Annual report of the Wisconsin State Horticultural Society for the year 1900. Annual meeting at Madison, February 5, 6, 7 and 8. Semi-annual meeting at Wausau, June 20 and 21. Vol. XXX 1900

Wisconsin State Horticultural Society
Madison, Wisconsin: Democrat Printing Company, State Printer, 1900

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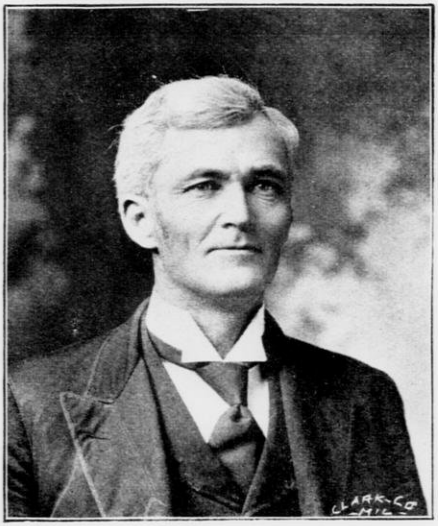
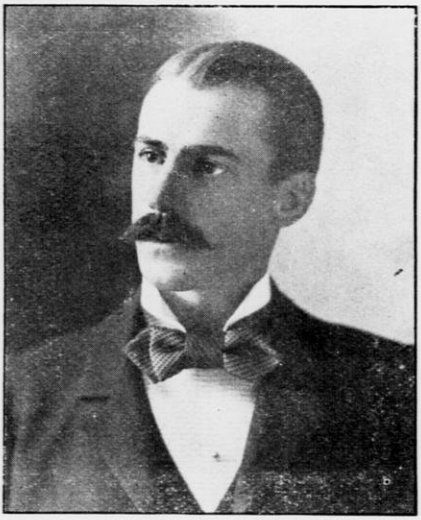


FRANKLIN JOHNSON, President,
Baraboo, Wis.

T. E. LOOPE, Vice President,
Eureka, Wis.



J. L. HERBST, Secretary
Sparta, Wis.

R. J. COE, Treasurer,
Ft. Atkinson, Wis.

ANNUAL REPORT

OF THE

Wisconsin State Horticultural Society

For the Year 1900.

Annual Meeting at Madison, February 5, 6, 7 and 8.
Semi-Annual Meeting at Wausau, June 20 and 21.

VOLUME XXX.

J. L. HERBST, Secretary,

SPARTA, WIS.

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

LETTER OF TRANSMITTAL.

To the Hon. Edward Scofield,
Governor of Wisconsin.

Dear Sir: I have the honor of presenting to you, as is required by law, the thirtieth annual report of the transactions of the State Horticultural Society, embracing the papers read and the discussions which followed at our yearly meetings, one of which was held in the city of Madison in February, 1900, and the other in the city of Wausau in June of the same year.

We have published the reports of the several local societies in the state which show the usual interest in horticulture. We also show the amount of money received from the state and the manner the same has been disbursed during the year.

Our trial orchard at Wausau is in the best of condition and bids fair to give great results in the future as it already is.

All of which is respectfully submitted.

J. L. Herbst,
Secretary.

Sparta, Wis., July, 1900.

TABLE OF CONTENTS.

ACT OF RE-ORGANIZATION

AND LAWS RELATING TO THE

WISCONSIN STATE HORTICULTURAL SOCIETY.

CHAPTER 151, LAWS OF 1879, AS AMENDED BY CHAPTER 14, LAWS OF 1887.

SECTION 1. The executive committee of the Wisconsin State Horticultural Society shall hereafter consist of the president, secretary and treasurer of said society, and of one member from each congressional district of the state, said members from the congressional districts to be chosen annually by the county and local horticultural societies in their respective districts.

SECTION 2. The present officers and executive committee of said society shall hold their respective offices until the Tuesday next succeeding the first Monday in February, and until their successors are appointed.

SECTION 3. It shall be the duty of said society to aid in the formation and maintenance of county and local horticultural societies, to promote the horticultural interests of the state by the holding of meetings for discussion; by the collection and dissemination of valuable information in regard to the cultivation of fruits, flowers and trees adapted to our soil and climate, and in every proper way to advance the fruit and tree growing interests of the state.

SECTION 4. The annual meeting of the society for the election of its officers, the transaction of general business, and the consideration of questions pertaining to horticulture, shall be held at such time and place as may be determined at the last preceding annual meeting. In case of the failure of such meeting to so determine, the executive board may call such meeting by giving at least thirty days' notice to each member of the society.

SECTION 5. All vacancies in the offices of said society may be filled by the executive committee; and should there be a failure to elect a

member of the executive committee in any district, the vacancy may be filled by a two-thirds vote of the members of the society present at any regular appointed meeting.

SECTION 6. It shall be the duty of the secretary of said society to make an annual report to the governor of the state of the transactions of the society, including an itemized account of all moneys expended during the year, in addition to such matters as are now specified in the law relating to the same.

CHAPTER 526, LAWS OF 1889.

SECTION 5. And further, there shall be printed annually upon the approval and order of the commissioners of public printing, ten thousand copies of the transactions of the Wisconsin State Agricultural Society, the same to embrace the reports of the county and other agricultural societies, and such matters pertaining to the agricultural industries of the state as shall be deemed important, provided the whole number of printed pages shall not exceed four hundred. Seven thousand copies of the transactions of the Wisconsin State Horticultural Society, the same to embrace such abstracts of reports of county and other horticultural societies, and such matters pertaining to the horticultural interests of the state as shall be deemed important, provided that the whole number of printed pages shall not exceed two hundred. Eight thousand copies of the transactions of the State Dairymen's Association, the same to embrace such other matters pertaining to the dairy interests of the state as shall be deemed essential, provided that the whole number of printed pages shall not exceed two hundred. Twelve thousand copies of the report of the Agricultural Experiment Station of the State University, provided that the whole number of printed pages shall not exceed two hundred and fifty. Two thousand copies of each of said reports to be bound separately in cloth, all others singly in paper.

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Horticultural Society, ten copies to each county agricultural society, and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of each of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university; to the governor, lieutenant-governor, secretary of state, state treasurer, attorney general, state superintendent of public

instruction, railroad commissioner and insurance commissioner, twenty-five copies each; to the state superintendent of agricultural institutes, fifty copies; to the superintendent of public property, commissioners of labor statistics, adjutant-general, quartermaster general, state board of health, each ten copies; to each public library in the state, two copies; to each state normal school, two copies; to each of the state charitable and penal institutions, one copy; and the remaining copies to the respective societies for distribution by their secretaries.

SECTION 7. In no case shall the number of printed pages in any report provided for in the act exceed the maximum number specified, except upon written request of the officers submitting the same, and then only upon previous written approval of a majority of the commissioners of public printing, such application and approval to be filed with the secretary of state.

CHAPTER 417, LAWS OF 1889.

SECTION 1. The governor is hereby authorized to set apart by proclamation one day in each year to be observed as a tree planting or arbor day, requesting all public schools and colleges to observe the same by suitable exercises, having for their object the imparting of knowledge of horticulture, in the department known as arboriculture, and the adornment of school and public grounds.

SECTION 2. This act shall take effect and be in force from and after its passage and publication.

Approved April 16, 1889.

This constitution, with the accompanying by-laws, may be amended at any regular meeting by a two-thirds vote of the members present.

Resolved by the Senate, the Assembly concurring, That the governor be and he hereby is authorized to have full control of all office rooms in the capitol, and to assign to each office or department such room or rooms as in his judgment may be required for the transaction of the business of the respective department, and for the proper care and preservation of the records and property.

All laws interfering with this resolution are hereby repealed.

This resolution shall take effect and be in force from and after its passage and publication.

In accordance with the above the governor has set apart Room 207 for the use of the Horticultural Society.

CHAPTER 148, LAWS OF 1895.

An Act to appropriate a sum of money to the Wisconsin State Horticultural Society.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. There is hereby appropriated the sum of fifteen hundred dollars out of the general fund annually, to the Wisconsin State Horticultural Society, and five hundred dollars to establish an additional experiment station.

SECTION 2. Chap. 117, of the laws of 1893, is hereby repealed.

SECTION 3. This act shall take effect and be in force from and after its passage and publication.

Approved April 8, 1895.

CHAPTER 339.

SECTION 3. There shall be printed seven thousand copies of transactions of Horticultural society, four thousand of which shall be bound in cloth, provided, the whole number of pages shall not exceed two hundred and fifty.

CHAPTER 239, LAWS OF 1897.

SECTION 1. Chapter 148, of the laws of 1895, is hereby amended so as to read as follows: There is hereby appropriated the sum of fifteen hundred dollars out of the general fund annually, to the Wisconsin State Horticultural Society, and two hundred and fifty dollars annually for the maintenance of experiment stations.

SECTION 2. This act shall take effect and be in force from and after its passage and publication.

Approved April 14, 1897.

BY-LAWS.

I. The president shall preside at meetings, and, with the advice of the recording secretary, call all meetings of the society, and have general supervision of the affairs of the society, and shall deliver an annual address upon some subject connected with horticulture.

II. The vice-president shall act in the absence or disability of the president, and perform the duties of the chief officer.

III. The secretary shall attend to all the correspondence, shall record the proceedings of the society, preserve all papers belonging to the same, and superintend the publication of its reports. He shall also present a detailed report of the affairs of the society at its annual meeting. He shall also endeavor to secure reports from the various committees, and from local societies of the condition and progress of horticulture in the various districts of the state and report the same to the society. It shall be the duty of the secretary to make an annual report to the governor of the state of the transactions of the society, according to the provisions of the statutes for state reports.

IV. The treasurer shall keep an account of all moneys belonging to the society and disburse the same on the written order of the president countersigned by the secretary, and shall make an annual report of the receipts and disbursements, and furnish the secretary with a copy of the same on or before the first day of the annual meeting. The treasurer elect shall, before entering upon the discharge of the duties of his office, give good and sufficient bonds for the faithful performance of his duties subject to the approval of the executive committee.

V. The executive board may, subject to the approval of the society, manage all its affairs and fill vacancies in the board of officers; three of their number, as designated by the president, shall constitute a finance committee.

VI. It shall be the duty of the finance committee to settle with the treasurer and to examine and report upon all the bills or claims against the society which may have been presented and referred to them.

VII. The standing committees of this society shall be as follows: 1st, Committee on finance, consisting of three members; 2d, Committee on nomenclature and new fruits, consisting of three members; 3rd, Committee on observation, as now provided. Said committee to be appointed annually by the executive committee of the society.

MEMBERS OF THE SOCIETY.

LIFE.

Geo. J. Kellogg ..... Janesville, Wis.
F. W. Loudon ..... Janesville, Wis.
Marcus S. Kellogg ..... Janesville, Wis.
Mrs. Ida E. Tillson ..... West Salem, Wis.
George Raymer ..... Madison, Wis.
Prof. E. S. Goff ..... Madison, Wis.
A. D. Barnes ..... Waupaca, Wis.
Charles A. Dolton ..... Dolton, Ill.
W. L. Ames ..... Oregon, Wis.
Henry Floyd ..... Eureka, Wis.
J. M. Underwood ..... Lake City, Minn.
F. H. Chappel ..... Oregon, Wis.
N. E. France ..... Platteville, Wis.
S. S. Chandler, Jr. ..... Waupaca, Wis.
Fred A. Harden ..... Weyauwega, Wis.
D. C. Converse ..... Fort Atkinson, Wis.
A. L. Kreutzer ..... Wausau, Wis.
T. E. Loope ..... Eureka, Wis.
John Senbert ..... Cologne, Minn.
A. N. Seymour ..... Mazomanie, Wis.
Andrew Simonson ..... Racine, Wis.

ANNUAL HONORARY MEMBERS.

F. Yahnke ..... Winona, Minn.
A. E. Bents ..... Cresco, Iowa.
H. L. Thurston ..... Chicago, Ill.
Miss Emma Jacobson ..... Chicago, Ill.
S. M. Owens ..... Minneapolis, Minn.

HONORARY LIFE MEMBERS.

O. S. Willey, ex-Secretary ..... Madison, Wis.
F. W. Case, ex-Secretary ..... Chicago, Ill.
Prof. Wm. Trelease, ex-Secretary ..... St. Louis, Mo.
J. S. Stickney, ex-President ..... Wauwatosa, Wis.
A. G. Tuttle, ex-President ..... Baraboo, Wis.
B. F. Adams ..... Madison, Wis.
F. K. Phœnix ..... Delavan, Wis.
Peter M. Gideon ..... Excelsior, Minn.
J. S. Harris ..... La Crescent, Minn.
E. H. S. Dartt ..... Owatonna, Minn.
C. G. Patten ..... Charles City, Iowa.
M. E. Hinckley ..... Marcus, Iowa.
Prof. L. H. Bailey ..... Ithaca, N. Y.

ANNUAL MEMBERS.

Abbott, C. A. ..... Appleton, Wis.

Bernet, E. J. ..... La Crosse, Wis.
Bright, W. H. ..... Fort Atkinson, Wis.
Buck, J. P. ..... Appleton, Wis.
Bingham, D. E. ..... Sturgeon Bay, Wis.

Carroll, R. C. ..... St. Anthony Park, Minn.
Coe, R. J. ..... Fort Atkinson, Wis.
Campbell, Vie H. ..... Evansville, Wis.
Cluck, W. A. ..... McConnell, Ill.
Cooper, Henry ..... North Greenville, Wis.
Cook, F. L. ..... Spearfish, South Dakota.
Carpenter, G. F. ..... Fond du Lac, Wis.
Christenson, Herman ..... Oshkosh, Wis.
Carrier, W. W. ..... Wausau, Wis.

Darrow, R. T. ..... Omro, Wis.
Drake, W. H. ..... Lake Mills, Wis.

Edwards, F. C. ..... Fort Atkinson, Wis.
Edwards, A. J. ..... Fort Atkinson, Wis.

Finkle, Mrs. John ..... Appleton, Wis.
Finkle, G. L. ..... Appleton, Wis.
Faucett, Adam ..... Wausau, Wis.

Hirschinger, Charles ..... Baraboo, Wis.
Hill, George C. ..... Rosendale, Wis.
Hill, Charles L. ..... Rosendale, Wis.
Huffman, Jacob ..... Monroe, Wis.
Hoxie, B. S. ..... Evansville, Wis.
Hatch, C. A. ..... Richland Center, Wis.
Hatch, A. L. ..... Sturgeon Bay, Wis.
Herbst, J. L. ..... Sparta, Wis.
Howie, John ..... Waunakee, Wis.
Houser, Theodore ..... Onalaska, Wis.
Hanchett, Will ..... Sparta, Wis.
Huckbody, Charles, Sr. ..... Wausau, Wis.

Innis, W. F. ..... Ripon, Wis.
Ihrig, J. J. ..... Oshkosh, Wis.

Johnson, F. C. ..... Kishwaukee, Ill.
Jewett, Z. K. ..... Sparta, Wis.
Johnson, Franklin ..... Baraboo, Wis.
Jeffrey, George J. ..... Milwaukee, Wis.
Jensen, T. A. ..... Hillside, Wis.
Jones, G. D. ..... Wausau, Wis.

Kreutzer, A. L. ..... Wausau, Wis.
Kellogg, L. G. ..... Ripon, Wis.
Kelley, A. N. ..... Mineral Point, Wis.

Laiten, T. S. ..... Omro, Wis.
Lake, Henry, Sons ..... Black River Falls, Wis.
Lamb, William ..... Madison, Wis.
La Fay, Will ..... Stoughton, Wis.

Meixner, John ..... North Bristol, Wis.
Meun, J. J. ..... Norwalk, Wis.
Marshall, S. H. ..... Madison, Wis.
Muller, Miss E. T. ..... Calhoun, Wis.
Merrill, S. H. ..... Appleton, Wis.
Montgomery, James ..... Wausau, Wis.
McGregor, F. L. ..... Appleton, Wis.
McKerrow, George ..... Sussex, Wis.

Noyes, H. J. ..... Muscoda, Wis.

Osborne, W. L. ..... La Crosse, Wis.
Ovenden, F. O. ..... Madison, Wis.

Philips, A. J. ..... West Salem, Wis.
Porter, A. H. ..... Lake Mills, Wis.
Philipson, C. ..... Oshkosh, Wis.

Rulbrock, F. ..... Milwaukee, Wis.
Ramsdell, Charles H. ..... Menomonie, Wis.
Riley, A. S. ..... Pardeeville, Wis.

Stark, Frank ..... Randolph, Wis.
Spry, John ..... Fort Atkinson, Wis.
Smith, Irving C. ..... Green Bay, Wis.
Smith, D. H, ... Tiffany, Wis.
Stein, J. G. ..... Baraboo, Wis.
Simmons, Charles ..... Stockton, Ill.
Smith, George B. ..... Green Bay, Wis.
Sperbeck, M. V. ..... Oshkosh, Wis.
Stone, F. P. ..... Wausau, Wis.
Secor, O. G. ..... Waupaca, Wis.

Toole, William ..... Baraboo, Wis.
Tarrant, Henry ..... Janesville, Wis.
Tuttle, A. C. ..... Baraboo, Wis.
True, John M. ..... Baraboo, Wis.
Ten Eyck, A. A. ..... Brodhead, Wis.
Tichenor, W. M. ..... Waupun, Wis.
Trelevan, Joseph ..... Omro, Wis.

Ulrich, F. ..... Dorchester, Wis.

Van Allen, J. W. ..... Barnum, Wis.

Williams, Daniel ..... Summit Center, Wis.
Wicheron, J. F. ..... Barron, Wis.

BUSINESS CARDS OF MEMBERS, 1900.

Barnes, A. D., Waupaca, Arctic nursery and fruit farm.

Chappell, F. H., Oregon, grower and dealer in nursery stock.
Coe & Converse, Fort Atkinson, nursery stock and small fruits.
Edwards, F. C., Fort Atkinson, small fruits and nursery stock.
Edwards, A. J., Fort Atkinson, nursery and small fruits.

France, N. E., Platteville, State Bee Inspector.

Hardin, F. A., Weyauwega, small fruit grower and nursery.
Hatch, A. L., Sturgeon Bay, nursery and small fruits.
Hill, Geo. C., Rosendale, small fruits and Guernsey cattle.
Hirschinger, Chas., Baraboo, orchardist and nurseryman.
Houser, John F., Onalaska, small fruits and vegetables.
Hanchett, Will., Sparta, small fruit grower.
Herbst, J. L., Sparta, small fruit grower and poultry.

Jewett, Z. K., Sparta, nursery.

Kellogg, L. G., Ripon, small fruit a specialty.
Kellogg, George J., & Sons, Janesville, Belle Cottage Fruit Farm.
Kreutzer, A. L., fruit and stock farm.

Loope, T. E., Eureka, orchard and small fruits.

McKerrow, George, Sussex, importer and breeder of mutton sheep.

Philips, A. J., West Salem, Mount Zion Nursery & Fruit Farm.
Seymour, A. N., Mazomanie, small fruits.
Smith, I. C., Green Bay, vegetables and small fruits.
Spry, John, Fort Atkinson, grower of small fruits and plants.
Smith, G. C., Green Bay, gardener and seed potatoes.

Tuttle, A. G., Baraboo, small fruits.
Toole, William, Baraboo, pansy specialist.

Underwood, J. M., Lake City, Minn., Jewell nursery.

Partt, E. H. S., Owatonna, Minn., State Tree Station.

OFFICERS FOR 1900.

President, Franklin Johnson ..... Baraboo
Vice-President, T. E. Loope ..... Eureka
Secretary, J. L. Herbst ..... Sparta
Treasurer, R. J. Coe ..... Fort Atkinson
Corresponding Secretary, S. H. Marshall ..... Madison

EXECUTIVE COMMITTEE.

The President, Secretary, and Treasurer, ex-officio. Additional members, Prof. E. S. Goff, Madison; Henry Tarrant, Janesville; Wm. Toole, Baraboo; J. H. Cooper, North Greenfield; J. S. Stickney, Wauwatosa; L. F. Laiten, Omro; A. J. Philips, West Salem; Irving C. Smith, Green Bay; A. L. Kreutzer, Wausau; J. F. Wichern, Barron.

COMMITTEE ON NOMENCLATURE.

A. L. Hatch ..... Sturgeon Bay.
A. J. Edwards ..... Fort Atkinson.

COMMITTEE ON LEGISLATION.

Charles Hirschinger ..... Baraboo
Prof. E. S. Goff ..... Madison
A. L. Kreutzer ..... Wausau

COMMITTEE ON FINANCE.

Irving C. Smith ..... Green Bay
J. W. Cooper ..... North Greenfield
L. F. Laiten ..... Omro

COMMITTEE ON REVISION OF FRUIT LIST.

George J. Kellogg ..... Janesville
A. L. Hatch ..... Sturgeon Bay
J. L. Herbst ..... Sparta

COMMITTEE ON RESOLUTIONS.

Mrs. Vie H. Campbell ..... Evansville
D. C. Converse ..... Fort Atkinson
L. G. Kellogg ..... Ripon

COMMITTEE ON TRIAL ORCHARDS.

Ex-Officio, President and Secretary; Prof. E. S. Goff, Madison; Henry Tarrant, Janesville; L. G. Kellogg, Ripon.

SUPERINTENDENTS OF TRIAL ORCHARD.

