, to bring together gradually the information out of which can be made a complete report on the lakes of the state, especially those of the southern and eastern part, in regard to their hydrography, physical geography, the chemistry of their waters, and their life—both that of the lower forms of being and those of economic importance.

A beginning has been made on the account of the physical

geography and natural history of the state in the publication of Professor Salisbury's bulletin on the Devil's Lake region, and in the preparation of Professor Fenneman's account of the physical geography of the lakes of the state. This work should be carried on by the Survey about as it has been in the past taking up one type after another of the physical geography of the state as opportunity offers, and as the money at the disposal of the Commissioners permits. No state in the Union has a more varied topography, or is better suited for illustrating the principles of physical geography, and the Survey should aim at preparing a series of educational reports which should ultimately cover all of the districts of the state and which can finally be brought together into one general account of the principles of physical geography and surface geology, based on the facts as found within our own limits.

This account of the work done by this Survey during the past, and that which still lies before it, shows several things: First, that a large amount of investigation valuable to the people of the state and needed by them, has been already accomplished by this Survey; second, that the amount of work remaining to be done is far greater than that which has been done in the past; and, third, that the amount of investigation needed is so great and the nature of the demands made upon the Survey are such that its work cannot be finished in three or four years. If the duties of the Survey were purely scientific—the completion, for instance, of the geological map of the state or the preparation of a report on its animal life or its plants—it would be possible to set a time at which this task could be finished, if the amount of money to be devoted to it were known, but the investigation of the varied natural resources of the state offers problems of another kind and new questions are continually coming forward to be solved. The possibility of developing profitable mining properties, the value of clay deposits for the manufacture of brick and other wares, the suitability of marls and clay for the manufacture of Portland cement, the depth to which it will be necessary to bore in order to obtain water in different localities, the possibility of developing quarries of building and other stone, the utilization of quartz and other minerals which occur

in varied abundance, the determination of minerals for the satisfaction of the people, are questions which are constantly recurring year after year, which can only be answered by a department which is prepared to render professional advice. If an appropriation should be made for two years, it simply means that the state is providing for a limited time professional services which must be withheld during the subsequent years unless the appropriation is renewed. The experience of the past three and a half years has shown that there are also numerous scientific questions which the state ought to investigate but which will be more profitably studied by an investigation extending over several years than by the expenditure of a larger sum for a shorter time. Such are, for instance, the problems relating to water supply and the study of our lakes, both from the economic and scientific point of view. Numerous new questions are to be settled, whose solution will involve time, and whose study ought to extend over a term of years. The same may be said of the duty of preparing educational bulletins, with which the statute of 1897 charged the Survey. These can best be prepared in the manner which the Survey has been following in the past, taking up one topic after another and thus extending the completion of this series of bulletins over a considerable number of years. In planning for the future, therefore, I would strongly recommend that the Commissioners request of the Legislature such an appropriation as will enable the Survey to carry on its present departments strongly and efficiently and to provide for a moderate extension of its work to those parts of the state and to some of those subjects which it has hitherto been unable to reach. I should also urgently recommend that they request the Legislature to make the appropriation a permanent one, so that the work of the Survey may be planned, not with reference to the two-year period, as has been necessary in the past, but with a view of distributing its investigations over a longer time and thus accomplishing its duties more effectually and more economically.

Respectfully submitted,

E. A. BIRGE,

*Director and Superintendent.*

October 1, 1900.

## FINANCIAL REPORT, FROM SECRETARY OF STATE.

### GEOLOGICAL SURVEY.

Oct. 1, 1898—Sept. 30, 1899.