L. G. Kellogg ..... Ripon
J. L. Herbst ..... Sparta

COMMITTEE ON OBSERVATIONS.

Frank Stark ..... Randolph
J. F. Case ..... Eau Claire
W. H. Hanchett ..... Sparta
J. J. Meun ..... Norwalk
A. C. Tuttle ..... Baraboo
A. J. Philips ..... West Salem
L. F. Laiten ..... Omro
F. A. Harden ..... Weyauwega
A. J. Edwards ..... Fort Atkinson
Daniel Williams ..... Summit Center
D. E. Bingham ..... Sturgeon Bay
C. A. Abbott ..... Appleton
W. L. Osborne ..... La Crosse
E. R. Holliday ..... Ellsworth

FRUIT LIST.

A LIST OF FRUITS GROWN BY MEMBERS OF THE WISCONSIN STATE HORTICULTURAL SOCIETY,

As catalogued by the American Pomological Society. Those marked with the asterisk (*) are recommended for Wisconsin.

APPLES. (Pyrus.)

SECTION I.—CRABS.

[KEY.—Size, scale 1 to 10; 1, very small; 10, very large. Form: c, conical; i, irregular; o, oblate; ob, oblong; ov, ovate; r, round. Color: d, dark; g, green; r, red: ru, russet; s, striped; w, white; y, yellow. Flavor: a, acid; m, mild; s, sweet. Quality, scale 1 to 10: 1, very poor: 10, best. Season: e, early; m, medium; l, late; v, very. Use: c, cider; d, dessert; k, kitchen; m, market. Abbreviations of names of places of origin: Am., America; Eng., England; Eur., Europe; Fr., France; Ger., Germany; Holl., Holland; Ont., Ontario; Rus., Russia; Scot., Scotland.]

NAME.	DESCRIPTION.						
	Size.	Form	Color.	Quality.	Season.	Use.	Origin.
Brier	7	r	r	5	e m	k m	Wis.
*Martha	5	o	y r	5-6	e	k m	Minn.
Minnesota	10	ob	y r	5	e	k m	Minn.
*Transcendent	7-8	r	y r	5-6	e	k m	Am.
*Whitney	8	r c	r	8-9	e m	d k m	Ill.
*Hyslop	6	r	r	3	e m	k m	Am.
*Gibb	6	o	y r	9	e	k	Wis.
*Virginia	5	r ob	y r	5	.....	.....	

SECTION II.—APPLES.

*Avista	9	r c	y g	5-7	l	d k m	Wis.
*Arabka	9	ob c	y g	5-7	e	d k m	Rus.
Alexander	9-10	o c	y r s	5	m	k m	Rus.
Anisim	4-5	r c	y r	7	m	d m	Rus.
*Antonooka	6	ov c	y	7	m	k m	Rus.
Arctic	7-8	r c	y r	8	l	k m	N. Y.
Babbitt	5-6	r	r	5-6	l	d k m	Mo.
Bailey	8-9	r	r	7-8	l	d m	N. Y.
Ben Davis	6-9	r ov	y r s	4-5	l	m	Ky.
*Charlamoff	5-6	r c	g r s	6	e	d m	Rus.
Clayton	6-8	o c	y r s	6-7	v l	k m	Ind.
Early Harvest	5-6	r o	y w	9	v e	d k	Am.
Early Joe	3-4	o c	y r s	8-9	e	d	N. Y.
*Eureka	6-8	r ob	g y r	6-7	l	d k m	Wis.
*Fall Orange	8-9	r	y r	3-4	m	k	Mass.
Fall Queen	6-8	o c	g y r	7-8	l	k m	Va.
*Fall Spitzenburg	6-8	r c	g y	7-8	l	d k m	Va.
Fall Wine	5-6	r o	y r	8-9	m	d	Am.
*Fameuse	5-6	r o	y r s	8-9	m	d m	Fr.

[SECTION II.—APPLES.—Continued.

NAME.	DESCRIPTION.						
	Size.	Form.	Color.	Quality.	Season.	Use.	Origin.
Garfield	7-8	o c	g r s	8-9	l	d k m	Ga.
*Golden Russett	4-6	r o	y ru	5-6	v l	d m	Eng.
Gravenstein	8-9	o i	y r	8-9	e m	d k m	Ger.
Grimes Golden	5-6	r o c	y	9-10	l	d	Va
Hass	5-7	o c	g y r	4 6	e m	k m	Mo.
*Hibernal	5-7	ob c	r s	8-5	m	k m	Rus.
Jonathan	5-6	r c	y r	8-9	l	d k m	N. Y.
Keswick	6-7	c i	g y r	5-6	e m	k	Eng.
Kinnard	5-6	o c i	y r	5-6	l	d k	Tenn
*Longfield	5-6	r c	y	4-5	e	k	Rus.
Louise	.....	r o	w e	5-6	l	d	Ont.
Lowe	8-9	ob	y	6-7	e	k m	Am.
Lowell	8-9	ob	y	7-8	e	k m	Am.
*Lubsk Queen	6-7	r	r	6-7	l	d m	Rus.
*McMahan	8-9	r o	y w	4-5	m	d m	Wis.
Maiden Blush	5-6	o	y r	5-6	e	k m	N. J.
Malinda	6-7	r c	y r	5-6	v l	d k m	Vt.
Mann	6-7	r o	y g	4-5	v l	m k	N. Y.
Melon	6-7	r o c	y r s	7-8	l	d m	N. Y.
Milwaukee	7-8	r o	y r s	5-6	l	k m	Wis.
Minkler	6-7	r c	g y r	6-8	l	m	Pa.
*Newell	7-8	r ob	y r s	5-6	l	k m	Wis.
Northern Spy	8-9	r o c	y r s	8-9	m l	d k m	N. Y.
*N. W. Greening	8-9	r c	g y	6	l	k m	Wis.
Okabena	5	r ob	r s	4-6	m e	k m	Minn.
*Oldenburg	5-6	o	y r s	4-5	e	k m	Rus.
*Pattens Greenings	8 9	r	y	5-6	m l	k m	Iowa.
Peerless	5	o r	s	5-6	l	m	Minn.
Perry Russett	5-6	r c	y ru	5-6	m l	d k	N. Y.
Peter	7-8	r	g y	6-7	m	k m	Minn.
*Pewaukee	8-9	r o	y r s	4-5	l	k m	Wis.
*Plumb Cider	5-6	r c	y r s	5-6	m	d m	Wis.
Pound Sweet	8-9	r	g w	5-6	m l	k	Conn
Ram dell	7-8	ob c	r	6-7	m	k m	Am.
*Raspberry	3-4	ob i	r	6-7	m e	k m	Rus.
Red Astrachan	7-8	r c	r g y	5-6	e	k m	Rus.
Repka	3-4	r c	r s	5	l m	k	Rus.
Roman Stem	5-6	r	w y r	8-9	l	d k	N. J.
Salome	5-6	r ob	y r	7-8	v l	d k m	Ill.
*Scotts Winter	5	r c	r s	5-7	l	k m	Vt.
Sops of Wine	5-6	r	y r	5-6	e	d	Eur.
Switzer	5-6	r	w r	6-7	e	k	Rus.
*Tetofski	7-8	o c i	y r s	5-6	m	k m	Rus.
Talman Sweet	5-6	r o	y	6-7	l	k m	R. I.
Twenty Ounce	9-10	r	y r s	6-7	m l	k m	Conn.
Utter	7-8	r	y r	6-7	m	d m	Am.
*Walbridge	5-6	o c	y r s	5-6	l	m	Ill.
*Wealthy	6-7	r o	y r s	6-7	m	d k m	Minn.
*Willow Twig	6-6	r o c	y r	5-6	v l	m	Va.
*Windsor	5-6	r	y r	6	m l	m	Wis.
Winesap	5-6	r ob	y r	7-8	v l	d k m	N. J.
*Wolf River	9-10	r o	w r s	5-6	m	k m	Wis.
*Wis. Russett	5-7	r ob	y r	5	l	k m	Wis.
Yellow Transparent	6-7	r c	w y	5-6	e	k m	Rus.

PLUMS. (Prunus.)

[KEY.—Size, scale 1 to 10; 1, very small; 10, very large. Form: c, compressed; f, flattened; o, oval; ob, obovate; obl, oblong; r, round. Color: b, black; br, brown; g, green; p, purple; r, red; v, violet; w, white; y, yellow. Quality, scale 1 to 10; 1, very poor; 10, best. Season: e, early; m, medium; l, late; v, very. Use, d, dessert; k, kitchen; m, market; c, curing. Abbreviations of names of places of origin: Am., America; Belg., Belgium; Eng., England; Eur., Europe; Fr., France; Ger., Germany; Jap., Japan; Ont., Ontario, Rus., Russia.]

NAME.	DESCRIPTION.					
	Size.	Form.	Color.	Quality.	Adhesion.	Season.
*De Soto	m	r o	y r	g	.....	m
*Cheney	l	r	r y	g	c	m e
*Wolf	m	r o	r	f	.....	m
*Rockford	m	r o	y r	g	.....	m
*Miner	m	l r	p r	g	c	l
*Hawkeye	m	r	r	f	.....	w l
*Wyant	s	r o	y r	f	.....	m
*Abundance	m	r o	br r	f	.....	e m
*Green Gage	s	r	g y r	b	f	m
*Lombard	m	r o v d	r p	g	c	l
*Hudson River	l	o	r p	g	.....	m
*Lur.de Egg	m	r f	v y	f	.....	m
*Moore's Arctic	m	r o	b	m	.....	c
Rolling-tone	m	r o	r	f	.....	m
Gaylord	l	r o	r y	f	.....	l
Burbank	m	r	p y	f	.....	m l
Stoddard	l	r	r	f	.....	m e
Aitkin	l	o	r	f	.....	m e
Wickson	l	r w	br	g	.....	m
Red June	m	ov	r	f	.....	v e
Milton	m	r o	r	f	.....	l
German Prune	l	o	p	f	.....	m
Green Gage	m	ob	g	g	.....	m
Mariana	m	r	r	p	.....	l
Wild Goose	l	r	r p	f	.....	m l
Chas. Downing	m	r o	r	f	.....	w e
Weaver	m	o c	r	f	.....	m
Yellow Egg	l	o	y	p	.....	e
Dennison	s	o	p	p	.....	l
Quackenbush	l	ob f r	p	f	.....	m
Black Hawk	l	r o	r	g	.....	m l
Maldavka yellow	l	o	y	g	.....	e
Quaker	l	r o	r y	g	.....	e
Ocheda	m	r o	r y	g	.....	m l

CHERRIES. (Cerasus.)

[KEY.—Size, scale 1 to 10; 1, very small; 10, very large. Form: c, compressed; h, heart shaped; o, oblate, r, round. Color: a, amber; b, black; p, purple; r, red; y, yellow. Quality, scale 1 to 10: 1, very poor; 10, best. Season: e, early; m, medium; l, late: v, very. Use: d, dessert: k, kitchen; m, market. Abbreviations of names of places of origin: Am., America; Eng., England, Eur., Europe; Fr., France: Ger., Germany; Ont., Ontario; Rus., Russia.]

NAME.	DESCRIPTION.					
	Size.	Form.	Color.	Quality.	Season.	Origin.
*Bessarabian	5-6	r	r	5	l	Rus.
Dyehouse	5-6	r o	r	5-6	v e	Ky.
*Late Kentish	5-6	r	r	4-5	l m	Am.
Lutovka	7-8	r	r	4-5	e m	Rus.
May Duke	6-7	r h	r	8-9	e	Fr.
Montmorency	7-8	r	r	7-8	e m	Fr.
*Morello	6-7	r h	r b	5-6	l	Eng.
Ostheim	6-7	e	r b	6-7	m	Rus
*Richmond	5-6	r	r	5-6	e	Eur.
Windsor	8	h	y r	7-8	l	Ont.
Wood	7-8	r h	y r	7-8	e m	Ohio.

STRAWBERRIES. (Fragaria.)

[KEY.—Sex: s, stanimate; p, pistillate. Size, scale 1 to 10: 1, very small; 10, very large. Form: c, conical; co., compressed; l, long; o. oblate; ob, oblong; ov, ovate; r, round; i, irregular. Color: c, crimson; d. dark; l, light; r, red; s, scarlet. Quality, scale 1 to 10: 1, very poor; 10, best. Season: e, early; m, medium; l, late. Use: d, dessert; m, market. Abbreviations of names of places of origin: Am., America; Austr., Australia; Can., Canada; Ont., Ontario.]

NAME.	DESCRIPTION.						
	Size.	Form.	Color.	Quality.	Sex.	Season.	Texture.
*B. Wood	m	r ob	p r	g	s	e	f
*Bubach	v l	ob r c	b c	v g	p	m	f
*Brunlywine	l	o c	c	g	s	l	m
Bartons E	l	r c	b r	v g	s	m	f
Bisel	m	r c	b r	g	p	m	f
Brunette	m	r	d r	g	s	m	m
Crawford	m	r ob	b r	g	s	m	f
Clyde	v l	ob r c	s	g	s	m	m
*Crescent	l	c	d s	g	p	m	f
*Capt. Jack	m	r c	b c	v g	s	m	f
*Enhance	l	r c	p r	g	s	m l	m
*Eureka	m l	.....	p r	g	p	m l	f
Glen May	l	co	b r	g	s	m	m
*Greenville	m	r c	p r	f	p	m	s
*Glendale	l	o c	d r	f	p	m l	m
*Grandy	l	r c	p r	g	s	l	f
Gov. Hoard	l	r c	b r	v g	s	m	m
*Haverland	l	ob	b c	v g	p	m	s
*Jessie	v l	ob c	b c	v g	s	m	s
Lovette	l	r c	p r	g	s	m	m
Manchester	l	c r	c	g	p	l	.....
Mary	v l	r c	b r	p	p	m	m
McKinley	l	ob c	d r	g	s	m	f
Marshall	v l	co	d r	g	s	m l	f
Michel E	m	r c	p r	v g	s	e	f
Margaret	l	c	d r	g	s	m l	f
*Parker Earle	l	c	p r	g	s	l	f
Sharpless	v l	o c	b r	v g	s	m	m
*Splendid	m	r ob	p r	f	s	m	f
Wolverton	m	c	d r	f	s	m	f
*Warfield	m	c	d r	v g	p	m	f
*Wilson	l	r c	d c	g	s	m	m
Wm. Belt	v l	c o	b r	g	s	m	m
*Van Deman	m	r c	d c	g	s	m	f
Yale	l	r c	d r	g	s	l	f
*Sandoval	m	r c	d r	f	s	m	f
*Saunders	l	c	c	f	s	e	m
*Rio	m	c	d r	g	s	m	f
*Wolverton	l	c	d c	f	s	m	m
*Sparta	m	c	d r	g	s	m	f

GRAPES. (Vitis.)

[KEY.—Size, scale 1 to 10: 1, very small; 10, very large. Form: o, oval; r, round. Color: a, amber; b, black; g, green; r, red; w, white, y, yellow. Quality, scale 1 to 10: 1, very poor; 10, best. Season; e, early; m, medium; l, late; v, very. Use: d, dessert; m, market; w, wine. Abbreviations of names of places of origin: Am., America; Ont., Ontario.]

NAME.	DESCRIPTION.					
	Size.	Form.	Color.	Quality.	Season.	Origin.
*Agawam	8-9	r o	p b	6-7	m	Mass.
*Brighton	7-8	r	r	7-8	e	N. Y.
*Concord	7-8	r	b	5-6	m	Mass.
*Delaware	2-3	r	r	10	m	N. J.
*Diamond	6-7	r	g w	7-8	m	N. Y.
Janesville	5-6	r	b	3-4	e	Wis.
Lady	7-8	r	w	6-7	e m	Ohio.
*Lindley	5-6	r o	r	5-6	m	Mass.
*Mossasoit	7-8	r	r	5-6	m	Mass.
*Moore's Early	8-9	r	b	6-7	e	Mass.
*Niagara	8-9	r	w	7-8	m l	N. Y.
*Rocklington	8-9	r	w y	6-7	e m	N. Y.
Salem	9-10	r	b	7-8	m	Mass.
*Vergennes	7-8	o	r	8-9	m	Vt.
*Wilder	9-10	r	b	7-8	m	Mass.
Woodruff	8-9	r	r	6-7	e m	Mich.
*Worden	7-8	r	b	7-8	e m	N. Y.
*Merrimac	8-9	r	b	7	m	Mass.
*Victor	5-6	r	b	7-8	v e	Kans.

RASPBERRIES. (Rubus.)

[KEY.—Size, scale 1 to 10: 1, very small; 10, very large. Form: c, conical; o, obtuse; r, roundish. Color: b, black; c, crimson; p, purple; r, red; s, scarlet; y, yellow. Quality, scale 1 to 10: 1, very poor; 10, best. Season: e, early; m, medium; l, late. Use: d, dessert; k, kitchen; m, market. Abbreviations of names of places of origin: Eng., England; Eur., Europe; Fr., France; Ont., Ontario.]

NAME.	DESCRIPTION					
	Size.	Form.	Color.	Quality.	Season.	Origin.
Brandywine	5-6	r c	r	5-6	e	Del.
*Columbian	9-10	r	p	6-7	e	N. Y.
Conrath	8-9	o v	b	8-9	e	Mich.
Cumberland	9-10	o v	b	9-10	e	Pa.
*Cuthbert	7-8	r c	r	6-7	m	N. Y.
Doolittle	5-6	r	b	5-6	e	N. Y.
Eureka	6-7	r	b	5-6	e m	Ohio.
*Gregg	7-8	r o	b	5-6	m	Ind.
Golden Queen	7-8	r c	y	6-7	m	N. J.
Hilbourn	7-8	r o	b	6-7	e	Ont.
Hainsel	5-6	r	r	5-6	e	N. J.
*Kansas	6-7	r	b	6-7	m	Kans.
*Loudon	6-7	r c	r	5-6	m	Wis.
*Marlboro	7-8	r	r	4-5	m	N. Y.
Miller	7-8	r	r	7-8	e	Del.
*Nemeha	7-8	r o	b	5-6	e	Nebr.
*Ohio	5-6	r	b	4-5	e	Ohio.
*Older	5-6	r	b	5-6	e m	Iowa.
Philadelphia	4-5	r	p	4-5	e m	Pa.
*Palmer	6-7	r	b	5-6	e	Ohio.
*Shaffer	8-9	r	p	6-7	m	N. Y.
Souhegan	3-4	r	b	5-6	m	N. H.
Turner	4-5	r c	r	7-8	m	Ill.

BLACKBERRIES AND DEWBERRIES. (Rubus.)

[KEY.—Size, scale 1 to 10: 1, very small; 10, very large. Form: c, conical; o, oblong; ov, oval; r, round. Color: b, black. Quality, scale 1 to 10: 1, very poor; 10, best. Season: e, early; m, medium; l, late; v, very. Use: d, dessert; k, kitchen; m, market. Abbreviations of names of places of origin: Am., America.]

NAME.	DESCRIPTION.					
	Size.	Form.	Color.	Quality.	Season.	Origin.
*Briton	5-6	o ov	b	5	m	Wis.
Early Harvest	4-5	r o	b	7-8	e	Ill.
Eldorado	7-9	o	b	7-8	e	Ohio.
Minnewaska	9	o v	b	6	m	N. Y.
*Snyder	6-7	o	b	7-8	m l	Ind.
*Stone	5	r o	b	7-8	l	Wis
Triumph	5-6	o ov	b	6	l	Am.
*Badger	6-7	o ov	b	6	m	Wis.

DEWBERRIES.

Lucretia	9-10	o ov	b	6	e	W. Va.
Bartell	8-9	o ov	b	7	m	

CURRANTS. (Ribes.)

[KEY.— Size, scale 1 to 10: 1, very small; 10, very large. Form: r, round. Color: b black; r, red; w, white. Quality, scale 1 to 10: 1, very poor; 10, best. Season: e, early; m, medium, l, late. Use: d, dessert; k, kitchen; m, market. Abbreviations of names of places of origin: Am., America; Eng., England; Eur., Europe; Fr., France; Ont., Ohtario.

NAME.	DESCRIPTION.					
	Size.	Form.	Color.	Quality.	Season.	Origin.
* Ibert	7–8	r	r	7–8	e	Eur.
Cherry	9–10	r	r	5–6	m	Eur.
Fay	9–10	r	r	5–6	m	N. Y.
* Holland	5–6	r	r	4–5	e m	Am.
London	5–6	r	r	4–5	m	Eng.
North Star	5–6	r	r	5–6	l	Minn.
Red Cross	9–10	r	r	9–10	m	N. Y.
*Red Dutch	6–7	r	r	8–9	m	Eur.
Ruby Castle	6–7	r	r	6–8	m	
Versaillaise	9–10	r	r	5–6	.....	Fr.
*Victoria	6–7	r	r	5–6	m	Eng.
*White Dutch	6–7	r	w	9–10	m	Eur.
*White Grape	7–8	r	w	8–9	m	Eur.
Wilder	8–9	r	r	7–8	m	N. Y.
*Lees Prolific	8–9	r	b	6–7	m	Am.
*Naples	6–7	r	b	6–7	m	Eur.

GOOSEBERRIES. (Ribes.)

[KEY.—Size 1 to 10: 1, very small; 10, very large. Form: o, oval; r, round. Color: g, green; r, red; w, white; y, yellow. Quality, scale 1 to 10: 1, very poor; 10, best. Season: e, early; m, medium. Use: d, dessert; k, kitchen; m, market. Abbreviations of names of places of origin: Am., America; Eng., England; Ont., Ontario.]

NAME.	DESCRIPTION.					
	Size.	Form.	Color.	Quality.	Season.	Origin.
Chautauqua	8-9	r o	g w	9-10	m	N. Y.
Champion	5-6	r o	g y	5	e	Am.
*Downing	5-6	r	g	5-6	m	N. Y.
Industry	9-10	r o	r	6-7	e	Eng.
*Houghton	2-3	r o	g r	7-8	m	Mass.
Pearl	5-6	r	g	9-10	m	Ont.
*Red Jacket	5-6	r o	r	8	e	Ont.
Smith	5-6	o	y g	9	e	Vt.
*Triumph	8-9	r o	g w	7-8	e	Pa.
*Columbus	8-9	r o	g y	9-10	m	Am.
*Queen	8-9	r o	y g	7-8	m	Wis.

TREES AND SHRUBS RECOMMENDED.

EVERGREENS.

For screens and windbreaks—Norway Spruce, Balsam Fir, White Pine.

For hedges and screens for shearing—Norway Spruce, American Arbor Vitae, Red Cedar.

For lawns and cemeteries—Norway Spruce for backgrounds. For groups—American Arbor Vitae, Hovey's Golden, Arbor Vitae Pyramidalis, Arbor Vitae Siberian, Arbor Vitae, Juniper Excelso, with Protection.

For small lawn decoration—Juniper Sucica, Arbor Vitae, Hovey's Golden Arbor Vitae, Arbor Vitae Pyramidalis.

DECIDUOUS TREES.

For cemeteries—Cut-leaved Birch, Wisconsin Weeping Willow, Weeping Poplar.

For lawns—All named above, and, in addition, Laurel-leaved Willow, Mountain Ash Oak-leaved, Mountain Ash American, Mountain Ash European, Maple Cut-leaved, Maple Norway, Kentucky Coffee Tree, Catalpa, Spiciosa, Elm American, Elm Scotch, Elm Weeping, European White Birch.

SHRUBS FOR CEMETERIES.

Hydrangea, Paniculata, Cornus Philadelphus, Tree Lilac, Spirea, Japonica, Spirea Van Houtii, Wahoo (American Strawberry Tree), Exchordia Grandiflora.

For lawns—All named above and, in addition, Purple Barberry, Purple Fringe, Upright Honeysuckle, Wigelia Rosea.

For screens and hedges—Upright Honeysuckle, Barberry Red Fruiting.

ROSES.

Twelve best varieties Hybrid Perpetual—Paul Neyron, Mrs. J. H. Laing, Gen. Jacqueminot, Dinsmore, Marshall P. Wilder, Coquette des

Blanches, Earl of Dufferin, Jules de Margottin, Vick's Caprice, Magna Charta, Prince Camille de Rohan, General Washington.

Moss Roses, four best varieties—Perpetual White, Salet, Paul Fontine, Henry Martin.

Climbers, five best varieties—Prairie Queen, Russel's Cottage, Seven Sisters, Gem of the Prairies, Victor Verdier.

Hybrid China—Madam Plantier, Madam Hardy.

Brier Roses—Persian Harrison.

TRANSACTIONS

OF THE

Wisconsin State Horticultural Society

ANNUAL WINTER MEETING.

Tuesday A. M., February 5th, 1900.

The President called meeting to order, and read the following:

PRESIDENT'S GREETING.

Ladies and Gentlemen: — Since our State Society has called your humble servant to this chair, the pleasant duty devolves upon me of offering, at this time, a few words of greeting.

It affords me great pleasure to witness the assembling of these representatives of Wisconsin horticulture. In behalf of the Wisconsin State Horticultural Society and in my own behalf, I extend to each one of you most cordial salutations.

We are here to consult together for the advancement of one of the important industrial pursuits of our land, important not only as regards dollars and cents but important as regards that which is of greater moment, the health and happiness of our homes. As we thus confer together it is inevitable that we shall differ in opinion, but may the current of friendship and brotherly love course through all our transactions.

Again I bid you welcome, and I confidently trust that our present meeting will result not only in good to ourselves, but will redound to the honor of our state and the welfare of its people.

President—We will take up our programme as it is printed. First, let me suggest, that there are committees to be appointed, and I will appoint as committee on reception of delegates, Mr. L. G. Kellogg. I think perhaps one can attend to that as well as more.

There are two other committees that I will announce at this time. The executive committee that met last night authorized the chair to appoint a commitee to prepare a report on the relation of county and local societies to the state societies. They wish the committee to prepare some plan to be presented to the executive committee before the close of our annual meeting. The object in referring this to a committee is not to take it out of the hands of the meeting, but it is to give each one of you an opportunity to have your say. Now, please notice who the members of this committee are, and if you have any idea along this line, bring it, please, to the attention of that committee. The members of that committee are: R. J. Coe, William Toole and Irving Smith.

The executive committee authorized the chair to appoint another committee. Our Society had entrusted to J. C. Plumb the responsibility of preparing a history of Wisconsin Horticulture. His death suspended that for a time at least and the executive committee authorized the chair to appoint a committee to investigate the present status of that history and to make reports as to what should be done in the future, they to report to the executive committtee before the close of our annual meeting. I will now announce the committee as follows: Mr. B. S. Hoxie, J. L. Herbst and F. C. Edwards.

We will take our programme now. First, we have a special subject, Nursery Session, five six-minute papers. We will listen to these papers and then will take up the discussion of the same.

BEST PLAN TO CONDUCT A CORRECT NURSERY BUSINESS.

F. C. Edwards, Fort Atkinson, Wis.

In the first place I consider it very hazardous for any one to engage in the nursery business who has not had experience working for a period of time in some good nursery. Instructions at a Horticultural school and reading the best literature on this subject ought to be beneficial. What I have to say is practice, and not theory; as I have been in contact with nearly all phases of this question, and sometimes experience has been a severe teacher, but a good one. The man who starts out without a plan is apt to drift against the rocks and cause disappointment and failure, and his cargo become a partial or a total loss. A plan of work must be made and maintained. "Honesty is the best policy." That the oldest and best nurseries in the United States have practiced this adage is my belief.

The location of a nursery should be near a city of one or more railroads. The soils should be clay and sandy uplands and lowland, as nature speaks very plainly upon this matter in growing nicely rooted, healthy, upright nursery stock naturally adapted to each of these soils and locations.

The best plan is to raise all the goods all you can to meet the demands of your customer, as it is policy, economy and principle. But it is impossible to produce all you sell, if you do a large business. There is no extensive nursery in the United States that does. We take it for granted that there are just as honest men as we are; and if they propagate and cultivate in the same way and with as much care as we do, why not use their surplus goods when we are short, and they reciprocate? A favor to all concerned.

But do not exchange with questionable nurserymen, as you must not impose on your customer in the smallest particular. In the planting and cultivation of your nursery stock, stake, mark and book every block, and use only the most trustworthy men in this work.

Have your head man superintend and look after all work in the nursery and his word law in your absence. This man must be capable in every way, or you are sure to run against breakers and suffer severe losses. But personally superintend your work in detail, as far as possible.

Occasionally we see men assume the name nurserymen upon the plan, "get orders honestly if you can, but get orders." They guarantee everything you ask, and more. They make people see the golden egg, but they say they like to work new territory quite often, and as a consequence they are unable to call upon their customers and make good these promises. They buy all their goods of responsible and irresponsible men and label them to meet the wants of their customers. They die, but not the death of the righteous. The people make it too hot or too cold for them. Their name is legion and their method is flattery and deception, and the people are anxious to have honest men take their places.

We must remember there are great chances in our business for wolves to come around in sheep's clothing. The only way to destroy these is to use honest methods and meet them on the same battle field.

A good grower of nursery stock is not necessarily a good salesman. It is one thing to produce good goods and another thing to sell them. There was a time when the merchant went to the city to purchase his stock. But now the city, or its representatives, comes to the merchant in all lines of trade with samples of his goods. If he did not, some other city would get the trade; and so in the nursery business. Nearly all small concerns are dropping out of the race, because they are not adapted, or cannot afford to go themselves or hire a good representative to sell their goods. Catalogue trade was at one time worthy of mention, but now, with a few exceptions, catalogues are consigned to the waste basket. What does this signify? Simply this. That if the nurserymen of Wisconsin wish to do the business of our state they must personally see its people each year with samples of their goods.

Sell the goods for a good, fair price. Be sure and sell them as good stock as there is, true to name. Tell the people the truth

and instruct them at sale. Work for their interest and by so doing you are working for yours. Replace any faulty stock that is sent them, by oversight, or otherwise. Promise to see them each year and do so as long as you are in the nursery business. If you do not succeed under this plan, the nurseryman is at fault or the salesman he employs.

If you do not use some or all of the plan mentioned, the men outside of Wisconsin will continue to furnish the bulk of the stock planted in our state, and Wisconsin nurserymen will continue to blow their trumpets in denouncing the so-called tree agent, — which is simply free advertising for him.

In conclusion, treat your customers as you would like to be treated and they will not go back on you, only in exceptional cases. If you do not amass a fortune under this plan, you will command your customer's respect and friendship and you will have a profitable and pleasant business.

SHALL THE NURSERYMAN BUY STOCK TO FILL HIS ORDERS FROM EASTERN AND SOUTHERN NURSERIES?

L. G. Kellogg, Ripon.

From the first impression it would appear that the subject of buying and selling nursery stock should not be connected with horticulture, but only a subject to be considered by Nurserymen in their conventions. But upon further reflection I believe there is no subject of more importance, to the farmers of our state than the purchase of nursery stock which is to become the foundation of a future orchard, a berry plantation or the adornment of a beautiful home.

We must admit that a vast amount of fraud has been perpetrated upon the planters of this state, not so often by the honest nurseryman (if there be any) but by the party who is correctly called a free dealer buys his stock where he can buy cheapest,

then through his wily agent catches the farmer with "model orchards" and high priced, worthless novelties.

If every farmer in our state were so educated as to go to work and buy the right kind of nursery stock for planting then indeed would horticulture take a great step in advance of what it is at the present time. We have already this means of education provided and that is, become members of our State Horticultural Society, get the experience of those who have been for the best years of life engaged in the growing of fruit, planting of ornamental and shade trees, and thus avoid the many mistakes and failures which have resulted from the planting of nursery stock which is not adapted to our soil and climate.

We will assume which I believe to be true that seventy-five per cent. of all nursery stock known as fruit trees and ornamentals sold by nurserymen through their agents, in the state of Wisconsin is imported from other states whose climatic and soil conditions are at a marked variance with those of our state which must necessarily affect the conditions of growth to such an extent as to render the tree, plant, or shrub uncongenial in the climate of Wisconsin.

We will take the apple tree when grown in the south where the soil and other conditions induce a rank spongy growth of top and root and remove this tree to Wisconsin where the winters are long and severe and the growing season correspondingly short, it may survive one, two or three years or until the nurseryman's responsibility ceases and then succumbs to the inevitable only too often to disappoint the purchaser in what he considered a model tree. Our eastern nurseries through their agents have been so persistent in selling a spindling seven foot tree with two or three prongs for roots (and often grown in Alabama), that our people are not satisfied excepting they get trees of this description at time of delivery. The question under consideration appears to resolve itself into this form: Shall we as Wisconsin nurserymen sacrifice principle and reputation in buying our stock of Southern Nurseries that we may satisfy the mistaken fallacies of our people and meet this competition of our eastern brethern? I shall say no most emphatically. Let us

meet this competition with the products of Wisconsin nurseries just as far as possible.

Then let us endeavor by a united effort through the medium of our Society, the Farmers' Institute and the agricultural press to teach our people that a Wisconsin grown 2 year apple tree or a 3 year tree 5 to 6 feet, properly grown with a well balanced top and root, is far superior for the Wisconsin planter to the 7 or 8 foot trees often delivered by our eastern neighbors.

From my limited experience and observation with the American varieties of plum and the sour cherry, as nursery stock they appear to adapt themselves to a wider extent of territory under varying climatic conditions, with less modification in growth of top and root, texture of wood, etc., than does the apple, and I feel we as nurserymen can conscientiously fill our orders with plum and cherry if properly grown not being so particular as to the locality where grown.

However my preference would be given to stock that was grown under similar conditions of environment as the same would be subjected when permanently planted.

If the statement which I have just made could be rigidly adhered to as a rule (and not the exception) in the purchase and sale of nursery stock it would help to solve the perplexing problem of unadapted stock and tend to restore a portion of lost confidence of those who contemplate planting.

SUGGESTIONS TO WISCONSIN NURSERYMEN.

A. D. Barnes, Waupaca.

Appropriate with the program, my paper should contain suggestions only and to Wisconsin' nurserymen. (The local life, stimulus and back-bone of practical and successful horticulture in Wisconsin).

First, let us inquire into the situation. Are we getting the just appreciation, consideration and patronage that we should have? Experience and observation informs me, No. Now to my

abused and discouraged fellow nurserymen let me suggest: First, that we organize a protective association, mass our catalogues into one monthly publication, in which we may distribute light and practical information to every planter in this state, through which we may discourage foreign patronage and expose the tricks and frauds of the Ohio orchard contractors, tree agents and hawkers, guaranteed and ironclad apple trees (they mean ironclad contracts of course), wonderful new varieties of tree strawberries, etc., and the procuring of patronage through photographs unlawfully obtained and represented as evidence of their handiwork and hardiness of their goods, and in which each nurseryman may set forth his particular claim to the local patronage and support, and through which we may come in congenial touch with the citizens of our proud state, counsel and encourage mutual co-operation, establish a code of fair, honest and equitable prices, instigate a vigorous protest against the distribution of foreign wholesale catalogues and price lists, become members of and attend the national conventions, put in our protest and demand our rights, organize a Wisconsin Nursery Growers' Association and locate at least two central plants of nurseries — one in the southeastern and one in the central northwestern portions of our state in which to grow the bulk of the goods for each nurseryman, and in said large plants or as they should be, large nurseries, we could surely grow better goods and at much less expense than we now do in our several small nurseries. Grow those kinds and varieties best adapted to our state, grow goods for and build up a trade for Wisconsin and Wisconsin alone, procure foremen and grounds that can and will grow fine hardy and thrifty goods, that will be fresh, acclimated and adapted. Make our dealings so plain, straight and honest that no outside concern can gain any foothold in our territory that we are so justly entitled to, educate and protect our agents, arm them with certificates of qualifications, require each nurseryman to be a practical grower of fruit, thereby setting an example worthy of patronage. Be patient, persevering and industrious, cordia and courteous to our patrons and the public, and methinks our reward shall be guaranteed.

BEST PLAN TO PROTECT THE PLANTER FROM FRAUDULENT AGENTS.

A. L. Hatch.

The fraudulent tree agent is the one that pretends to represent some enterprising nursery but who fills his bills with stock obtained from anywhere, regardless of the varieties. His tricks consist in extravagant yet plausible claims made for his methods of propagation and management he advises; in imposing new and untried kinds on his victims, in charging exhorbitant prices for everything he sells, and in deceving all along the line. Pleasing and pausible in manners, sleek and silvery in speech, candid in appearance but lacking in truthfulness, he is indeed a trickster to be avoided. Every year witnesses his operations in many parts of the state and thousands of dollars are wasted upon him by unthinking farmers.

And right here is the remedy: set the tree planters thinking before he comes. Not necessarily about this fraud and his tricks but along the line of good business, common sense in tree planting. Let the local agent of any good responsible firm be fully informed of the principles of business fruit culture, and let this agent go among his neighbors in a strictly business like way and offer straight goods at fair prices and inform them of common sense business methods by which success is obtained, and it will go far to protect tree planters against the tricks of the fraudulent tree agent.

Last season a man came to us who said he had five men working for him selling nursery stock and he found that in the territory he wished to canvass he could sell more stock if he represented our firm. He said he was selling apple trees at fifty cents each, pears, plums and cherries at $1.00 each. He wanted to know what we would ask for the use of our name in his business and he would buy stock to fill his orders from southern nurseries. I told him one million dollars; and that no man could represent us unless he used our stock. He soon left the territory

with his men and we felt that in one instance at least we had protected the tree planter from his tricks.

It is possible that the method of licensing agents and requiring bonds as required by the laws of Michigan might have a good effect, but I presume would also in some cases give apparent authority to genuine frauds.

Upon the whole it is probable no better plan that is practical can be suggested than informing tree planters everywhere of the principles of fruit culture as a business and the facilities offered by local nurserymen themselves.

DISCUSSION.

On motion of Mr. G. J. Kellogg, Mr. Frank Yahnke of Minnesota and Mr. Bentz, from the Northeastern Station, Iowa, were made honorary members of the society for one year.

Mr. Edwards—I would like to ask Mr. Hatch in regard to the best medium of informing these millions of people. He spoke about business methods in purchasing nursery stock.

Mr. Hatch—I would not ignore any of the ways of informing the public, from the magazine of the Horticultural Society to the local press. A great deal can be done by the nurserymen themselves through the local press. Every local newspaper has a desire to magnify the importance of its own locality and they take a vital interest in its development. Now, if a nurseryman is going to develop fruit-growing as a business, in his own particular locality and he has any business methods that are of interest to that locality, he can bring them to the attention of the public through the local press. Then he can secure the patronage of somebody there on that business basis as an example to which he can point and one example in a neighborhood sets the pace for all. For instance, if you will pardon my illustrating the subject by my personal experience: In Sturgeon Bay I induced a man to plant an orchard of about twenty acres in apples. He planted on a business basis and I called attention to it through the public press, noted the progress in growth and the adaptation to the

place. People see it and notice it as they pass by on the road, and it educates them to the business of planting, and it has stood as a bulwark against the tricks of these fraudulent agents. In another case 40 acres was planted on that same basis, and in another case 30 acres, both stood as a bulwark against the tree agent, and he abandoned the territory. Well, this has been made conspicuous before the public by the local press, the local editor and the local correspondent co-operated in the matter, and we all worked together.

Before sitting down I want to ask Mr. Barnes if he would advocate a nurserymen's trust?

Mr. Barnes—By no means would I advocate any trust, but by all means I would advocate just the lines that I suggested in that paper. I believe it is not only possible, but I believe it is practicable for us to mass together and grow nursery stock in large bunches and grow better stock and grow it much cheaper than under the present system.

Following along the line of Mr. Edwards' talk and Mr. Hatch's suggestion of educating the people, etc., and what will we do to head off the fraudulent tree agents, I want to cite an incident. I know a party near Waupaca who planted a business orchard which proved wonderfully successful. Some fraudulent tree agents came along and procured elegant photographs of this orchard, then went two or three orchards further away and claimed that that photograph represented their enterprise; that they had furnished those trees and assisted the planter in planting them, and had some records to show the productiveness of the orchard, and I positively know of their selling 50 to 100 orchards last season from those photographs. Now what are you going to do with such cases? My remedy would be, instead of publishing our catalogues as we do, to pitch in and publish a Wisconsin Horticulturist, put in our claims and our protest, get the names and addresses, if we can, next year, of every man that owns an acre of ground in Wisconsin, and circulate those papers among the people.

Mr. Smith wants to know why those men are not arrested and prosecuted. In the first place, they can represent Mr. Hatch's orchard and my orchard as much as they please, we can not pros-

ecute them. The purchaser who purchases those products can prosecute them for getting money under false pretenses, but usually they deliver their goods soon after their sales. In this case they delivered them within thirty days after the sale, drew their money and skipped the country. The purchaser could prosecute, but when you have commenced prosecution you will simply have to pay your own costs and gain nothing by it.

Mr. Yahnke—We will have this trouble as long as there are dishonest men and people who are fools enough to buy of them, and the only successful remedy is to educate people so that there will no longer be anybody to buy of them. That will stop it right away. There are men (I will not say ladies, because ladies are not so foolish as men are) that want something that comes from far off, and anything that comes from far off has great value. They want something better than their neighbor has, and when an agent comes around who comes from a good ways off, they think he has something great that none of their neighbors have, and they buy orders from them big enough to stock the whole market. I do not know what the remedy is, except we get the farmers to read the local press, and to get our magazines into their hands, so that they will learn what these people are.

Mr. Philips—In regard to what Mr. Hatch said about object lessons in planting trees and having people see them, — I think a good remedy would be in this case to do the same thing we have done in Marathon county. We have about 60 to 70 counties in the state and it would take about 250 trial orchards, if we could get money enough to locate them and care for them.

My experience with that trial orchard in Wausau was this: The first summer when we laid out the ground and brought the trees there to plant them (the orchard is on the main traveled road from the town and the people drive the length of the orchard and I take pains to run the rows back so they are straight from the highway) every man that went up to the town the first spring we were planting, looked at the work with pity. Some of them would come over into the orchard and would say, "You can not grow trees here, we have bought trees for twenty years and we have nothing to show for it, you are fooling away your

time." "But," one fellow said, "you are doing it with the state money, so it is all right. If you gave me the trees here I would not set them out." Now they come along and see those straight rows, all growing nicely and growing fast, and that same man said last fall, "If you can get me some trees, like those, I will take 100 of them." And during the last summer there has been twenty or thirty men, residents of that county, looking at those trees, inquiring where they were bought, and are becoming really interested in growing fruit. Up in that country there will be a lot of fruit trees set out next summer. That orchard has done much to educate the people. Reading about it is not going to educate many people, but if you can have about four trial orchards in every county on good soil, and get good trees, it is going to get people into the notion of buying trees that are adapted to Wisconsin.