Alexander, A. A. ....	\$12 50
Anthony, G. ....	51 05
American and U. S. Express Cos. ....	50 33
Anson, C. H. St. J. ....	43 50
Birge, E. A. ....	640 04
Buckley, E. R. ....	1,493 03
Berkey, Chas. P. ....	150 00
Bausch & Lomb Optical Co. ....	9 22
Chandler, E. F. ....	4 90
Clements, J. M. ....	5 20
Chamberlain, P. ....	18 80
Coen, B. F. ....	18 45
Cole, Chas. ....	185 25
Denniston, F. K. ....	114 12
Eimon Mercantile Co. ....	19 31
Frost, G. W. ....	22 31
Grant, U. S. ....	820 71
Hedke, Chas. R. ....	24 20
Harper, Blanche ....	36 33
Hegg, J. R. ....	4 30
Hollister's Pharmacy ....	8 77
Hobbs, Wm. H. ....	21 81
Holden, R. J. ....	13 50
Heine, R. E. ....	4 00
Hinman, A. S. ....	109 00
Hemingway, E. E. ....	93 30
Johnson, Harry ....	18 00
Knowles, J. H. ....	14 30
Leith, C. K. ....	98 92
Lottes, W. G. ....	4 80
Kny-Scheerer Co. ....	53 75
Lord Bros. Jewelry Co. ....	4 25
Martindale, J. W. ....	91 00
Marsh, C. D. ....	251 78
Montello Granite Co. ....	16 00
McLaggan, K. W. ....	58 60
Nommensen, R. A. ....	17 70
Nicholson, J. F. ....	18 00
Nicholson, D. P. ....	238 00
Ohm's, Fred C., Son ....	59 40
Pickarts & Nicodemus ....	3 00
Pease-Humphrey Hardware Co. ....	12 85
Philbrook & Tubbs ....	47 69
Rathbun, R. ....	86 30
Stone, M. B. ....	61 10
Sumner, L. D. ....	5 25
Smith, W. N. ....	119 62
Smith, L. S. ....	395 68

Smith, A. F. ....	43 10
Sanford, Fannie G. ....	15 85
Salisbury, R. D. ....	400 00
Silbernagel, J. J. ....	78 00
Van Hise, C. R. ....	66 58
Weidman, S. ....	1,312 60
Winslow, H. G. ....	7 00
Wilson, J. ....	11 55
	<hr/>

\$7,584 60

Oct. 1, 1899—Sept. 30, 1900.

American Express Co. ....	\$304 45
Atwood, W. A. ....	5 00
Allis Co., Edw. P. ....	13 40
Allyn, Abbie ....	161 11
Buckley, E. R. ....	2,161 61
Buckley, F. M. ....	15 40
Birge, E. A. ....	1,114 27
Becker, Christian ....	134 00
Bausch & Lomb Optical Co. ....	32 15
Buehler, H. A. ....	48 20
Conlin, D. F. ....	7 25
Cassels, Geo. H. ....	12 12
C., M. & St. P. R. R. ....	18 50
Comstock, E. H. ....	7 50
Clark & Mills ....	400 00
Capital City Paper Co. ....	9 55
Denniston, F. K. ....	50 00
Daniells, W. W. ....	206 75
Democrat Printing Co. ....	24 75
Eimer & Amend ....	169 93
Ferris, W. S. ....	78 00
Frost, G. W. ....	4 80
Fenneman, N. M. ....	131 75
Gurley, W. & L. E. ....	56 05
Gould, Wells & Blackburn ....	22 67
Greig, J. ....	12 50
Grant, U. S. ....	1,407 68
Holden, R. J. ....	3 05
Harper, B. ....	26 67
Hoyt, W. A. ....	7 75
Hargrove, R. W. ....	6 50
Hedke, Chas R. ....	8 20
Icke, John ....	12 70
Illinois Supply & Construction Co. ....	25 50
Juday, C. ....	119 20
Kraatsche, H. ....	11 37
Marsh, C. D. ....	145 77
Minneapolis Office & School Furniture ....	21 54
Nicholson, D. P. ....	148 50
Nelson J. Lloyd ....	238 17
Ohm's, Fred C., Son ....	33 85
Peppel, S. V. ....	745 80
Pickarts & Nicodemus ....	5 00
Peterson, C. N. ....	3 00
Rust, Owen, Lumber Co. ....	57 52
Richards & Co. ....	11 50