Mr. Smith—What Mr. Yahnke has said in reference to people buying something imported it seems to me is one of the chief causes of the troubles. We see it not only in fruit trees, but in other things.

Dr. Loope—As long as we know that a man—not a woman—can smile and smile and be a villain still, and as long as that pleasing address and exterior can cover a rotten heart within, we will have the tree agent and his trees that are calculated to be something extraordinary. As long as you find in the rural districts men and women with horticultural instincts, you will find people that will bite at something that is fancy. The only hope is that you can save some people that have not got the horticultural instinct and that have got the business part of it; then you can commence to talk to them and get them so they will not bite at the dollar tree that ought to be sold for 25 cents. And there is no escape from this. I find out that they have been in Mr. Hatch's neighborhood, and Mr. Hatch is a man that can talk fruit till you can not rest, and he does to his neighbors, and he has told them a hundred thousand times, I presume, that they are going to be swindled, and yet they go right there and work their schemes, and will sell them dollar trees that he sells for 25 cents, and you can not stop those tree agents until you get some business sense into the heads of the people.

Mrs. Campbell—I was quite surprised to hear one of the first speakers exclaim so emphatically against trusts, and then go on and make statements that indicated so decidedly that you did need trusts to protect yourself. The trouble is, we misunderstand the term "trust." We have misapplied it, we have considered it as meaning the same as monopoly, and it is entirely different. We define the word "trust" as an association of individuals coming together for better protection. If there is any class of people that need to come together for better protection and for better business methods, it is the Wisconsin horticulturist. And so if you will investigate what trust have done for those who have dealt with them, and what they have done to advance business interest, I am sure you will agree with me that trusts for the Wisconsin State horticulture would rid you of a good many evils that you now have to contend with.

Mr. Barnes—I want to thank Mrs. Campbell for properly voicing my meaning, and I say to you again, the sooner the Wisconsin nurserymen get together and talk up their business, and become socially friends and understand each other, and the sooner we get together and establish a standard and just price for our goods, the sooner we will be successful in our business and the sooner that we protest against the eastern and southern nurserymen distributing wholesale catalogues and wholesale price lists to planters, etc., the sooner we will get the benefit of home patronage. And I believe it just and proper at this time that some suggestions or some arrangements be made for at least a council on this subject.

Mr. Toole—While I may perhaps say that I am in favor of Wisconsin grown trees, still, I would say on the other hand, the fact that a tree is grown in Wisconsin does not sanctify it by a great deal. I remember last year at an institute meeting a lady said that she had bought a great many trees from different local nurserymen, and she also patronized one firm in Rochester (I take it for granted there are different kinds of nurserymen in Rochester, some good, bad and indefferent) but she said as a rule, that the trees that she gets from Rochester grow far better than the ones she gets from the local nurserymen. And I will say that it is my belief that the first growth of a tree in an orchard

has a great deal to do with the success of that orchard, and unless you make sure of growing better trees here in Wisconsin than are grown outside of the state, you are not going to keep out the outside grown trees. We all know that we have something to contend with here in Wisconsin; we all know that there is a liability of root killing in nursery grown stock in the orchard, and I think there are many times when nurserymen send out dead trees, when they do not know they are doing it. They find out afterwards. This year is not the only time when nursery trees have suffered at the roots in the nursery, and buyers have suffered from these trees afterwards, and I really believe our friend here at the left has given us a very good suggestion in the line of our nurserymen uniting together, picking out a location where you can grow good stock cheaper and draw from that stock. And then I would say further than that, to make sure that you care for the interests of your customers. Build yourselves good cellars, and put in in the fall all that you are likely to turn out in the spring, so that you can make sure that you have a tree that has live roots as well as live tops.

In regard to this matter of dishonest tree agents, there has been something done in the way of legislation to protect people against fraudulent goods, as we have it in our Bureau of Food Commission, etc., and I think it would be possible that we might, without trying to stand for anything that is going to keep the nursery business all among ourselves, but still plan for something that shall protect the people; have some sort of reasonable license system and have these people give bonds that they shall show where the goods come from, and have them as reasonably true to name as any responsible nurseryman could have.

Mr. Edwards—I think there is one point that we overlook. You say they can grow better trees in Rochester than here. They are budded trees that have not a root to support them; now those trees are worthless to us. And in regard to the tree agent, I have been a tree agent twelve years, I have come in contact with thousands and thousands of people, and I believe just as firmly as I can that if a man goes out and tries to do a straight, honest business, tell the people the truth and instruct them, you can hold the bulk of their trade, in spite of the fraudulent tree agent.

Mr. Hoxie—It is too bad we have not a representative here on the other side. I wish we had some tree agents besides this gentleman from Fort Atkinson to hold up his end of the yoke. I, for one, advocate, and always have, the use of our own home grown trees, and when I have a circular from outside nurseries (and I have had a great many of them during the past ten years) I either pay no attention, or, as I have done in two or three cases, write the men, saying that we have men in Wisconsin selling all the stock that we need.

Mr. Converse—As I look at it, tree agents have been a god-send to this country. What I would like to see is, the business protected, the same as insurance business, by requiring every nursery doing business in the state to register and take out a license.

Mr. Bentz—In all horticultural societies there seems to be a tendency to put all the blame on to the shoulders of agents. I do not know that I ever met a man that made a failure but what it was somebody else's fault besides his own. I believe there is a remedy for the faults of the agents as there is for everything else. Every nurseryman should supply every agent that he employs with a certificate of some kind, showing that he represents that concern, and then if he delivers the goods that he sells, he certainly gets them direct from the agent.

Mr. Foley— I do not know if you would call me an old tree peddler. After thirteen years I came to the conclusion I would try to start my own nursery. I am trying to start honestly and to give a farmer what I think would be the most benefit for his money, and I have during my experience dealt with what I consider some of the best nurseries in Wisconsin, and men who I think are perfectly honest, but the great evil I find is with the farmer; the bigger the swindle you introduce, the bigger he will buy. That is my experience. The farmer wants something cheap, and he does not find out until it is too late. So it is uphill work for a man to go on the road to do an honest business. I will say to this gentleman here (Mr. Barnes) that I will be strongly in favor of combining together and raising nursery stock in certain parts of the state, because I believe that nurserymen can raise it cheaper than we can in local small branches here and there through the state.

Mr. G. J. Kellogg—The dissemination of horticultural knowledge is the secret of this whole business. Our little magazine, if it was read by the people, might aid them.

Mr. Yahnke—Let us not forget that not all tree agents are swindlers. The main thing is that we educate the buyer, and if we can not do that we need not talk.

President—I am sure we have had a very profitable discussion, and traits in human nature that we are all familiar with have been brought out. I sometimes think our comforts do not depend so much on having the necessities of life, but rather on having things a little better than our neighbors have.

Mr. Hoxie—That is what should be, and the sooner we fall in line with the old states that have adopted something, the better it will be for us.

The Secretary then read the following report from Norwalk.

REPORT OF J. J. MENN, ON OBSERVATION FOR 1899.

The winter of 1898–1899 was very cold, but the ground was well covered with snow from November to April.

Spring opened very favorable, with very warm weather the middle of April, all the apple trees bloomed fairly well, but we had too much rain during bloom and the blossoms all fell in a very short time, and the crab-apples was the poorest known for many years, and what apples there were, sold for 75 cents to $1.00 per bushel, but they did not keep any length of time. Rotted very fast, some of the oldest trees were injured some by the cold winter, they did not leave out and have the foliage they should, those affected most were Famuse, Hass and Woolbridge. The Famuse recovered in July.

There were only two orchards sprayed, my own and one other and we were the only ones that had a fair crop. It must be that it pays to spary, and I shall do it more thoroughly another season.

Small fruit was poorly, the crop of the Rasp and Blackberries were badly winter killed. Not very many Strawberries grown,

Only small garden patches and they were a one-half crop. Not nearly one-half as much small fruit grown as five years ago. Farmers got discouraged caused by failures. Though prices were good last summer, there were many premiums of good quality.

It seems everybody is going to raise apples, judging by the number of trees sold in the last two years.

The Model Ohio Orchard men have again last summer sold thousands of trees, delivered at Norwalk.

The ground has been lightly covered with snow this winter with sufficient moisture in the ground, so I don't fear any winter killing.

Adjourned until 1:30 P. M.

Mr. President—We will now take up the program of this afternoon. You have all noticed that we are likely to have as practical session as we had this morning. We have a very important subject, "Small Fruits," and we will have a paper by a man who has been brought up in the business, Mr. M. S. Kellogg, of Janesville.

PLANTING AND CARE OF STRAWBERRIES.

By M. S. Kellogg.

First comes the selection of the location for your bed; in doing so be careful to choose well drained land rich enough to yield 100 bushels of corn or 150 bushels of potatoes per acre. This land should also have been cultivated with some hoed crop for two years prior to the setting of the strawberry plants, in order to escape the ravages of the white grub; one of the trying pests that the strawberry grower has to contend with the first year. Never set strawberries on newly broken-up sod or you will loose 75 per cent. of them by this white grub.

After you have selected your location prepare the ground. How? Just as well as you can. If possible apply a top dressing of well rotted manure before plowing. Plow deeply, harrow

and plank down, then harrow again and plank down again, and so continue until the ground is in first class shape. For the extra time used in preparation of the soil you will be repaid in added growth and vigor of plants and a greater yield of finer fruit. Now mark out your rows. For the commercial grower a horse marker is best as then there is no line or anything in the way of the setters; for the home bed a line may be used. Set the plant for home use 3 feet by 2, and for market growers 4 feet by 1½ or 2 feet as desired. If you grow your own plants be careful that they are pure and above all from a bed which has not fruited. If you buy plants get them from some reliable grower, plants that are strong and healthy. It does not pay to set weak plants for a plant that is weak at planting time is liable to always be a little behind its neighbors and an uneven stand is the result. When plants are received (that is when shipped from a distance), open the bunches and heel in fresh soil, then proceed to set.

In setting use a spade or other tool with which to open a good sized hole; spread the roots out fan shaped and firm the soil so there is no drying out and consequent loss. Be careful that the plants are set at the proper depth, crown just even with the surface of the ground. Too deep is as bad as too shallow setting, as mildew and rot will attack plants too deeply set while those that extend above ground will soon dry out and die or else hang along and just live but make no runners.

In setting we use a spade shaped dibble made from polished steel with a blade 4 inches wide by 8 or 9 inches in length and have a boy drop plants for the setter; keeping plants protected by moss or water so there is no drying out.

Time to set. Just as early as the ground is warmed enough so that plants will at once start to grow. A week or two too early is better than a week or two too late. But remember the ground must not be worked at any time when so wet it will cake, as this brings loss later on. When your plants are set get the cultivator out and see that they are cultivated every week and hoed every ten days up to the 1st of October when cultivation may cease and hoeing also, except that all weeds appearing should be removed either with a hoe or by hand.

Shall we have hill culture or matted rows? For those who desire a limited quantity of extra fine fruit hill culture seems best but this method of cultivation entails more work and is not generally followed. Matted rows are best in nine cases out of ten. But here a word of warning is necessary; do not permit the plants to take root nearer than four inches from each other and cut off all runners when the row is 24 inches wide. By so doing you will have a good broad path for the pickers and also have a row wide enough to produce as much fruit as if the rows ran together, and when each plant has plenty of room the fruit is of a much better quality.

November 1st cover the bed for winter using straw, marsh-hay or any covering free from foul seed. Do not use manure as it contains to much grass seed. Cover plants just out of sight, being careful not to apply too much covering or they will smother. In the spring remove the covering and cultivate up to the time the fruit is beginning to set, when the mulch should be replaced and not disturbed again until after fruiting. The object of this spring cultivation is to store a supply of moisture for the plants during fruiting time, and you are not sure unless you cultivate, and not always sure then.

The leaf roller is one pest we have to fight. One preventative is to cut any old beds immediately after fruiting and when dry enough burn over in a brisk wind, which destroys many of this insect. Poison will not reach this little fellow, and where they are thick enough to endanger the crop (which is very seldom) the only sure way is to open the nest and kill by hand on the young beds the first season.

Varieties have not been mentioned as we believe they are to come in a later paper, but for the amateurs staminates are to be recommended before pistillates, and we now have many staminates equally productive with any of the pistillate varieties.

SMALL FRUITS AT SPARTA.

By Jno. L. Herbst.

Since the beginning of raising small fruits in Sparta and vicinity, which did not assume very great proportions until about 1890, we have had varied outlooks for the season ahead. In the past ten years of my experience with small fruits and from observations taken I can say that no two seasons, in the amount of rain-fall, and weather favorable during the budding, blossoming, pollenizing and setting and maturing of fruit, have been alike.

We rather think and look more to the outcome than the outlook of the small fruit business, but if the proper care and attention is given the vines and canes that will bear the following season, and they are properly placed in winter quarters and removed at the proper time, weather conditions being favorable, there is no reason why the outcome of the crop should not be favorable. Of course there are many little things that come up in the growing of the small fruits which must be tended to. But I mean if the proper care and attention is given to the plantation, weather conditions being favorable, there is no reason why a grower of small fruits can not be successful. You will say it is being overdone, too many are going into it. Let me say the more there is in it the better efforts will they put forth to produce the best. The more attention will they give to the care of growing vines and canes. The more attention will they give to harvesting and marketing the product. The grower that places his fruit upon the market fresh, good size and quality and in neat attractive packages is the one that sells first and gets the best price.

The acreage of small fruits about the vicinity of Sparta has steadily increased from 1886 until the year of 1894 and 1895, when it was in the neighborhood of 600 acres. Two seasons of severe drought discouraged some of the growers and the acreage has decreased each year since so that at the present time 350 acres will probably cover the acreage of small fruits including strawberries, raspberries, blackberries, currants and gooseberries, a very small acreage of the last two named.

In the year of '97 and '98 the growers did not realize much of their srawberry plantations and for this reason many cut their acreage down and others plowed under what they had. The season of '99 was a profitable one to the growers. Yields were good, quality of fruit good and prices were such that they realized a fair profit. It has been probably the most profitable one since the seasons of 1892 and 1893. This has encouraged the growers so that this coming season will see many new beds set.

We began the shipping of strawberries last season the 3rd of June and the first Sparta berries sold for $2.00 and $2.25 per 16 qt. case. A week later commission men were buying from the grower paying $1.75 to $1.85 per 16 qt. cases delivered to depot. About this time a heavy rain and wind storm washed out railroad tracks and growers were compelled to place in refrigerator cars with no telling when they would go out, or draw 25 miles to the north at a point on the Omaha where they could be shipped by express. As a result of this the market dropped and growers were glad to sell for 50 cents a case. For four days not a berry could be shipped out and when they did go so many arrived at Minneapolis, St. Paul and Duluth that the market was overstocked and the growers did not realize much from these shipments after this slunk in the market and these berries had been disposed of the price came up again. Much credit is due the directors of our association for the manner in which they handled the shipments and to them can the growers give the credit for getting the prices they did.

Raspberries and blackberries were both good crops with the growers and both brought good prices throughout the whole season. I give you a report which L. S. Fisher, president of our association compiled, and which gives you an idea of the business done at Sparta the past two seasons.

"Total number of cases shipped the past season only 85,000. These sold for 95 cents gross. The total gross amount being $80,750.00; amount paid for crates, freight and commission, $28,050.00; amount paid for picking, $20,400.00; total, $48,450.00. Amount received by growers, $32,300.00; amount received by growers and pickers, $52,700.00.

"The present year has been a very favorable one for the berry growers in this vicinity. In 1898 we shipped 72,040 crates and

sold them for an average price 71 cents per case. This year we shipped 85,000 cases and sold them for 95 cents per case gross, an increase in price of about 33 per cent. The crop of 1900 will no doubt be 50 per cent. less than crop of this past year for the reason that only a small acreage of strawberries was planted in the spring of 1898 and 1899."

The outlook for 1900 is good at the present time. Strawberry beds made a good growth and vines set nicely and most growers have covered beds with either fine manure or straw. All cane berries grew strong, healthy cane for this seasons fruiting and it was well matured and most of it placed in winter quarters in good conditions, and if the outcome will be as good as the outlook is at the present time the grower will have no reason to complain when he comes to balance up the fruit account at the end of the season.

CULTURE OF SMALL FRUITS IN CONNECTION WITH OTHER FARMING.

Frank Stark, of Randolph, Wis.

This is not exactly what I would have chosen for a subject but as Secretary Philips has assigned it to me, I must endeavor to work it out. It's just like Philips, anyway.

It must not be thought for one brief moment that a person can grow fruits on the farm without bestowing any extra time or thought upon them. It seems as though the nearer some fruits are brought to perfection the more difficult it is to obtain good results in their culture. The farmer may gather a few wild strawberries each year without even touching the soil. Not so with the Bubach or Warfield — except, perhaps, at Dr. Loope's!

There are many questions which each person must settle for himself, or herself, such as, — how much land can be given up to the berry garden?

This should be in a place sheltered from the strong summer and winter winds, or it will be necessary to hold the runners in place with hair pins to insure rooting, and the winter protection

will have to be stuck down with La Page's liquid glue. It is well to avoid too level land for such purposes. I lost a season's work on one-fourth of an acre of strawberries by overlooking this.

When it is decided where the plants and bushes are to be grown and the soil is fertile enough to grow good corn, then, when hauling manure in the fall, put some of the best of it on the plat, at the rate of forty loads per acre, at least. Nothing else pleases strawberries so much.

The place need not be prepared and set to plants the first day the soil will allow, but this work should be done the first week or two after one can get on the land. My little "dab" of experience has taught me that the best results come from the earliest setting.

Select only the varieties you know to be good, or those you know some one else knows to be good.

Raspberries, blackberries, gooseberries and currants succeed on good soils, but the strawberry—"Ay, there's the rub." Learn all you can of the varieties which best succeed on soil of the same character as that under consideration and then secure a few varieties of both sexes. In four or five years one can tell something about which are the best to keep.

The size and shape of the garden varies with the surroundings, and the length of the rows may be gauged by the size of the appetite and the demand for fruit. If the amount to be invested is sufficient to fill the place, secure a few plants of the different kinds of fruit and start rows of each and grow something else the rest of the way down the rows.

The raspberry tips can be buried the last of August and the next year the raspberry rows, together with all the others, can be filled out. Anyway, make a start.

If properly planned and executed these rows may be easily and quickly cultivated with two-horse cultivator, the first year. If one keeps his eyes open and only thinks occasionally, he can cultivate the strawberries many times during the corn cultivating season, with the team, using very little time. The shields must be on to avoid covering the plants and to allow the teeth to run close to the row. After that, the potato cultivator can be pressed into the service, if it is not the old shovel variety. Where much

fruit is grown the Planet Jr. is the thing, and it is all right for potatoes, etc.

There can be no iron-clad law laid down, that the surface should be cultivated once a week, or anything like that. If it rains three times a week and the surface dries sufficiently to allow the surface to be stirred the next day, then it is the proper thing to cultivate the garden three times a week, to arrest capillary attraction, to areate the soil and to destroy millions of weed seeds which have sprouted.

To cultivate between the plants in the row, a sharp rake in skillful hands is the most effectual method of killing weeds before they have become rooted. "A stitch in time saves nine," but a stroke with a rake in time saves about nineteen, for after the weeds are up the hoe must be resorted to. "Let your head save your heels," and your back, too. When the ground is damp and warm seeds sprout mighty quick.

To be sure we do not cultivate corn as often as that, but if we expect greater returns than a corn field yields, we must apply more care and trouble.

Then one must learn not only to labor, but also to wait. Hope is more essential than the hoe.

One goes out in the orchard in winter to get his enthusiasm aroused a little over the fruit buds and young trees. He almost expects to see the yearling trees look up and wink at him. But blasted hope! The blasted rabbits have chewed them off for the sake of obtaining the terminal bud.

Ladies and gentlemen, I am about to close. These are some of my best thoughts. Some of them I thought when milking the kicking cow, and some are brand new, warranted for one year.

We can't each of us be a strawberry man like Kellogg and get married three or four times; we can't all be as handsome as Philips and grow apples on the Virginia crab; we can't each of us be a Dartt and know the virtues of girdling without the vices; but those who have land at their disposal can grow fruit for themselves, friends and neighbors; and when they till the soil and eat the fruit thereof, they thereby lengthen the span of their existence, until they shall finally crawl under this soil they have so often tilled, there to remain.

BEST LIST OF SMALL FRUITS FOR THE WISCONSIN FAMILY GARDEN.

By A. J. Edwards, Fort Atkinson, Wis.

This might be given in a few words by saying, "Plant the varieties you like and that do best in your locality."

This list as I understand it, is for those who would have a good supply of fresh fruit throughout the season and enough preserved for the winter months.

Now there are, comparatively speaking, but few of the people in this state that know very much about our society or the lists that it recommends, and I am afraid if they did it might be confusing. In our '98 report we recommended twenty varieties of strawberries alone. In my opinion this is double the number it ought to be. Now the question with these people is how am I to know what varieties are best for me to plant.

They read the horticultural departments in their papers and nearly every writer recommends a different list and advises them to send direct to some nursery and get what they want. Well they send to the nurseries they see advertised for their catalogues and read the descriptions of the different varieties. In most of them they find nearly all are the best (and this may be true in certain localities and under favorable conditions). Also that the newer the sort the more space is given to it and the better it is (so says the introducer). As I look at it, unless one has a special liking for this kind of work and time and money to use in experimenting with these new things, the less they have to do with them the better off they are.

They would much better plant those varieties that have been thoroughly tested and not found wanting. Take the farmer, for instance; he cares very little for the name, what he wants is some variety or varieties that when he plants and cares for them he can be reasonably sure of getting a crop of fruit. I believe the pushing of new, untried sorts onto the people and the disappointments that often follow retard rather than advance the time when they shall grow their own fruit. I do not wish to be understood as

opposing the introduction of new fruits. On the contrary I say let them come, but let them be well tested and culled before recommending them for general planting. Some of the older varieties, like Crescent and Warfield Strawberries, with a good fertilizer, are worth more in the average family garden than hundreds of varieties that have been introduced since they were

The list I would recommend is as follows: Strawberries, pistillate sorts, Warfield, Crescent and Haverland; staminate sorts, Lovett, Splendid and Bederwood, Brandywine for late.

Black Raspberries, Palmer for early, Ohio or Older for medium, Gregg for late.

Red Raspberry, Loudon.

Purple Raspberries, Columbian.

Currants, White Grape, Red Dutch and Victoria.

Gooseberries, Downing.

Blackberries, I would not advise planting unless one can afford to take the chances of a crop, which, with the care usually given are very slim. If I were to plant at all would use Snyder and Briton.

Grapes, Moore's Early, Worden, Concord, Brighton, Delaware, Agawam, Niagara and Moore's Diamond.

A BEGINNER'S EXPERIENCE IN ORCHARDING IN DANE COUNTY.

By S. H. Marshall.

It is rather difficult to talk of one's experience as a beginner, but perhaps when that experience relates to orcharding in Dane county, it will be a more cheerful subject at this time than later on.

I set out my little orchard the last part of April, 1897, on a rather high piece of ground, sloping slightly to the northeast and protected north and east by woods, but open on the other two sides. It consists of about four hundred trees of which one hundred and seventy-five are domestic plums, one hundred and

twenty-five cherries, fifty apples, twenty-five European and Japan plums, and twenty-five pear trees. I am glad to say they are most all alive today in spite of inexperienced management and hard winters.

The domestic plums and cherries were set out as a commercial venture while the balance were put in partly as an experiment and partly as a benefit to myself and family.

The plums that I set are, Rockford, Hawkeye, Forest Garden, De Soto, Hammer, Wyant and Rolling Stone and I expect to add this spring the Surprise and Aiken. They have all done well, as only six trees have died, five that were blown down in a gale and one that was caught by the harrow. The Forest Garden has made the best growth, as much as nine feet the past season, followed closely by the Rockford and Hammer, while the De Soto seems to be the stockiest and most shapely.

The cherries planted, were seventy-five early Richmond, twenty-five large Montmorency and the balance about evenly divided between Gox Wood, Dye House and Lake Kentish. Of these the early Richmond appears to be the most satisfactory grower on my soil, with Montmorency a close second. Late Kentish has done very well, Dye House has thrived, while Gox Wood has made a very fair growth, but quite a few trees have had to be replaced.

In apples I set out Duchess, McMahons, Wealthy, N. W. Greening, Fameuse, Talman Sweet, Tetofski, Hibernal, Sweet Russett, Longfield, Lubsk Queen and Eureka, with Whitney No. 20 and Martha crab. I also set out fifteen Virginia crab to topwork, but unfortunately thought it best not to work them the following spring and very few of the grafts I made last spring took, and if I dont have good luck this year, it will puzzle me to know what to do with them; they have grown so fast they are too large now to work to advantage. The McMahon, Tallman, Sweet, Longfield and Wealthy have made the best growth, and the McMahon and Longfield bore a few apples this past season. while N. W. Greening has done the poorest.

Having become interested in dwarf apples I set out a couple of dozen between the rows of standards and last season picked quite a few perfect apples from them. I find, however, that it is im-

possible to protect these little trees from the rabbits. My trees were all carefully pruied before being set, and the land was heavily manured and thoroughly worked. The roots of the trees were all dipped in water and two or three shovels full of top soil was put into the holes before planting.

After they were all set, they were well mulched with straw litter. The first season, rape, beans and potatoes were planted between the rows and cultivated up to the middle of July. The next year it was all sown to rape and cultivated as before, but last season I spread the mulch, plowed it under and kept the ground clean until July 5th when I sowed it to field peas and after they were through the sheep were turned in and pastured for some time, but taken out soon enough to leave a good covering for winter. I find that sheep will not hurt the trees so long as the pasture is green, but when everything is dry they are apt to damage the bark. The first winter the trees were protected with tar paper, but this was found costly and very unsatisfactory, so that the next year the paper was taken off (all there was left) and replaced with wood veneer, which I find very satisfactory, if elm is used and it is put on when damp and well wired. I tried ash and maple as well as elm, but find they warp worse and crack. Am greatly pleased with the veneer protection as it seems to answer all purposes and is lasting and cheap. My orchard has been pruned every spring, care be taken to keep the heads thinned out and shapely.

Perhaps you may be interested in knowing how my pears and European plums have done so far, and as it will only take a moment I will go over them. I set out a few of each of Flemish Beauty, Keifer, Clapp's Favorite and Wilden pears. Abundance, Burbank, Dawson, Quackenboss, Purple Egg, Lombard, Greengage, Bradshaw and Moore's Arctic plums. The Clapp's Favorite pears all killed out the first winter, quite a number of Keifer had to be replaced after last winter, but so far the Flemish Beauty and Wilden are doing well, particularly the Flemish Beauty. Amongst the plums the Abundance and Burbank are making the best growth while all the others are growing well.

Last winter we all had some experience and mine summed up in a few worrs is this:

My small fruits suffered severely, strawberries all killed, black berries the same except Stone's Hardy, which was only killed to the ground (other varieties, Snyder and Britton), Black caps about a third of the canes killed, red raspberries nearly one-half, and out of one hundred grape vines, there are perhaps two that may live. My tree fruits suffered very little in comparison, as the only trees killed were two N. W. Greening, one Tallman Sweet and one Wealthy, and perhaps ten all told cherries, plums and pears.

In an old orchard that there is on the place of some dozen trees I lost a Tallman Sweet, a Plumb's Cider and a Duchess, while trees not supposed to be as hardy came through all right. When I look at the fifty or sixty cords of dead wood in the ten acre grove next to the orchard I am not surprised that some of the fruit trees succumbed.

So far, I am well pleased with my orchard and as soon as I am satisfied which are the best varieties to plant I expect to increase it to six or ten acres. From a great number of inquiries I have made in Chicago, Milwaukee and Minneapolis markets, I am satisfied, that good cherries and plums will command a fair price.

Before closing I should like to say just a word or two in regard to the Surprise plum, which I saw in fruit on the Minnesota Experiment Farm this fall. It is without doubt the greatest domestic plum I have seen yet; so far ahead of the others that there is no comparison. The tree seems vigorous and tough, while the fruit is abundant, of good flavor, very large, splendid color, flesh firm and pit small; in fact, almost an ideal plum and I hope in the near future to see it growing in Dane county, as I saw it growing under Prof. Greene's care in Minnesota.

VEGETABLES UNDER GLASS.

Paper Read by Short Course Student at Horticultural Meeting.

In its account of the recent meeting of the Horticultural Society the Agricultural promised to print in full the following paper by C. W. Cheney on growing vegetables under glass:

The growing of certain vegetables out of season or under glass as we say, is an industry we may believe will grow more rapidly in the futurre. It is an industry yet in its infancy and the demand for nice vegetables such as lettuce, tomatoes, cucumbers and radishes is rapidly growing and there is comparatively a very small amount of glass devoted to it.

Lettuce is more extensively grown than any other of the vegetables and is probably the most profitable, and is thought by many to be a crop easily grown, but yet there are a good many conditions to the successful lettuce grower, the soil must be of a light sandy texture so that the water may pass readily through it, for if heavy it will retain too much water in the surface and then if the temperature is a little too high we are liable to loose our whole crop by that. It should be grown in a cool house with a night temperature of 45 or 50 and 10 degrees higher during bright days. There is one other pest to guard against that is green aphis or greenfly and if properly fumigated with tobacco twice a week we will never be bothered with it. But great care should be given to water and ventilation if we wish to be successful and when successful grown it is a profitable crop.

Probably the next profitable vegetable is the tomato and here we have a vegetable that must have the very best of care and one that is more expensive to grow. There are a number of deseases that must be guarded against and a great deal depends upon the watering and the ventilation as they require a high temperature, the expense is much greater than with lettuce.

The tomato must have a very rich soil, and after coming into bearing must or should be fed with liquid as they are manure high feeders, the night temperature should not fall below 60 degrees and should run 10 to 15 degrees higher in the day or may

even go 90 degrees without injury, but should be given plenty of fresh air.

The plants should be trained with single stems or two to three stems but if single stems are grown they may be planted closer and this way is preferred and they should have 5 to 6 feet of head room.

It will require about four months to bring tomatos into bearing from seed and should bring from 20 to 50 cents per lb. They may be grown either in bunches or solid beds.

The Cucumber is nearly or altogether as profitable as the tomato and requires about the same treatment and is subject to about the same diseases and requires about the same length of time to bring it into bearing, the grower must here take his market to decide which to grow, the English cucumber or the white spine, which is earlier and not so large and therefor is liked best by most markets but if he can obtain a good market for English sorts he will save time and hand polination, but they must bring a much higher price than the white spine to be profitable.

Radish is a crop that may be grown very quick as they only require about 6 weeks for seed, but the condition must be looked after, they must have a better heat and an abundance of sunlight to do well and when well grown from sifted seeds the crop may be taken all at one time, the soil should be moderately heavy and four crops may be taken within the 15th of October and the 10th of April and should return 30 cents per square foot.

There are a great many others that may be forced but these are the most common and if the humus are put to two or three crops of lettuce and radish and then brought in in late winter and early spring with tomatos and cucumbers they should return if successfully grown from 35 cents to 50 cents per square foot, but the success will very largely depend upon the man.

Mr. Edwards—We were told at the Farmers Institute by one of the members that it is beneficial to dig strawberries and leave them in a shady place, for a period, in preference to setting them

cut immediately. Now in Mr. Kellogg's paper he says, after you take them out of the package, to heel them in dirt. I would like to ask what we gain by taking strawberries and heeling them in any place and making little fine rootlets.

Mr. M. S. Kellogg—When I said to heel them in the soil it was simply to protect them while you are setting.

The President—That protection was given simply to keep the air away from the roots?

Mr. Kellogg—To keep the roots from drying out.

Mr. Coe—The objects I have in placing the strawberry plants where the roots are in the soil and keep them for a day or two until the roots have a start, are two-fold. A strawberry plant is a little different from any other plant that we put out, inasmuch as it carries the foliage through the winter, and the foliage has a certain work to perform. That work is very largely evaporating moisture from the plant, and as soon as the roots are in condition to take up the moisture of the soil, it holds or absorbs the vitality of the soil. If they do form these rootlets the plants get better ripened, and it takes up moisture better from the soil.

Mr. Kellogg—How much foliage do you allow on a plant.

Mr. Coe—We leave on three or four leaves some times; that don't cause any trouble.

Mr. Herbst—We used to practice the method of Mr. Coe's, of taking our plants and putting them in the cellar, thinking that they gained that way by sending out those little rootlets. In the last year we have done as Mr. Kellogg does; when they come in we have the girls sort them, and as quick as they are sorted we set them out, and we have had good success. We have not had to re-set since we tried that method, unless it came a very dry season.

A Member—Do you cut off any foliage?

Mr. Herbst—Yes, we strip them down to two or three leaves, then cut the root back.

Mr. G. J. Kellogg — If we were setting out dead plants I would heel them in until the roots stretched, but I do not want a strawberry plant an hour out of the ground.

Mr. Yahnke—I fully agree with Mr. Kellogg, where it can be done, but if I get plants from Mr. Kellogg, I can not get them

into the ground right away; I have got to take my first chance. The main thing is right here in strawberry-planting. Keep the air off from the roots, do not kill the roots before you plant them. And it makes very little difference if you get the plant on the ground and put it right in, or let is stand a week. There is not a root that I know of that is more tender and more particular, that has got to be kept out of the air when they are dug, than strawberries and raspberries.

Mr. Barnes—I think that we should discontinue the practice of stripping strawberry leaves off, before planting. I believe there is more loss of energy and vitality in strawberry plants from stripping the leaves off and exposing the white heart to the sun and wind.

The President—I want to say one word in regard to this keeping of plants in the cellar. I fully agree with the papers that have been read, that it is desirable, as soon after you dig your plants as possible, to set them out, and if you set them early in the spring, there is no better way.

Mr. Herbst—We all know that every time we re-set a plant or a tree, we change the conditions, it is always a set-back to that tree or plant. Now it stands to reason that if we take these plants out of the ground and strip them and set them right out, you have only one time when your conditions are changed. Why not have this change all at once and have the condition changed at one time, and have that set-back come once and not two or three times?

Mr. Kellogg—In regard to the perfect and imperfect varieties of strawberries as regards productiveness, for the past two or three seasons I have been unable to determine any difference in the productiveness in favor of any of the pistillate varieties over any of the perfect varieties.

Mr. G. J. Kellogg—I wish to correct an impression that might go out. If we receive strawberries plants from a distance, I agree with Mr. Coe that it is better to let them rest, I have no question but that the cellar process is the best in that case. But when you grow plants for your own use, and when we have the plants on our own ground, I think that the cellar process is a damage rather than a benefit.

Mr. Kellogg—There is a question regarding this setting strawberry plants after digging. If you get the plants transplanted before the weather gets hot enough so as to wilt them up in the ground, is there any need of taking them up and shading them? Why not heel the roots in the ground and restore strength in that way?

Mr. Coe—It is almost impossible for every man to get his plants set out the first thing in the spring, when all the conditions are right, but I do think it is advisable, when the conditions are not right. So far we have had better success along that line than we have where they were taken up and immediately replanted, and as long as we do we shall follow that plan.

Mr. Coe—Mr. Kellogg says that he never plants on sod, to avoid cut worms. I would like to ask if that applies to strictly clover sod? I have never yet seen any crop destroyed where it was planted immediately after clover sod.

Mr. Kellogg—The trouble in planting on sod has been wholly in the destruction by worms. Whether the white grub and cut worms are present in wholly clover sod I cannot state, as it has never been our practice to set on sod.

Mr. Marshall—I set strawberries on clover sod and they were very badly killed out by the grub.

Mr. Coe—This clover sod does not kill out in one year. If you have a clover sod of two or three year's standing there is like to be June grass and some other thing in there, but with one year's strictly clover sod I have never had any trouble.

Mr Edwards—I would like to ask Mr. Herbst what kind of strawberries he raises at Sparta mostly.

Mr. Herbst—We raise entirely for the market and we use the Mitchell's Early and Warfield mainly.

Mr. Edwards—What is the proportion of Warfields to the whole?

Mr. Herbst—Three fourths, that is, on the farm that I am on.

Mr. Barnes—What do you fertilize with?

Mr. Herbst—Bederwood, Sparta, Splendid, Lovett and Mitchell's Early.

Dr. Loope—Then you would say the Warfield produces three times as much as those others, is that it?

Mr. Herbst—No, we have three rows Warfields set to one row of the Staminate.

Dr. Loope—Do you get as many of the others as you do of the Warfields?

Mr. Herbst—Not in proportion.

A Member—I would like to ask why he uses so many varieties of fertilizers.

Mr. Herbst—In case one of these fertilizers should blight or not blossom as heavily as we would like it, the other will be there to replace it.

Mr. Kellogg—Of the staminates, which is the most satisfactory and which the most productive?

Mr. Herbst—Well, I cannot say as to any one of them; probably the Lovett for one, and the Sparta and the Bederwood, are probably the three best. Mitchell's Early is all right.

Mr. Bentz—Which of the Pistillate is more productive?

Mr. Herbst—The Warfield.

Mr. J. J. Ihrig—I woud like to ask Mr. Kellogg how he manages to keep his strawberries in planted rows five or six inches apart?

Mr. Kellogg—You must take out your runners. It is one of the hardest things to give each plant room enough to produce the best quality of fruit.

Mr. Ihrig—How far apart should they be?

Mr. Kellogg—At least four inches.

Mr. Jewett—How shall we send out our plants; how shall we pack them? I find the best success I had in shipping was to put 25 in a bunch, put in plenty of moss, not pack them too tight, do not cover the top tight, so that air can get in, do not get too many plants in any box, then they will get through in better shape.

Mr. Ihrig—What is the object of tying them in bunches?

Mr. Jewett—Well, you have to do that when you are digging, to get at what you have got.

President—I hope none of you will get the idea that I advocate setting out strawberry plants in the middle of June, for I do not, as a rule; they do better to set them early in the season. On the other hand, if your other work has crowded strawberry setting out and you do not get your strawberry bed set out until

the first of June, do not give up setting out a strawberry bed. There are some things to be said in favor of this late setting,—if you do not get around to setting until then, then you escape a great deal of hoeing, and then if your land is freshly prepared, there is a whole crop of weeds that you have missed.

In regard to setting on sod, you know sod is about as poor a thing as you can put a strawberry plant on to, and the grub is about as mean a thing as you can handle.

Mr. Kellogg—I want to ask Mr. Johnson how many strawberry growers out of ten are practically sowing clover and plowing it up to plant strawberries in?

Mr. Johnson—I do not know how many would practice it, but if they tried to haul the manure and contend with the weed seed that they get, they must admit that it is a great deal cheaper than to depend on stable manure.

Mr. Edwards—You ship your fruits in car lots from Sparta?

Mr. Herbst—Yes, some do.

Mr. Barnes—On that question of grubs in sod land, do your planting the last week in May, or in June, and you may have your strawberries before the grubs are hatched.

Mr. Edwards—Do you find the fertilizers bear as heavy with you as the Warfield and Crescent?

Mr. Herbst—No.

Mr. Phillips—How many cars of berries do you ship in a day?

Mr. Herbst—Thirteen, I believe, is the highest in one day.

Mr. Kellogg—It is not necessary to pinch the life out of plants in tying them. We use white cords, an average of three cords will hold them together and yet it is not necessary to pinch them so as to injure them.

Mr. Ihrig—I would like to ask if any one has ever tried fall setting, in setting plants for the market?

Mr. Barnes—I have planted strawberries in October when the season was favorable and when a good big crop of snow came, the plants came out and bore a good crop next year, but in a dry winter like this you would get no plants.

Chairman (Mr. Kellogg)—I would like Prof. Goff to give us the history of the white grub.

Prof. Goff—The white grub is the larvae of the June Beetle,

or the May beetle. It is supposed that the larva that lives in the ground three years, the first year it is small, does not get more than a half inch long, the second year it grows larger and the third year it becomes mature and comes out, and it seems to me that Mr. Barnes' theory that the grub will come out before the first of June must be wrong somewhere, because the grub may be in the ground for two full years after it is broken up, and the worm comes out, and my experience has been, that it was the worst in July and August.

Mr. Barnes—Why do you call that the June beetle, if they do not come out until July or August?

Prof. Goff—I did not say that; I say the grub is often worse in strawberries in July and August; I did not say the grubs came out at that time.

The Chair—The grub in its second years' growth is what does the damage in July and August, there is no question about that. I do not believe a clover sod planted last fall or the coming spring, that the May beetle has any chance to lay the egg there this next June. There is no leaf or mulch or anything that attracts him there, so I think one years' clover will be free.

Mr. Kellogg—The question has come up regarding the productiveness of pistallate and perfect strawberries, and it seems in some sections of the state the perfect flowering are way behind the pistillate, but I think with equal care and culture there are several varieties of perfect flowering strawberries that would produce equally as many bushels to the acre as any pistillates we have now, and with the exception of the Warfield the pistillates are as a rule rather soft and poor shipping, while the perfect flowering varieties, take them as a class, are more inclined to be firm and better shippers.

A Member—Do you consider the Splendid a good shipper?

Mr. Kellogg—Not a good shipper, a fair shipper.

A Member—Which one is the best, in your experience?

Mr. Kellogg—The Clyde perhaps, for home use, for one variety, and for the market Lovett or Enhance.

Mr. Franz—Before we drop this subject I would like to ask if you consider the bee the insect that is assisting you in the fertilizing of the strawberry blossom?

Mr. Kellogg—I would like a raise of hands,—how many have seen the bee working on the strawberrw bloom? We have had quite a controversy in our bee journals on that.

(No hands were raised, so far as the reporter could see).

Mr. Johnson—There is another thing that was alluded to that I would like to have a little information on, and that is, all strawberry growers are recommended not to let the plants get too thick. Now we want some practical way to keep those things where they belong.

The Chair—Mr. Smith, have you had any practice in that line?

Mr. Smith—The Warfield is our main variety. Some of the biggest crops we ever grew were on plants that were almost as thick as grass. We picked 590 odd cases of Warfields that were so thick that you could not set a tea cup on the ground.

Mr. Kellogg—If I could have an ideal strawberry bed I would have them three or four inches apart, but it is not always possible.

Mr. Ten Eyck—My experience about getting a crop varies. It depends a great deal on the season. With me it takes a great deal of rainwater to get a good crop.