Springer Torsion Balance Co. ....	17 00	
Stone, M. B. ....	2 75	
Stephenson & Studeman ....	12 85	
Smithsonian Institute ....	55 70	
Smith, L. S. ....	339 20	
Shane, N. A. ....	57 73	
Snyder, T. L. ....	10 59	
Standard Telephone & Electric Co ....	14 35	
Sanford, F. G. ....	110 00	
Shepard, H. L. ....	18 00	
Silbernagel, J. J. ....	38 00	
Smith, A. F. ....	41 30	
Tyrrell, James ....	246 61	
Van Hise, C. R. ....	8 63	
U. S. Express Co. ....	123 35	
University Co-Operative Co. ....	14 68	
Weidman, S. ....	1,535 12	
Wykoff, Seamans & Benedict ....	87 75	
		<b>\$11,109 27</b>
<b>Total, two years .....</b>		<b>\$18,693 87</b>

## STATUTES OF WISCONSIN RELATING TO THE GEOLOGICAL AND NATURAL HISTORY SURVEY.

### CHAPTER 297, LAWS OF 1897.

An Act to provide for the investigation of the natural resources of the state of Wisconsin, and providing an appropriation therefor.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. There is hereby constituted a geological and natural history survey of the state of Wisconsin.

SECTION 2. This survey shall have for its object:

(1) The completion of the geological survey of the state, and especially the examination of the rocks, with reference to the occurrence of iron ores, building stones, and other valuable mineral products, and in reference to their value as material for road construction.

(2) A study of the soils of the state.

(3) A study of the plants of the state, and especially of the forests, with reference to their cultivation and preservation.

(4) A study of the animal life of the state, and especially the occurrence, distribution, and production of fish in the lakes and streams of the state, and a study of foods and enemies of fish.

(5) The preparation of an account of the physical geography and natural history of the state, in such form as to serve as manuals for the public schools, and of special reports on subjects of economic importance, in such form as to be of direct service to the people.

(6) The completion of the topographic map of the state begun by the United States Geological Survey; but no money shall be expended for topography unless an equivalent amount be expended for this purpose in the state by the United States government.

SECTION 3. This survey shall be governed by a board of commissioners, consisting of the governor of the state, the state superintendent of public instruction, the president of the state university, the president of the commissioners of fisheries, and the president of the Wisconsin Academy of Sciences, Arts and Letters. The commissioners shall meet within thirty days after the passage of this act, and organize as a commission and adopt by-laws for their government, not inconsistent with law, and shall meet at such time and places as they may prescribe. A majority shall be a quorum. They shall receive no compensation, but each shall be reimbursed his expenses actually and necessarily incurred in the performance of his official duties, out of such appropriation as may be made by the legislature. They shall choose from their number a president, secretary, and such other officers as their by-laws may prescribe; but no officer shall receive any compensation, except such as is herein provided for. The commissioners shall have general charge of the survey, and shall appoint a superintendent of the survey, and, on his nomination, such assistants and employes as they may deem necessary. They shall fix the compensation of all persons employed in the survey, and may remove them at pleasure.

SECTION 4. It shall be the duty of the commissioners to prepare a report before the meeting of each legislature, showing the progress and condition of the survey, giving an account of money spent, together with such other information as may be deemed necessary and useful. The superintendent shall transmit to the commissioners, from time to time, special reports, with necessary illustrations and maps, as these are completed. If approved by the commissioners, they shall be transmitted to the commissioners of public printing, who are authorized to have the reports published in a suitable manner, as independent reports, as bulletins of the state university, or in the transactions of the Wisconsin academy of sciences, arts, and letters, as the commissioners of the survey deem best. If published as independent reports, it shall be the duty of the commissioners of public printing to decide as to the number of copies in the edition of each particular report. Five copies of each report shall be delivered to each of the state officers, and to each member of the legislature. The number of copies provided by law for other public documents shall be furnished to the state historical society, the library of the state university, and other state institutions. The remainder of the independent reports shall be distributed, used in exchange, or sold by the commissioners of the survey, as the interest of the state and of science demands. All moneys obtained by the sale of the report shall revert to the state treasury, as a part of the general fund. Volumes obtained in exchange for the reports shall be added to the library of the Wisconsin academy of sciences, arts, and letters. The superintendent of public property shall furnish, upon the requisition of the president of the commissioners of the survey, such stationery and postage stamps as may be necessary for the use of the commissioners and the superintendent of the survey in official business.