Mr. Jewett—I would like to ask Mr. Smith about that acre that he had that immense crop on, how many times he irrigated it.

Mr. Smith—I do not know that I can answer that question; when it was dry enough so that we thought it needed it, we put water on.

Mr. Barnes—We are drifting away from the question. The question is, how best to thin out a thick bed of strawberries, and I want to say, the easiest, most practical and quickest way is to cultivate crosswise of your row with a good, sharp-toothed cultivator.

Mr. Smith—On this point of plants being thick or thin, it seems to have been overlooked entirely that some varieties of plants are three or four times as thick as other varieties, and yet we say, put them four inches apart. We might as well say, if you are setting out trees, to put them forty feet apart. The Warfield is a very small plant, the Wilson is a very large plant,

and so there are perhaps two extremes, and we can not plant them all the same distance apart; we want the ground well occupied.

Mr. Johnson—Mr. Kellogg has described what I consider the ideal strawberry bed. I think it is desirable to have the ground covered as well as possible, that is, a strip say 18 inches wide, and then the runners beyond that we want to have kept off. The most effective way is just to cut off the old plant and let those plants that stay there grow out and develop. Now you may think it is a difficult thing to cut out those old plants. Well, it sometimes happens that these old plants, instead of feeding the plants that have already set, draw on them to set out runners.

(Mr. Johnson resumes the chair).

Mr. Edwards—Prof. Goff has kindly consented to explain how we can tell about the formation for a certain time of year, of the bud in the grape, raspberry and strawberry, and I would like to have that explained, if the rest are willing.

Prof. Goff—Simply make sections out of the buds and look at them through the microscope. In all the grapes that I have examined, it is always easy to discover the flower bud; you understand what we call a bud, instead of being one growing point, it is really one growing point and several lateral growing points wrapped up in the bud scales. It is, in other words, the end of a shoot wrapped up in bud scales, it does not mean simply one growing bud, but there is one central one and several back of it, and the whole wrapped up in bud scales. Now if you make a microscope section of one of these buds, you will find a section of the fruit bud at the terminus, and three or four other buds back of it, and you can easily locate the petals found in the grape. It is true that the grape bud is small in the autumn, but if you examine it under the microscope you will find the bud is all there, not only the terminal bud, but several other buds back of it. It is a theory that the whole next year's grape is locked up within those bud scales, and that all that is done next summer is to simply expand those layers and develop the whole shoot. The plant is all in the bud, and all the summer's work is simply to expand that work that was laid up the year before.

Mr. Edwards—We know that the buds that expand from the

raspberry, blackberry and grape grow fruiting buds next season, and we were puzzling how we could distinguish that those were simply fruit buds.

Prof. Goff—By their location. Fruit buds are what you call axillary.

Mr. Edwards—Do you have anything but branch buds on the raspberry? Are those anything in the world but branch buds that grow branches upon which the flowers grow in season, and is it not true that the grape has no such thing as a fruit bud at this season of the year, but a fruit branch bud may be there?

Prof. Goff—The branch is there, and the axillary bud is there also.

Mr. Hatch—Have you two buds in one, that is, two functions in one bud?

Prof. Goff—No, sir, we do not, but we have a leaf and a flower bud in the axle of the leaf. Understand, this shoot that is wrapped up in the bud scale is the same shoot that comes down in the spring, only it is in embryo.

Mr. Hatch—Take it in the case of the raspberry, would there be a difference in a bush from which you take a bud that is from the primary cane, or a lateral bud that has been induced by the pinch.

Prof. Goff—I do not think there would be any difference, unless in the stage of development, they might develop a little farther on the cans.

Mr. Hatch—Here, for instance, is a mature raspberry cane, and it is full of buds, and now these buds will expand and grow, we know that they will grow into branches next spring. We were not quite certain, some of us, but I believe it is true that the buds grow a couple of leaves, then there will be a branch, that is, a couple of leaves coming directly off this bud, right at the base of the branch.

Prof. Goff—Nothing comes out of the base of the bud, every bud grown on the cane will expand into a branch.

Mr. Hatch—Then every bud will necessarily be a fruiting branch.

Prof. Goff—Every branch of last year's cane, yes, is a fruiting

branch. Because the basal ones, they are the buds that make the shoots for next year.

Mr. Hatch—Then we have not on the raspberry a bud that is really parallel to an apple bud, that simply produces next spring no flowers, but will produce leaves.

Prof. Goff—Only the base buds.

Mr. Hatch—If you have got buds on last year's raspberry, they are probably flower buds, except the few basal buds?

Prof. Goff—Yes.

Mr. Hatch—Then you can really distinguish the rudiments of the flowers in the calyx, the stamens and the pistils, even in those?

Prof. Goff—In the raspberry, blackberry and grape the flowers are less developed than they are in the apple, pear, plum, cherry and strawberry, but the flowers themselves are easily located even in those.

Mr. Hatch—How far do you consider the matter with reference to the quantity of wood produced.

Prof. Goff—One fact is brought out very clearly about pinching, and that is that it increases the number of shoots.

A Member—How many canes do you allow to the hill?

Prof. Goff—Only four canes to the hill. I am very much in doubt whether it is not better to allow more.

Mr. Kellogg—Regarding the strength of canes to hold up the yield, are the canes that are pinched stronger than those that are not pinched, is there any difference?

Prof. Goff—Yes, they are stronger, but the others are strong enough so far, that is, we have had no trouble where we have not pinched, if anything, there is more danger of the canes breaking where they are pinched because they are more brittle.

Mr. Yahnke—Was there any noticeable difference in the fruit between the pinched and non-pinched?

Prof. Goff—We made that experiment last year, but owing to the blunders of an assistant, I could not use the figures.

Mr. G. J. Kellogg—I want to ask Mr. Edwards why he did not recommend more than one red raspberry?

Mr. Edwards—For general planting I think one good variety

is better than two or three, and the Marlboro that I recommended is medium, safe and is productive.

Mr. Hatch—Has any grown in sufficient quantities of the Cuthbert and the Loudon to say emphatically that the Loudon is better?

Mr. Herbst—We are growing about a half acre of it, and I must say that I do not consider it any better than the Marlboro, and for this reason, — it can not be picked as it should be picked until it is perfectly ripe, and when it is perfectly ripe and put in a box, it will not stand the shipment that the Marlboro will.

Mr. Kellogg—Our Marlboro raspberry last winter killed in the ground.

Mr. Adams—I have grown Loudon and Cuthbert. The Loudon is the hardiest by far.

Mr. Yahnke—I have discarded the Marlboro and think it is the worst berry I ever planted; one of my neighbors thinks it is the best. It depends a great deal on locality. The Loudon is probably the hardiest red raspberry we have got.

Mr. Edwards—I was not recommending a list of fruit for the market, but for the farmer and family and home market.

The President—There was a question asked of Mr. Herbst.

Mr. Herbst—It is hard to pick for the reason you can not pick them until they are dead ripe, they will come off, stems and all on the berry, if they are not ripe.

Mr. Osborne—It would be a long story if I were to tell you all the varieties I have had in the last sixteen years.

I have kept my berries back as well as I could in a shady place, kept them covered as long as I dared, and I will say that I cultivate the Warfield with the best result, and it is the best looking berry I have. I have not had any particular success with the Loudon berry yet.

Mr. Kellogg—Before this question of Loudon is passed I want to state we find no difficulty in picking. There is a proper stage to pick the Loudon and when picked at that stage it is in good condition to ship 500 miles.

President—In the very interesting session this morning there was one paper that was omitted in the Nursery session. The

Hon. Chas. Hirschinger is present now and we will ask him to present his paper.

HOW TO SELL APPLE TREES AFTER YOU HAVE RAISED THEM.

By Chas. Hirschinger.

The subject of "How to sell apple trees after you have raised them" should have been given to someone who has run clear of snaggs, sharks and dishonest dealers, agents and planters, and that certainly has not been my lot, as I have sold thousands of trees that pay has not been forthcoming, and if in all this broad land there is a nurseryman who has not been beaten by the tree sharks he is the man to handle this subject, not I. It is easy to sell apple trees and to sell all of the good ones of good varieties the nurserymen of Wisconsin now have on hand, but it is not so easy to know how to sell them and who to sell them to. You may say sell them to the man that pays the cash and takes all you have got, but such men are not always to be had and it is not at all according to trade rules. Thirty or sixty days after delivery is usually required and while the man or party we are dealing with usually has at least the appearance of honesty and any amount of business tact, how often do we find when too late, that we have been again nicely taken in, and we resolve then and there to be more careful the next time only to be again bambozzled by a more ingenious expert in the business and again we find ourselves left in the hole. The first trees I ever sold I paid 15 cent apiece for and sold at 20 cents each and warranted them to live the first year as per instructions of the nursery I was selling for. It happened to be after one of those winters that kills the roots of trees and not knowing all I might know about trees, I did not know that they were injured. Well, nearly all died and I had to replace the trees, but when I called at the nursery for trees the next spring to replace for dead ones, I was informed that not a tree could I get only by paying for them. I got out of that hole the best I could with a resolve never to warrant trees to live again,

only warrant them to be in good condition when they left my hands and I have kept that resolve to this day.

Later on I sold trees with the following guarantee:

We warrant our stock to be true to name; but should mistakes occur, we hold ourselves in readiness, upon proper proof, to refill the order free, or refund the purchase money of same or both; and while we use the greatest possible care to prevent mixtures, the above is to be the condition on which all stock is delivered.

I sold trees for a long time under this guarantee, but in the fall of 1886, a party from La Valle, Sauk county, Wis., sent me a small insignificant crab apple by mail and informed me that he had purchased two hundred Transcendent crab apple trees of me and that the inclosed crab apple was the kind I had sold him for Transcendents and asked me to pay him his money back and also give him two hundred Transcendents free of charge. I had never seen or heard of the variety of crab apples he sent me which he claimed he had got of me for Transcendents, hence I looked up the matter and called on him and found 192 of the Transcendents I had sold him alive and doing well, but also found quite an orchard of the small crabs of which he had sent me a sample. I told him that there was a mistake and that he never got the small crab apple trees of me but he insisted he had and I set myself to work on the task to find from whom else he had got trees. As he insisted that he had got none only of me I first went to the freight office to find whether any trees had been shipped to his address and found that none had been shipped to him, but found that a box of trees had been shipped to another party who failed to call for them and after the railroad company had failed to find the party to whom they were addressed they were sold to this same party that I had sold the 200 trees to, the trees had come all the way from Minnesota and they were cracked up to be nice and the best in the world, yet the fruit was not worth a continental. I went back to see my man and tried to convince him that he was mistaken about the matter but he insisted with dignity and apparent honesty until his wife said, "John, you are mistaken, you bought those trees at La Valle of the railroad company that were sold for freight charges." With a long forlorn look at his wife, John wilted, but I had learned a

lesson and determined to profit by it. I issued a new catalogue and changed the guarantee to read as follows:

We warrant our stock to be true to name, but should mistakes occur, we hold ourselves in readiness, upon proper proof, to refill the order free, or refund the purchase money of same; and while we use the greatest possible care to prevent mixtures, the above is to be the condition on which all stock is delivered.

I have sold under this guarantee to this day but cannot advise you brother nurserymen to do so, but the following statement I think should be made:

"We take the greatest possible care to prevent mixtures but do not warrant trees to be true to lable and should mixtures occur we will not be responsible for any damage" and the above is the condition on which all nursery stock is sold and delivered. I do not know of any Wisconsin nursery that sells stock under those conditions and it seems that it should not be necessary to do so, but experience teaches that not all the dishonest are to be found in the ranks of nurserymen and dealers, but you will find some saying low to take you in if possible. I sell trees to dealers and agents now, who have proved by their past conduct that they are honest with me and also with the customers they sell to, who will sell the varieties that I have on hand and I give them 30 to 60 days to pay for same after delivering. If I have a surplus of any varieties those I sell to anyone that will pay my price. It is an easy matter now to sell all nursery stock, especially fruit trees this year, grown in Wisconsin.

Sell apple trees that you raise yourself; that are adapted to Wisconsin; that have proven to be valuable for home use and commercial purposes. Sell them at a price that will let you live, and sell to honest parties that will pay for them, have but one price for all alike, and if nurserymen would all sell on the same principle with a uniform price so much better for all concerned. Selling one variety at 50 cents a tree another at 25 cents a tree, etc., of apples shows upon the face of it that you are a money grabber, ready to sell the people. The best way is to sell trees at a living price and don't try to sell the people. Don't try to make people believe that budded trees are better than grafted trees or that trees grafted on first cut or whole root are better than the

second cut for if you do those that have had experience will judge you that either you do not know any better or that you are trying to sell the people by misrepresenting the facts. I have known tree agents to carry two pieces of apple trees, one black hearted and the other clear white, representing that the black hearted tree was root grafted and the second one was a budded tree.

Motion to adjourn is carried.

Evening Session, Feb., 6th, 1900.

(Mr. Hoxie presiding.)

The Chair introduced Hon. S. M. Owens, who spoke as follows:

FORESTRY IN EUROPE.

I am expected to talk to you about forestry in Europe, at least I am on the program for that subject.

All of Europe pretty nearly is engaged in a very comprehensive, a very intelligent and very effective system of forest administration. France, Germany, Italy, Switzerland, Austria and Austro-Hungary, all have magnificant forestry systems any one of which we might pattern after with great advantage to ourselves and with great advantage to the country. In Germany I had but little opportunity to study the forestry question, about all I could do was to observe the communal forests that I saw in my travels by public and private conveyance. I noticed their thrift, how cleanly and nicely they were kept, how carefully they were guarded, how jealously and even sacredly they are protected from vandalism of all sorts, and it was encouraging and cheering to see such evidences of interest on the part of public authorities in forests there, particularly pleasant it was to me, because I had come from a country in which the public authorities seem to

have no care, consideration or thought of the subject of forest preservation or forest administration at all.

I am going to speak, however, more particulary of forestry in Switzerland, first, because I had better opportunity to observe forests and to learn the methods in Switzerland than in any other country, and aside from that the forestry question is more interesting in Switzerland than in any other. It is more interesting because of the natural difficulties of forest adminstration there than in any other country. Again, in Switzerland forestry, or forest laws are older than in any other country of which we have any record. As early as in the beginning of the 14th century, about 1330, they had forestry laws in Switzerland and the forestry laws of Switzerland at that time were enacted by reason of the fear that the people of Switzerland would soon be without fuel unless the forests were protected. The subject is an interesting one there too because of the difficulty of growing forests, the difficulty of protecting forests and the necessity of forests to that country. If that necessity existed here, we should perhaps see more interest taken in forestry than we do. In Switzerland forests are absolutely necessary to the preservation of the people, outside of the question of fuel alone. A little bare space cut out of a mount side forest in Switzerland, if left bare, may prove the starting place and the nucleus of an avalanche that will cost in life and property more in possibly five minutes time, than the forest administration of Switzerland costs the federation or the communes in a whole year's time. Wherever timber is cut on a mountain side, in fact, wherever timber is cut anywhere in Switzerland, it is cut under the most rigid regulations and restrictions. On the mountain side, if timber is allowed to be cut at all, timber of certain sizes must be permitted to stand, must not all be taken off. The stumps of the trees that are cut must remain, they must not be uprooted and destroyed that they may serve the purpose of the trees from which they came, serve to hold back the snow and ice to prevent the starting of the avalanche, which, if once started, no power but that of the everlasting rocks themselves that they meet with at the bottom of the vallay can stay.

It is recorded there in one valley that we rode through for some distance, the valley of the Jungfrau and Lauterbrunnen,

that an avalanche started there in May, 1879, from an elevation of about 7,000 feet, it came down the mountain side with such velocity, with such force, that by atmospheric pressure alone it destroyed forests on the opposite side of the valley from where it came down, 1,200 yards away. The avalanche of snow, ice and rock, did not strike that forest at all, but it was destroyed simply by the force of the atmospheric disturbance by the downcoming of the avalanche. You can form some idea from that of the prodigious power of things, and how absolutely necessary it is that those mountain sides shall forever be clothed with this protection against calamities of that kind. The federation of Switzerland owns no forest, the forest area, however, is very largely owned by the public cantons. A canton would be equivalent to a state in this country, the communes own about two-thirds of the forest area, and a commune would be equivalent to one of our counties, relatively speaking, private individuals own the balance, or about 30 per cent. of the forest, but the federation spends a great deal of money in aiding the communes and the cantons in the protection of forests. For instance, they build the retaining walls that are necessary to support the necessary amount of soil on the mountain, as well as on the barren places where forests have not heretofore grown. All of the forest cutting is done, as I said a moment ago, under the most exacting conditions and regulations. Those who own their own forests, those who own their own timber are under the same regulations precisely. A man has no right to cut his own timber except it is cut by permission of and under the supervision of cantonal or communal foresters, and these foresters, let me say, are men who are educated in that famous forestry school in Zurich, possibly the best in the world. They must pass a rigid examination, it must be demonstrated that they are absolutely competent to pass upon all the problems that will be presented to them in the cutting of timber, in the selection of proper timber to cut, in planting, re-growing, the preservation of forests, all those problems they must intelligently meet and settle. No political pull gives a man a position as forester in Switzerland.

By-the-way, in Switzerland they have no political pulls any-

how. If a man owns his own timber, he is allowed a certain amount of the timber for his family for fuel during the year, and that timber must all be used that he is allowed to cut. You see in driving along through the country, under the eaves of those quaint little Swiss cottages that many of you have seen, you will see there fire wood piled up very nicely under these protecting eaves, and with that firewood you will find little twigs, not much larger than a lead pencil, piled up in little bundles and stacked up with the larger wood all ready for the stove or the fire place. They are compelled to burn it up so cleanly, every tree they are allowed to cut. If they want timber for building purposes, they are allowed to cut so much timber for that purpose, and whatever is left of the tree that can not be used for building purposes becomes a part of the quota that that man is allowed for his fuel during the year.

Then provisions are made for the replanting of as many trees at least, if not more, every year, as are cut in each canton or each commune. Over 670 years ago they had forestry laws in Switzerland, because they were afraid that the fuel supply of Switzerland would be exhausted, and there is no coal in Switzerland, they must have wood if they have fuel at all, and they did that I say, because of a fear of scarcity of fuel. Now after so many years have passed, Switzerland not only has all the fuel she wants, but she is absolutely exporting more building timber and lumber than she is compelled to import, in fact, she imports scarcely any building timber of any kind. She does export some firewood and exchanges it for the better timber than she has, with other countries, better building timber than she has, but in the aggregate she is today, after 600 years, she is exporting more timber than she imports. In less than one-third of the time, in fact, in about one-sixth of the time, the United States, never in any fear of exhausting her fuel supply, has pretty nearly destroyed and consumed all the forests she had.

There is one reason why it is so easy for Switzerland to have this forestry system, rigid as it seems to us, one reason why the Swiss people will allow the state to come in and direct how they shall cut their own timber, how they shall dispose of their own property. You know we are very jealous of allowing the state

to do anything of that kind for us or by us, we say, if the state attempts to regulate the use that we make of our private property, that that is an invasion of private right and we will not tolerate it if we can possibly help it. We regard the state as a sort of antagonism, a sort of something that we created outside of ourselves that we have to stand in, the state is separated entirely, it seems to me, from the individual. In Switzerland the exact reverse obtains. I said to some of those Switzers, "Why is it that you will submit to this interference with the use of your own property?" They scarcely knew what I meant. "Why, you allow the state to come in here and say to you, you shall cut your timber so and so; you may burn so much of your timber, you may use so much of your timber for building, and no more." "Well, isn't that all right? What is the matter with that?" "Well, if we did that our citizens would almost rise in revolt, and say, 'This is our property, we will use it as we see fit, it is none of your business what we do with it.' Outside of that we should suspect that every man who came around, every government or city official who came around, had some sort of axe to grind, some sort of selfish interest, and we would be very suspicious of him anyway; in fact, we would not tolerate this thing." "Well, we can not understand why you have that kind of suspicion of a state officer. Yes, the state comes in here and regulates these things, but who is the state, what is the state? We are the state, we are doing this thing." There is that conception of the relation of the individual to the state in Switzerland that makes it possible for that little people in that rugged, craggy country, where both sides of the land can be farmed, after a manner, little patches here and there, because it is all on edge, that is why they accomplish so much; that is why they are so strong; that is why they are so absolutely invincible, that is why they are giving us the best example today of popular government on this earth. The man is the state. When the state official comes to him and confers about cutting his forest, that official is his partner in the business, and he says, we consult about how to do it. This is with reference to the greatest good to the greatest number. The greatest good not only for ourselves, but those who are to come after us, and this is true of everything else as well as the forests.

Traveling up one of those beautiful forest roads one day, with a driver who could speak English, I asked him about the highway we were traveling over, and I said, "Whom does this belong to, who built this road, who is responsible for it, who keeps it in repair?" "Well, we do." "Well, but who are we?" "The state, and we are the state, ain't we? This is ourselves." "So the railroads, the state does not own the railroads except as we are the state and we own the railroads." And then, if I had the time I would like to speak about that magnificent system of theirs by which the people really, absolutely through their referendum, the people who are themselves absolutely responsible for the shortcomings of their officials, if an official does wrong they do not blame the official, they blame themselves, they put him out of the way and see that they get a good man in his place. There are no political parties to interfere with. You know they do not fight their questions of public policy there upon party lines, they do it on measures. Under this conception of the relation of the individual to the state the forestry law and other laws, or different interest put into the keeping of the state can be better taken care of under that dominion than they can be taken care of under individual ownership or individual control. It is true in Switzerland and in all other countries too, that the publicly owned forests are in a much better condition, the present growth of timber is greater than in the private forests, and this is also true of other interests. They will say without an exception that their railroads are much more satisfactory to the people under government control than under private control, they say so of the street railways in their cities and of the electric light plants; in fact, Switzerland is perhaps the best example of state socialism on earth today.