SECTION 5. After material collected shall have served for the purposes of the survey, it shall be distributed to the state university, the colleges of the state, the state normal schools, and the free high schools of the state, under the approval of the commissioners of the survey, in such a manner as to be of the greatest advantage to education in the state.

SECTION 6. There is hereby annually appropriated for two years to the commissioners of the geological and natural history survey, out of any money in the treasury not otherwise appropriated, the sum of \$5,000, the first appropriation to be paid in the current fiscal year.

SECTION 7. This act shall take effect and be in force from and after its passage and publication.

Approved April 22, 1897.

#### CHAPTER 163, LAWS OF 1899.

An Act to appropriate a sum of money for the further prosecution of the geological and natural history survey of the state.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. There is hereby appropriated for the further prosecution of the geological and natural history survey, out of any money in the treasury not otherwise appropriated, the sum of ten thousand dollars annually for the term of two years. This money shall be expended by the commissioners of said survey for the purpose of executing the duties assigned to them by chapter 297 of the laws of 1897.

SECTION 2. This act shall take effect and be in force, from and after its passage and publication.

Approved April 12, 1899.

## PUBLICATIONS OF THE SURVEY.

### 1. BULLETINS.

The publications of the Survey are issued as bulletins, which are numbered consecutively, and each bulletin is independently paged and indexed, no attempt being made to group them in volumes. The bulletins are issued in three series:

A. *Scientific Series*.—The bulletins so designated consist of original contributions to the geology and natural history of the state, which are of scientific interest rather than of economic importance.

B. *Economic Series*.—This series includes those bulletins whose interest is chiefly practical and economic.

C. *Educational Series*.—The bulletins of this series are primarily designed for use in the schools.

The following bulletins have been issued:

#### BULLETIN NO. I. ECONOMIC SERIES NO. 1.

On the Forestry Conditions of Northern Wisconsin. Filibert Roth, Special Agent, United States Department of Agriculture. 1898. Pp. VI., 78; 1 map. Sent on receipt of 10c.

#### BULLETIN NO. II. SCIENTIFIC SERIES NO. 1.

On the Instincts and Habits of the Solitary Wasps. George W. Peckham and Elizabeth G. Peckham. 1898. Pp. IV., 241; 14 plates, of which 2 are colored; 2 figures in the text. Sold at the price of \$1.50 in paper and \$2.00 bound.

#### BULLETIN NO. III. SCIENTIFIC SERIES NO. 2.

A Contribution to the Geology of the Pre-Cambrian Igneous Rocks of the Fox River Valley, Wisconsin. Samuel Weidman, Ph. D., Assistant Geologist Wisconsin Geological and Natural History Survey. Pp. 63; 10 plates; 13 figures in the text. Sent on receipt of 10c.

#### BULLETIN NO. IV. ECONOMIC SERIES NO. 2.

On the Building and Ornamental Stones of Wisconsin. Ernest Robertson Buckley, Ph. D., Assistant Geologist Wisconsin Geological and Natural History Survey. 1898 (issued in 1899). Pp. XXVI., 544; 69 plates, of which 7 are colored, and 1 map. Sent to citizens of Wisconsin on receipt of 30c; to others for \$1.25.

#### BULLETIN NO. V. EDUCATIONAL SERIES NO. 1.

The Geography of the Region About Devil's Lake and the Dalles of the Wisconsin, with some notes on its surface geology. By Rollin D. Salisbury, A. M., Professor of Geographic Geology, University of Chi-

icago, and Wallace W. Atwood, B. S., Assistant in Geology, University of Chicago. 1900. Pp. X, 151; 38 plates; 47 figures in the text. Sent on receipt of 30c.