Switzerland has several objects in view in her forestry administration. This protection that I spoke about is necessary to the equalization of rainfall, the conservation of moisture and the prevention that forests are to sudden swelling of those mountain streams that change from a little river way up there almost in the clouds to a roaring devastating torrent at he base of the mountains in a few minutes. Then the fuel question is a very material one indeed, the building question a very material one indeed, be-

cause they build very largely of timber; but the consideration that seems to be uppermost in their minds all the time, and the one that seems to be held almost sacred by them, is the demands of posterity, the thing I think we never think of at all. I know we do not, if we did, we would never allow our forests to get into the condition they are in. There is another thing that gave me very profound respect for the Swiss people, and it seemed a little peculiar to the American people, because we think very little about posterity; what we want is to get what we can ourselves, and let the devil take, not the hindmost, but posterity. That is one reason why I like to talk forestry, because the forestry promoter is an unselfish man who is working for the future, who does not expect to plant this spring and reap this fall, he does not expect to plant and reap in five or six years, but when he plants forests he does not expect to reap the harvest himself only, unless he is a young man and expects to live to be a very old man. But these people are preserving their forests, see that they are re-grown that posterity, those who may come after them, may have forests too, and that has been in force now 600 years, and Switzerland is better forested to-day, they are paying better revenues to the communes and the cantons and better to the private owners than they ever did beforer in the world, and yet that is an old country. Where will we be unless we change our system before we have settled this country one-third, — yes, one-fifth as long as Switzerland has been settled. For Switzerland was an old country six hundred years ago, when her forestry laws were enacted.

A large area of Switzerland is devoted to forests too; something like 20 or 25 per cent. of the entire area of Switzerland now densely populated, I will say, ten times as densely populated as Wisconsin, and yet about 22 per cent. of the entire area is devoted to forests and that area is growing no smaller.

Now in the interest of brevity, let me say a few words and draw a few comparisons between our own treatment of forests and of Switzerland, and let Switzerland, if you please, typify all Europe, because in other countries there is quite as much attention paid to forestry as in Switzerland. In all those countries there is a conservation of timber that if practiced in this country

now, would be equivalent to growing large areas of forests every year. The fact that everything is consumed or used or utilized in some shape, even in these little twigs for fuel. Coming down here today I passed by brush piles after brust piles of trees that had been felled and cut up just as far as they could cut any valuable timber for railroad ties, or anything, the balance of it left there to rot or to take fire next summer, and not only burn that timber, but burn the soil and make it impossible for the forests to re-grow where those brush piles now are. Thousands of them I saw just in this little day's trip; you can not find one such thing as that in all Europe. Those brush piles would all be utilized, they would all be made fuel of, and the larger timber would be utilized in one way or another. That conservation of timber, that economy in its use, would go a long ways towards utilizing the full value of our forests if we practiced it in this country.

I have often thought that if Columbus and the other early discoverers of the American continent had been Chinamen and had discovered the Pacific Coast first and that had been the settled portion of this country, we would have exhausted that little narrow belt of timber of the Pacific Coast, then as population came eastward, they would have struck those great barren plains, they would have cultivated at once a love for the trees and consciousness of their importance, of their necessity; that would have made them tree planters from the very outset, they would have had an appreciation, an estimation of trees that they could not by any possibility have starting in on the other coast of our country that was heavily wooded, and wooded all the way back and so densely wooded that the timber became an enemy to man, and for years and years there was an absolute enmity between the man and the forest.

I was born in Northwestern Ohio, that heavily timbered country, so heavy that anything but an oak tree less than four feet through was called a sapling, where we had black walnut 6 feet 3; those great lordly hickories 3 and 4 feet and towering amost to the stars, and those beeches too, beautiful straight fellows, how I used to love those beeches! We had all those trees in great quantities, very beautiful they were too, the ash and the maple,

the linden and all those trees were so beautiful, and yet a farmer when he cleared his land and cleared a place for his house, he he would not if he could help it, have a tree within twenty rods of his house. But as time passed on another enemy came to our forests, and that was greed, pure and simple. Railroads and other means of increasing popuation made our timber very valuable and then certain parties bought up great timber tracts simply that they might destroy them. If we had come the other way, with love and friendship for trees coming with us, then by the time we struck these great forests in Minnesota, Wisconsin and Michigan, that are now almost gone, then there would have been a love for trees that would have conserved them, we would have looked after their re-growing, and we would have had no such problems confronting us as we have now. But this process began in the east and began only a little over 100 years ago, in fact it has not been 100 years, it has not been fifty years, since timber was cut as clean for commercial purposes and we had what seemend to be an inexhaustible supply of it; it did not seem possible that timber could ever be scarce. In Ohio they felled acres and acres of those great trees and all they got out of them was the ashes that came from the burning. I can remember when they used to carry wagon loads of ashes for which they would get 7 or 8 cents a bushel and get 4 or 5 bushels from a four-foot tree—anything to get rid of the stuff. Then after that feeling passed away and that necessity passed away, then came the greed of man to cut timber without any reference whatever to what was left, without any reference to regrowing, without any reference to posterity, without any reference to anything their own immediate gain. In Wisconsin now they are practically forestless, so far as commercial timber is concerned. I saw only a few weeks ago in one of our daily papers an estimate that the Minnesota forests, at least all of the timber tributary to the Minneapolis lumber district, would be exhausted in five years, and already lumber syndicates have gone to the Pacific Coast and there are buying thousands of acres of land. Michigan is now pretty nearly lumberless, entirely so except that they raft logs over from Canada to saw them there, but many of those mills this year are being abandoned. In Minneapolis in a few years our

mills must be shut down, and how philosophically we regard that too! The same daily paper that I spoke of says, "Well then, these people who are now employed, probably twenty-five or thirty thousand, in the lumber district, will find new employment, that is all; these mills will disappear gradually, and gradually these people will go into other vocations." No thought there you see of regrowing these forest, no thought of cutting these forests intelligentlty so that we might have a continual harvest of lumber and of timber all these years and all the years to come. No. What is the remedy? Why, our laboring men will find other employment, our mill owners will go to the Pacific Coast, there to repeat the devastation, the destruction, the vandalism, that they have practiced ever since they came upon earth. I am doing all that I can, and I am sending out warning signals into Washington and Oregon now, and I wish all you friends of forestry would do the same thing, and implore the authorities of Washington and Oregon, to not permit that treatment of their forests.

Let me read you this one little extract from a German law in reference to the preservation and protection of forests from fires. "The removal of felled wood must be accomplished by the end of April, and neither waste wood, twigs or bark shall be left lying. If they are so left in private forests they may be removed at the expense of the owner."

For years I have been advocating the compelling of our lumbermen to do practically the same thing in this country. Let them cut the timber that is ripe and ready for the harvest, that is all right, it ought to be cut and we know it. We need the fruits of the forest, but let them clean it upso that there will be no danger of fire, then let the forests alone and they will regrow, that is, the timber they leave will be ready to cut in 15 to 25 years, others will come along afterwards, in 40, 50 or 75 years there will be a regrown forest there again, and that may be again duplicated, and so we may have forests for ourselves and for posterity. Let us say to the Pacific Coast authorities, "Do that thing now, do not let these people come in here, buy up your land, hundreds of thousands of acres, and devastate and destroy as they have done with us, it is the last stronghold of King Forest in all this land. There are some left on the Pacific Coast, some

in the South, but they are going very rapidly, and going exactly the same way others have gone.

I am here to plead against any longer practicing the greatest national crime ever committed since Adam delved and Eve span in the United States of America; that crime has been committed and is still being committed. Why my friends, I do not know how you feel about the subject, and I do not care, but I am going to say right here, that if this government were spending now one dollar for every ten it is spending to acquire territory that we do not want, have no use for, we would be building monuments in the halls of posterity, that would make it rise up and call us blessed down to unnumbered generations. (Applause.)

There is no subject in my estimation today so important in this country as this forestry question; there is nothing that should so interest our lawmakers, there is nothing that they should so profoundly study, there is nothing so vital to the interest and welfare of the people as that of the conservation, the preservation, the re-growing of our forest. Too late now to undo all the wrong that has been done, but is is not too late to begin an administration that will redound to our honor, will honor us, will honor our flag, if you please, more than we can honor it in any other way that I know of, except stopping the conquest of people. Let us do that, and then we will begin at once to realize an advantage, not in dollars and cents, but we will begin to realize what a glorious thing it is to have government, state, county, if you please, interesting itself in this magnificent work of forest growing. Let us learn to regard the growing of forests as we do the waving grain, as we do the strawberry, or the apple orchard, let us say what a beautiful thing it is, what a useful thing it is. And let us remember this too, — it is estimated by some of the best geologists of the country that the country's supply of coal will not last over fifty years, no one ever pretends to put it at over 150 years, and 150 years is not very much after all, it is only the lifetime of two men of 75, it is not much. Let it go, then what? You can not restore your coal, there is no way that we know of to regrow coal, but the Almighty has decreed that this shall be the home of hundreds of millions for years and years to come; it can not be, my friends, unless you grow the forests that will

make the fuel and the building material for those people who are to come after us. The coal will go, the iron will go, all those things will go and it can not come back to us, it can not be restored by man. There is nothing left for us but forest trees that we can grow, that we can foster, that we can protect, and let us do it, we must do that if we are patriotic. Why, it is the loftiest patriotism you can conceive, is this growing of trees, not for ourselves, but for those who come after us.

FORESTRY, HORTICULTURE AND LANDSCAPE GARDENING.

By Ernest Bruncken.

There are three occupations, arts or professions which have to do with the raising of trees: Horticulture, landscape gardening, and forestry. Pretty nearly everybody understands what is meant by the first of these. Horticulture treats with the growth of fruit, vegetables and flowers. So far as the subject of the horticulturists' care consists of trees, it is trees in the orchard, apples, plums, cherries, possibly walnuts and hickories, or in the south the orange and the almond. Everybody also has a pretty fair idea of the nature of landscape gardening. That has to do with the laying out of pleasure grounds, from the metropolitan park system to the lawn surrounding a modest dwelling house. When the landscape gardener deals with trees, he selects them for their beauty and power of giving shade. But when it comes to the province of the forester, the third of the occupations concerned about growing trees, there is a strange confusion in a great many people's minds. They can not distinguish it from the other two. They imagine that it is the art of planting and caring for trees, and that consequently the cultivation of orchards, and the planting of trees in a park, are branches of forestry. Even the setting out of shade trees along a country highway or a city street is sometimes believed to come under the head of forestry, and consequently some cities in this country

have officers known as city foresters. These fuctionaries have nothing whatever to do with forests, but their duty is to see that the shade trees along the city streets are not eaten up by insects or maimed and deformed by friends with saw and pruning shears.

This strange mistake so widely entertained about the nature and aims of forestry does untold injury to the cause of reform in the methods and policy of treating the forests of the United States, and ought therefore to be combatted until it is entirely eradicated from the public mind. It is on account of this misconception that people often expend their energies on measures which they imagine to promote forestry reform, when in reality they have nothing whatever to do with the subject. The injury done in this way is largely negative. It keeps people from doing something better. But there are also positive injuries. The men who are most directly and strongly interested in reformed forestry, are those who get their living out of the forests, in other words, the lumbermen. But if they are imbued with false ideas about the meaning of forestry, they cannot be expected to interest themselves in the subject, and this of course deprives forestry reform of its most natural and most influntial allies.

I want to impress this proposition as widely and as deeply upon people's minds as it is possible to do: The planting of and caring for shade trees in parks and along highways has nothing whatever to do with forestry. Consequently measures tending to promote this object, however, praiseworthy in themselves, do not promote forestry reform. For instance: The institution of Arbor Day is an excellent thing of the highest educational value to our children. So is the beautification of school grounds by the planting of trees and shrubs. I do not wish to say a word to discourage those things. I hope the time will come when all our country roads shall be bordered by rows of shade trees, and our school grounds and public squares surrounded by plantations of trees and shrubs, by lawns and flower beds. But when all that has been done, nothing whatever will have been gained thereby in the matter of forestry reform.

Let us undestand tis thing plainly: Forestry is nothing except the care, not of individual trees, but of forests, primarily for the purpose of utilizing the timber and other material that can be taken from them, and secondly for the purpose of preserv-

ing the climatic and other indirect advantages to be derived from the existence of forests.

Now some of you may possibly ask: If that is so, why do you speak to us about forestry? What have we, as horticulturists, to do with the matter?

The question is legitimate but the answer easy enough. It is quite true that the persons most interested are lumbermen and owners of woodland in general. But next to them there is not a man, woman, or child in this state and this country, who is not deeply interested; for the forests supply us with one of the prime necessities of civilized life, a necessity as indispensable as the products of our farms and our mines. I might say therefore that I talk to you as citizens, as Americans deeply concerned in all things relating to the public welfare, but I have a still better reason why I should speak to you about forestry. Next to the lumbermen, you horticulturists and your friends, the farmers, have the most direct interest in the proper treatment of our forests.

There is not one among you who has not heard more or less about the beneficial effects forests exercise on the natural conditions of a region. You know how they insure the permanence of springs and water-courses; how they tend to moderate excessive heat in summer and excessive cold in winter; how they help to break the sweep of those drying winds which are such a scourge to the people of the treeless plains of the west; how they prevent the washing away of soil from steep hill sides and the consequent sanding up of valleys. All these things are pretty familiar to all of you, and they constitute so many reasons why horticulturists who depend on propitiousness of climate and fertility of soil, should be interested in forestry.

But it is not on these things I wish to speak to you. Many of you, like most farmers in this state, are the owners of timber lots of more or less extent, and are pretty well aware of the value which these add to your property. Some of you, also, may have planted some acres of land with forest trees, for one purpose or the other. Now, what I want to draw your attention to, this evening, is the difference between the care of an orchard or a nursury plantation on the one hand, and a forest on the other.

The fundamental distinction between these two forms of growing trees can be expressed in this sentence: The orchardist, the nurseryman and the landscape gardener deal with the individual tree; the forester has to do with trees in masses. You all know how important it is, in managing an orchard, first to select the proper varieties; then, to take care that the trees you set out are well-grown, healthy and strong; what infinite care it is necessary to take in the planting of each individual tree, if you would insure success. After the orchard is planted and the trees growing, the same care for each specimen must still continue. Each tree must be properly pruned; it must be protected against insects and fungi by spraying and other means. The soil in which it grows must be carefully protected, mulched and fertilized. In some cases each tree must be guarded against the cold of winter. Similar care of each separate tree must be taken by the landscape artist who plants shade and ornamental trees in parks and pleasure grounds.

For the forester, such minute care of each tree is entirely out of the question. If his forest is at all large, it would be physically impossible. If it is small, the expense would doom the enterprise to financial failure, and no forest management, by private parties at least, is rational and successful unless it pays in dollars and cents.

How then does the forester manage to gain those objects for which the horticulturist takes such great pains with each tree—How does he make sure that his trees grow healthfully and live a long and useful life? He manages to make the trees protect each other from most of the influences against which the park and orchard tree must be guarded by the hand of man. This he brings about by creating what are known as forest conditions. Forest conditions prevail in a plantation of trees where the individuals stand closely enough together to have their branches interlace, thereby the ground becomes shaded, more or less so according to the nature of the species composing the wood and the age of the trees. Where these forest conditions are perfect, in a forest composed of hardwood trees, there ought to be very little vegetation of grasses and herbs on the ground. It ought to be covered thickly with dry leaves. In coniferous forests, the

ground will usually be covered with a carpet of moss. But the moment the grass comes up thickly, it is a sign that the crown-cover is too much broken, that the ground is not sufficiently shaded, and that danger to the forest is in sight.

The objects to be attained by the maintenance of a perfect crown-cover are of several kinds. The principal one is that the fertility and moisture conditions of the soil are preserved and improved thereby. The shade maintained by the trees reduces evaporation very materially, so much so that the gain counterbalances the loss occasioned by the amount of rain fall which is intercepted by the leaves and never reaches the ground. This diminished evaporation keeps the ground constantly moist. It permits on the one hand a larger proportion of water to percolate the ground and feed the springs and wells. On the other hand it enables the trees to maintain a constant supply of the various solutions of mineral salts which they need for their growth, and which they could not get if the ground became too dry. The ways in which evaporation is reduced are numerous. One of them is by keeping the air cool. Thereby the point is reached oftener and for longer periods, when the air is fully saturated with vapor, so that evaporation must cease. You all know that warm air can absorb greater quantities of vapor than cold air. Another reason why evaporation is retarded, is the stillness of the atmosphere in the forest. Where the wind blows strongly the saturated air is constantly removed and new dry air with a hunger for watery vapor put in its place. A third reason why the ground remains moist is the covering of dry leaves, which prevents evaporation to a great extent. If instead of being so covered, the ground sustained a crop of grass, every spear would act as a pump to take moisture out of the soil.

Now you can see one of the reasons why a forest can flourish without the minute care bestowed on each tree which the horticulturist finds necessary for his trees. What you try to do by mulching and cultivating and sometimes by artificial irrigation, the forester does by making his trees grow so closely together that they keep the ground moist and the atmosphere cool.

But there is another important reason for making forest trees stand close together. The forester's purpose is to make lumber.

Consequently it is to his advantage that his trees should grow long, heavy trunks and no more branch wood than is necessary to give a crown large enough to nourish the tree sufficiently. If trees stand far apart, they spread their branches widely and put most of their vigor into developing a crown. In a close forest, the branches remain few and small, but the trunk grows up tall and straight in order to catch the light that comes from above. The forest-grown tree has little beauty, but plenty of timber, and that is what the forester wants. The tree that grows isolated on an open lawn, or in a small open group, is a much more beautiful object to look at. It is short-stemmed, and you could not get much lumber out of it. But the full, wide-spreading, symmetrical top is a delight to the eye. The landscape gardener, therefore, likes to have his trees stand far apart. He cares for ornament, not for utility.

If you want to grow lumber, there is another reason why your trees must stand close together: Not only the quantity, but also the quality is improved thereby. As you all know, every branch that comes out of the trunk of a tree means a knot in the lumber when the logs are cut up into boards. The older and larger the branch, the worse the knot. If you had to deal with but a few trees, you could guard against this evil by pruning all superfluous branches. But how is that possible in a forest with many thousands of trees? Again, the forester is obliged to make his trees perform this service for each other, and he does this by making them grow close together. Thereby not only are a few branches ever developed, but many of them are caused to die, wither and fall off because they do not get enough light to grow. The closer the trees stand together, the more effective will this natural pruning be. It is of course principally the lower branches which are subject to this process, because they are in the deepest shade, and that is precisely what the lumberman desires.

There is no group of trees which is more conspicuously affected by the closeness or openness of its stand than the carious conifers. You have all seen in some garden or park large specimens of the Norway spruce, with beautiful branches, spreading widely and sweeping down to the very ground. Such trees forming as they do a perfect pyramid of green, are very beautiful in-

deed, and the landscape gardener loves to plant them on some wide stretch of lawn, to embellish his picture. But the forester has no use for them, for their lumber is knotty, almost worthless in quality and little in quantity. Now put the same species of tree in a close stand in the forest, and each will tower high up in the air without a branch and only far above your heads do you see the moderately sized crown of branches. It is not such a fine sight by far, than that pyramid on the lawn, but a great deal more valuable in dollars and cents.

Here then you have one of the differences between the way in which the horticulturist and landscape gardener treats his trees, and that in which the forester handles his charges. But there is another important distinction which it is necessary to understand in order to appreciate the nature of forestry operations.

Fruit trees and ornamental trees are, generally speaking, the product of the nursery. There they have grown from seed and been tenderly cared for in their earliest infancy. There they have been transplanted one or more times, until finally they have found a permanent place in the orchard or park. The forester also sometimes resorts to nursery-grown seedlings; but that is in extreme cases only, when the object is to create a forest in a place which is entirely destitute of trees. Even there he will, if circumstances are at all favorable, prefer sowing in place to planting. But ordinarily, when we speak of reforestation on a large scale, we have in mind tracts of land which within a few years have been stocked with trees, and where a more or less considerable number still remain. The timber crop provided by nature has, in this country, been harvested, usually, without regard to the reproduction of the forest. But when, in the future, our forestry shall be conducted upon rational principles, the cutting of trees will be done in such a manner that a new crop of trees will spring up in the place of the old ones without the need of artificial planting. How that can be done, this is not the place to explain. It would take far more time than you would be willing to give me. But this principle I beg you all to bear in mind, as one of the essential facts in all discussions about forestry reform: To maintain and renew our forests, planting is necessary in exceptional cases only. Ordinarily, they are reproduced, after each harvest of timber, by natural regeneration.