BULLETIN No. VI. ECONOMIC SERIES No. 3.

Preliminary Report on the Copper-Bearing Rocks of Douglas County, Wisconsin. By Ulysses Sherman Grant, Ph. D., Professor in Northwestern University. 1900. Pp., 55; 11 plates. Sent on receipt of 5c.

2. BIENNIAL REPORTS.

Besides these bulletins the Survey has published two biennial reports, which relate to administrative affairs only and contain no scientific matter:

First Biennial Report of the Commissioners of the Geological and Natural History Survey. 1899. Pp. 31.

Second Biennial Report of the Commissioners of the Geological and Natural History Survey. 1901. Pp. 44.

3. FORTHCOMING BULLETINS.

The following bulletins will be issued early in the year 1901:

BULLETIN No. VI. ECONOMIC SERIES No. 3. (Second Edition.)

Preliminary Report on the Copper-Bearing Rocks of Douglas County, and Parts of Washburn and Bayfield Counties. Ulysses Sherman Grant, Professor of Geology, Northwestern University.

BULLETIN No. VII. ECONOMIC SERIES No. 4.

The Clays and Clay Industries of Wisconsin. Part I. E. R. Buckley, Assistant Superintendent, Wisconsin Geological and Natural History Survey. In charge of Economic Geology.

BULLETIN No. VIII. SCIENTIFIC SERIES No. 3.

The Pre-Cambrian Igneous Rocks of the Lower Fox River Valley. W. H. Hobbs, Professor of Mineralogy, University of Wisconsin, and C. K. Leith, Geologist, United States Geological Survey.

The following bulletins are in an advanced state of preparation, the first two on the list being nearly ready for the printer:

The Temperature of Lakes in Southern Wisconsin. E. A. Birge, Director, Wisconsin Geological and Natural History Survey.

The Lake Region of Northern Wisconsin. D. P. Nicholson, Professor of Geology, Lawrence University.

The Forest Trees of Wisconsin. L. S. Cheney, Assistant Professor of Pharmaceutical Botany, University of Wisconsin. ,

The Physical Geography of the Lakes of Southern and Eastern Wisconsin. N. M. Fenneman, Assistant, Wisconsin Geological and Natural History Survey.

4. HYDROGRAPHIC MAPS.

There have been prepared hydrographic maps of the principal lakes of southern and eastern Wisconsin. This work is in charge of L. S. Smith, Assistant Professor of Topographical Engineering, University of Wisconsin.

The following maps are now printed:

- No. 1. Lake Geneva.
- No. 2. The Oconomowoc-Waukesha Lake District.
- No. 3. Lake Beulah.
- No. 4. Elkhart Lake.
- No. 5. The Chain of Lakes, Waupaca.
- No. 6. Delavan and Lauderdale Lakes.
- No. 7. Green Lake.
- No. 8. Lake Mendota.

	Size of Plate, Inches.	Scale, Inches Per Mile.	Contour Inter- val, Feet.
No. 1 .....	17.5x10.8	2	10
No. 2 .....	29.8x19.1	2	10
No. 3 .....	22.5x20.0	6	10
No. 4 .....	15.5x13.1	5	10
No. 5 .....	21.7x20.6	6	10
No. 6 .....	22.5x16.8	4	10
No. 7 .....	26.0x17.8	3.2	20
No. 8 .....	23.7x19.5	6	5

In all of these maps the depth of the lakes is indicated by contour lines, and by tints in all except No. 1. They are sent on receipt of 15 cents each, except Nos. 2 and 8, for which 20 cents are required. They may be had either mounted in a manilla cover, or unmounted.

The following maps are now being printed:

- No. 9. Big Cedar Lake.
- No. 10. Lake Monona.

Map No. 11, Lakes Waubesa and Kegonsa, is in the hands of the draughtsman.

All correspondence relating to the Survey should be addressed to

E. A. BIRGE, *Director*,  
Madison, Wis.