This principle is so important for the reason that the public mind, believing that reforestation is equivalent to replanting, is often appalled by the supposed magnitude of the task. I have, even within the last few years and after all the discussion that has gone on about this matter, heard intelligent men flout the idea of reforestation as an impossibility, simply because they could think of no way of reforestation except by the setting out of nursery trees, at an immense aggregate cost and with doubtful probabilities of success. Naturally, persons in such a frame of mind are little inclined to promote measures of forestry reform, and if they happen to be members of the legislature, they may prove serious obstacles in the way of forestry bills. Therefore, never forget that forestry does not mean planting nursery trees.

I have spoken of the great difference between forestry and horticulture. But it will not do to dwell too much on this difference. After all it is only such a difference as may exist between brothers. You can tell them apart easily enough, but the same general traits appear in the forms, faces and manners of all of them. Therefore the friends of forestry reform have a right to expect the sympathetic cooperation of their brothers, the horticulturists, and their state association. The farmer, the horticulturist, the lumberman and forester, are each engaged in producing one of the most important necessities of civilized life. What benefits one, must of needs redound to the benefit of all the others. A rational system of forest management in this state and country will assure to the horticulturist favorable conditions of climate, soil and topography. It will provide him, in common with all other people, with a stable and permanent supply of lumber and wood, which without such a system must become precarious in the very near future. Surely, these are two benefits which ought to make every one willing to contribute his share in spreading a proper understanding of forestry among the people. For in our country no reform is possible unless it has the co-operation of the people. That is the reason why I have ventured to appear before you for the purpose of elucidating to some extent the real meaning, nature and importance of forestry.

Prof. Goff is not with us this morning, but he has kindly sent us his paper, which Mr. Hatch has consented to read.

COMMERCIAL PLUM GROWING IN WISCONSIN.

By E. S. Goff, Horticulturist to Wisconsin Experiment Station.

Can the growing of plums for market be made profitable in Wisconsin? This is a practical question that should interest all our fruit growers. If it can be, many of us would doubtless take advantage of the fact, for reliable and profitable fruit crops are not so numerous in our state that we would not gladly welcome a new one.

If we attempt to analyze this question, it separates naturally into two other questions, viz., 1st,—Can we grow the fruit? and 2nd,—Can we sell it after we have grown it, at profitable prices? Our experience at the Experiment Station enables me to answer these questions in a measure, while the experience of others furnishes additional evidence.

First:—Can we grow the fruit? The cultivated plums include a number of botanical species, which differ materially in hardiness and other qualities. The large blue or yellow plums that have been common in city fruit stands for half a century or more, belong to a species that was early imported from Europe and that is grown with more or less of success throughout the eastern, southern and Pacific states. The flower-buds of this species are tender in Wisconsin, and while they often escape destruction in the southern and eastern portions of our state, they are not to be depended upon in any but the most favored locations. This European species, botanically known as PRUNUS DOMESTICA, cannot therefore be commercially grown to any large extent in our state.

The more recently introduced Japanese plums, PRUNUS TRIFLORA, that are so rapidly flooding our markets with their showy but generally inferior fruit, are little if any more reliable in Wisconsin than the European species, and, at present at least, should not be planted commercially. The Wild Goose Plum, that is grown so successfully in southern Illinois and Missouri,

and is so extensively shipped to the Chicago market in July, represents a third species known botanically as PRUNUS HORTULANA. This does not fruit well at Madison more than about one year in three, owing to the tenderness of its flower-buds. The Chicasa plums, PRUNUS ANGUSTIFOLIA, judging from the varieties we have grown at the Station, are more reliable than any I have yet mentioned, but these and also the Marianna plum, which represents still another species, were badly damaged the past winter. So far, then, all seems to be negative. And yet the largest crop of plums we have ever grown at Madison we harvested the past summer after the most disastrous winter we have ever known. This crop of plums all came from varieties of the northern native plum, PRUNUS AMERICANA. We have here a plum that is practically "iron-clad," that has not failed to give a crop of fruit since 1894, and of which the better varieties sell readily in our markets at paying prices. Here is a plum that can be grown, in its different varieties, on every farm in Wisconsin, and that, with proper culture, may be depended upon to produce a crop almost every year.

This brings us to the second question: Can we sell the fruit? I answer, yes. We have sold the fruit readily, and in considerable quantities, at prices varying from $1.00 to $1.50 per bushel and occasionally at higher figures.

The market for this class of plums will undoubtedly improve, as the best kinds, like the Surprise, Wyant and Ocheeda are more extensively grown, as the fruit is marketed in better shape, and as the people learn to distinguish between it and the stigmatized "wild plums." But we should remember that it is not the fruits that sell to the wealthy few at fancy prices that will ever yield us very large returns; it is rather those that we can sell at a small profit to the millions, at prices that they can afford to pay, that must yield us our fortune, if we ever get it from fruit growing.

The Americana plum is exactly this fruit. We can depend upon it, for it is hardy and productive; we can grow it cheap, because we get a crop every year; we can sell almost unlimited quantities of it, because we can afford to sell it at prices that the people can afford to pay.

I do not wish to be called an enthusiast, and I certainly

would not be held responsible for losses incurred through following my advice, and yet it is my conviction that the judicious planting and cultivation of the choicest Americana plums may be made profitable in Wisconsin, both as a home market fruit and for shipping. Please to note, however, that I use the word "judicious," which means "according to sound judgment."

I would not advise any one to undertake plum growing who is not willing to give careful attention to the selection of varieties, the culture of the trees and the marketing of the crop, and this will necessitate some experimenting, and in most cases some mistakes will be made. I would plant cautiously of varieties that yield large fruit of good quality, and of which the trees are productive. I would group these trees with reference to their time of bloom so far as I could gain knowledge on this point; I would cultivate or mulch the trees well; I would protect them from the curculio by the jarring process until we find a better method; I would thin the fruit on over-bearing trees; I would pick the fruit when well-colored and a little hard; I would pack it artistically and conscientiously in rather small handled baskets, and would experiment considerably in selling it, using printed matter to call attention to the uses to which it is especally adapted. If we spend as much mental energy in our plum growing as we must in any other business to make it successful, I believe we shall be abundantly rewarded.

It would be easy to figure out very large profits by computing the possible yield per acre from the amount of fruit that certain trees in our experiment orchard have borne during the past five years, but such computations are always more or less delusive. The days of fabulous profits in fruit growing are probably over, and it is perhaps well that they are, for they always provoke imprudent investments that bring only disappointment in the end. What is vastly more important is to find and to grow those staple fruits that yield a living profit every year. The Americana plum is such a fruit whenever we choose to make it so by meeting Mother Nature half way.

ORIGIN AND HISTORY OF THE SURPRISE PLUM.

By Martin Penning, of Sleepy Eye, Minn., Its Originator.

The following seeds were planted seventeen years ago: De Soto, Weaver and a few Miner. Out of the lot I procured the Surprise. Two years later I transplanted the trees. There were about one hundred trees in all in 1886; most all the trees bore plums. There were many kinds, but not one De Soto, Weaver or Miner in the whole lot. There were some very large plums, which were poor in quality and a thick skin. In the fall of 1886 I went through my plum trees to find out if I had anything of value. I found one tree that had a dark red plum. I at once sampled it and was surprised at the fine flavor, large size and fine appearance of tree and fruit. So I thought I would name it the Surprise. I have three other quite good plums from the same seeds, but they are not of special value. I find the Surprise perfectly hardy in Minnesota and an annual bearer. One of the best market plums I have, is a very good keeper, prune shaped pit, and plum will peel when fully ripe like a boiled potato. It ripens from the first to the tenth of September. Tree upright and a fast grower. The Surprise belongs to the Miner group. The flesh resembles the Miner but is firmer and better in quality. I have several seedlings growing from the Surprise. This will be the second generation, and I may get something superior to the Surprise. Let us keep on planting seeds of the best varieties and some one will find perhaps a better plum. We must not sit down contented with what we have accomplished. We want and must have something better.

I hereby wish my Wisconsin friends a pleasant and profitable meeting. I was a Wisconsin man myself from 1846 until 1865, in Ozaukee county. It always interests me to hear from my old Badger state.

VALUE OF NATIVE PLUMS.

A Minnesota Fruit Grower Who Believes in Them.

One of the most interesting papers read at the recent annual meeting of the Wisconsin Horticultural society was the following one by Hon. O. M. Lord of Minnesoa City, Minn., who is a well known and practical horticulturist:

In this practical money getting age value is measured by the gold standard, but the word has a much broader meaning when applied to many of the products of the farm, that add so much to our pleasure, comfort and real happiness. Our first and main efforts are directed to food products, as they are absolute necessities. If we have a surplus of these, we seek a market for the money value of the product and exchange for luxuries, and whether these are obtained from foreign lands or nearer home none are more desirable or more eagerly sought than fruits.

Too many farmers consider fruit a luxury. It should be classed as a necessity among our food products.

If a little money is grudgingly given for apples, grapes, plums, berries or other fruits, a little labor, time and forethought would save the money and produce an abundance for our own use and perhaps a surplus. In considering the value of fruits, we are willing to concede that the apple is king, but it must be acknowledged that it has a hard struggle for supremacy in Minnesota. This is not its natural home. But the plum, our plum, the native plum, is on its own ground. It appeared here long before we came, and as we appreciate its value, it is here to stay. The basis of its value is that it is at home in our soil and it is unharmed by all the vicissitudes of our variable climate.

We cannot say as much of other valuable fruit trees. It responds bountifully to cultivation, and its fruit contributes much to the pleasure, health and enjoyment of those who are favored with its use. The prune belongs to the plum family and is of great commercial importance, and has become a food or luxury in thousands of homes, where only a few years ago it was un-

known. Twenty-five years ago none were exported from California. Last year the exports were 15,000,000 pounds, or nearly 8,000 carloads. California is no better adapted to the production of prunes than is Minnesota to native plums. The prunes had to be introduced there. Plums are indigenous here, and we as cultivators, when we realize their possibilities, will find them rivaling their cousins in domestic use. In addition to their economic value on our farms they are gaining favor and coming more and more into use in all our large cities and towns. J. W. Kerr, the largest grower of plums in this country, says in regard to our natives: Another year has furnished strong testimony as to its increasing value. Nature has endowed the trees with hardiness that makes them proof against climatic changes, while skill and intelligence in cultivation are developing size and beauty and quality, that ranks some of the best varieties as high for any purposes, as that of either the disease breeding European or the uncertain short-lived Japan, and though some horticultural papers decry their merits, as a rule, those who are loudest in their denunciations know the least concerning them, and that successful plum growing in this country, largely depends upon the possibilities of the natives. Prof. Goff of the Wisconsin university said at the meeting of the American Pomological society that the richest and most delicious quality he had ever tasted had been found among the native plums. Though some of them are small in size and acid and astringent, there are others that leave hardly anything to be desired and are adapted to different uses, as jams, jellies, preserves and to dessert use, and to the environment found in this country, that is not possessed by anything that has ever been imported. Last winter taught its own lessons of their superiority for this country.

Prof. Craig of the Iowa College at the last meeting of the Iowa Horticultural society said he considered the native plum one of the most important and valuable fruit products of Iowa. These statements may be applied to Minnesota with much force, as a fair share of the varieties, they would specially recommend, originated here or near by, and should be emphasized as at home and entirely reliable.

This is as high authority as we need to quote, in regard to the

appreciation of the native plum and to substantiate the claim to their superiority and value. But to narrow down this value, to the money standard, we can come nearer home for testimony, even to the markets of the Twin and other cities. A fruit grower of Merriam Park last year sold his whole crop at $2.70 per bushel. Another of Mendota sold a large crop; the lowest price received was $1.50 per bushel. Other growers received from $1.50 to $2.00 per bushel. While the retailers and peddlers received from 8 to 10 cents per quart during the whole season. These prices indicate the commercial value of the native plum, but who will attempt to limit their value when grown upon our own grounds, gathered by our own hands, and utilized as a delicious food or an abundant luxury and displacing much of the far fetched, foreign insipid stuff for which we pay money? It is in the interest of the lot holder in town, and the farmer in the country that I would urge the planting of these trees, not only for their economic value and as a source of luxury, but to adorn the home with one of nature's most beautiful, bountiful and useful products. That this society takes an interest in this line of our products is shown by the call to have something said of its value. This thought may have been stimulated by the remarkably fine exhibit of plums at the last fair, where 100 or more varieties were shown. This large exhibit was brought out measurably, through the liberal modification of the rules of the Horticultural society, though several growers that have formerly exhibited made no show. Had they done so the number of varieties would have been nearly doubled. While the show at the fair attracted wide attention as a whole there were several new kinds brought to notice that are comparatively unknown, which are entitled to special notice, and when propagated for sale, which they should be, will be found to compare favorably with the best from Iowa, which state now claims the honor of introducing more of the best varieties than any other state. There were several crosses of standard varieties exhibited at the fair, as new ones, or seedlings that can claim no special merit of the parents, but among the new seedlings are some of great promise, of yellow color, of large size and fine appearance. The Witman plums, Nos. 1 and 2, attracted much attention. Mr. Parker's

plum took first premium as a seedling, never before exhibited, seeds having been selected from a collection of the best at the world's fair in Chicago. A very attractive, large, red plum was shown by Mr. Hawes, who considers it the very best for market. Also one by Mr. Stubbs, who is equally confident of superiority. Another by Mr. Krays of Elk River, which he names the Gray, and which he desires to introduce to general cultivation. When these varieties and probably others might be named, are added to the list of standards, such as Surprise, Atkin and Rollingstone, there will be no lack of indigenous varieties adapted to all parts of the state and this society can do no better than to encourage and advise the planting of the native plum on every farm home in the land.

Mr. Barnes—I am glad to hear such high authorities as Prof. Goff and Mr. Lord recommending the planting of plums. There are plum trees growing in Waupaca that have been fruiting for three or four or five years. I have got about 50 young trees that will fruit next year that are doing well so far. I have no trouble in marketing plums.

Mr. Hatch—I would like to ask about the behavior of the Japan plum from the people who have them.

Mr. Adams—I have had the plum on my place; the trees have lived through the winter, most of them, only last winter some of them died.

Mr. Smith—We had half a dozen trees that we set two years ago that we bought for Abundance; we had, I think it was two years ago, one tree that had one plum on, and one of the others had five or six very handsome large purple plums, and since then they have pretty near petered out.

Mr. Yahnke—The Japanese plum do well in the winter, but they die in the summer. As far as the Abundance plum is concerned, I do not know that we ever had any Abundance plum in this country. Mr. Lord I believe is one of the best men on plums that we have and he is good authority too, and he has somewheres near 100 varieties. I was at his place last spring

and saw his Abundance and others, because I thought a great deal of Aubndance before that. Well, he told me, "I have got some trees here, one lot I got from our state experiment place, and one I got somewhere else, and last year Prof. Green was down and he told me, "You have not got any at all, you have not got the Abundance, it is a great question if anybody has got that, they are a Japanese; if anybody had the true Abundance I do not know what that would be."

Mr. Toole—I think there is no question but what Prof. Goff had the Abundance plum in abundance a year ago last fall, and many of the Japanese variety, and if we had any hopes of duplicating such crops as they had on their experimental farm, even once every few years, we would feel like planting them.

Mr. Converse—We have gone into the Abundance plum, the Ogontz and the Burbank, with just as fine specimens of plums as I ever saw and plums that yielded as well as anything ever yields. Last winter a great many were killed out, but when you consider that Duchess apples 20 to 30 years old were killed out, —trees which are considered a standard for hardiness, I do not see why we should condemn the Japan plums because they killed out.

Mr. Drake—I set out three years ago I think a few of the Japan, the Abundance and the Burbank, and of the Abundance plum at present I have only two or three left. I think most of them killed last winter and they have not borne anything or made very much growth.

Mr. Barnes—I planted three years ago last spring half a dozen Abundance plums, I gave them the same care and attention that I gave the Lombard and different varieties in the same orchard; at the present time I have not a single Abundance plum left standing in that plantation.

Mr. Toole—I have one tree of Abundance and several of Ogontz and have had no fruit on them, but the last time I looked at them they looked as hardy as one could wish, and not more than 25 feet from these same trees I had the Hawkeye that killed out, and I looked into the reason of why the Hawkeye should kill, which was considered hardy, and those trees that I should expect to be killed lived, and the trouble was,—Marianna

stock. My Hawkeye was on Marianna root, the Pottowatomie went the same way, because it was on Marianna root, and I would not advise any one trying to raise these varieties on Marianna root.

President—Has Mr. Seymour had any experience with the Japan plums?

Mr. Seymour—I find the Rockford plum suits me as well as any. There is another plum that I like very well and that is the Hawkeye and the Blackhawk, which has given me an excellent plum and a great yield and it wintered all right.

Mr. Adams—How about the Gold plum?

Mr. Seymour—Well the Gold plum, last winter the best tree I had rather went back on me; one side of it died I think from the root, the top is all right, but I think the root is killed on one side.

Mr. Adams—How many trees have you?

Mr. Seymour—I have one or two full of plums.

Mr. Tarrant—I will say I had a little experience with the Abundance plum, the Japan plum, that is the only Japan plum that I have, four or five trees. I set some of them out four or five years ago, they blossomed but I never had a plum, and they are all dead now, so that queered me with the Abundance plum.

President—The Burbank plum has proved more hardy than the Abundance plum.

Mr. Seymour—I like the Wolfe plum, that is the plum I was thinking of. It does not set as full as other plums, but it gives good plums every year, does not set as good; it is less work to take care of it.

A Member—The Wolfe is one of the old native varieties, is it not?

Mr. Seymour—Yes.

Mr. Hatch—It seems that one of the difficulties in growing the native plum is in getting trees on the Marianna stock. I never have seen a stock of any kind that began to approach to the root power, the food power of the Marianna, and if you have it under your tree you can secure with that the vigor which you can not get with any other stock that is known to horticulture today.

Mr. Kellogg—Do you consider the Marianna stock preferable for the commercial grower of plants, and grow either native or Japan plums on that, or do you prefer the native plums on their own root?

Mr. Hatch—Native plum stocks themselves are grown from trees, the Marianna is grown from cuttings in the south, and they can be grown in Sturgeon Bay, it gives you a stronger root than the native.

Dr. Loope—I am testing two kinds of plums. One is a seedling of a California plum and is a large purple plum, and it withstood the winter last year in very exposed places and in rather poor soil and still bore this year and came out to the tip. We are going to test that plum. We grafted some on the native root best we could do this spring and we have four feet of growth which we are leaving now entirely unprotected this winter as one part of our test, and we shall go on and try to get that in bearing.

Mrs. Johnson—A neighbor of ours in Sauk county has a plum, Mr. A. G. Tuttle has written an article about it that will appear in the forthcoming Horticulturist. It is a seedling of the Lombard, and although we knew that it was a fine plum, because we have always had some sent to us every year, he has been selling them right along for several years; they bear heavily every year, he has been selling them at $4 a bushel until last year, when he got only $3 a bushel, and we supposed that it was really a Lombard that the first hard winter that came along would kill, and so everybody was surprised last year that the plum came out all right and bore a heavy crop.

Mr. Kellogg—I have known the Townsend for a number of years, and it has disappointed me by bearing regularly. I think the best stock is the tree on its own roots, the trees propagated from the sprouts from the trees.

Mr. Jewett—There is one point that has not been spoken of in regard to Japanese plums, and that is, its propensity to bloom earlier than any other variety. There is something in the Japanese plum, you will see that they will bloom earlier, and if we find out that it blooms earlier by two weeks than any other

plant, and if we can hold them back by that mulching, or anything, we are more sure of a crop.

Mr. Smith—I would like to ask a point here for information. Several have spoken of sprouts for grafting, do you mean by that the multitude of little shoots that will come up from the roots like suckers and that spring around the plum tree?

Mr. Kellogg—It is.

Mr. Hirschinger—I would like to ask Mr. Kellogg how he can be absolutely certain. Would not he have to have a good many to know, in buying, that that was the Desoto root? On Desoto plums that are grafted and the sprouts come up, and there will be anything that may happen to be sent.

Mr. Kellogg—We have taken a great deal of pains in getting our De Soto stock from the originator, or from the original tree propagated direct from suckers, we have always kept that stock, excepting in one instance where a wild sprout seemed to have got in with them, and we may have sent out some of these sprouts for the De Soto, but I think not.

Mr. Hatch—I know of native plums being grown from root cuttings. We used to grow the Miner plum in that way years ago, now can we do it with any of the Marianna plums?

President—Has any one had experience in growing plums from root cuttings?

Mr. Kellogg—Yes.

Mr. Hatch—Mr. Charles Harris, who about thirty years ago introduced the De Soto plums, said he would give a great deal to know how to propagate the DeSoto from root cuttings.

Mr. Kellogg—We have been successful in propagating the De Soto on root cuttings. We have a plantation of a thousand trees that we propagate for certain purposes. They are not bearing, we are not troubled with any of the sprouts, nor any pits dropping.

President—We have two more subjects to bring up this forenoon. Next will be questions on Trial Orchard by Mr. Philips.

Mr. Kellogg—How many varieties of apples have you got bearing up there?

Mr. Philips—Oh, there are four or five kinds have had some

fruit on, and the Aitken plum bore after some three years planting. Then here in this corner we have plum trees. The first two rows are Cheney plums, the next row is a Wingert(?) and the next row are Wolfe; I was glad to hear Mr. Seymour speak so well of the Wolfe. Then a row of Aitkens, two rows of De Soto, that makes 18 trees, then a row of Hawkeye, a row of Rollingstone and a row of Wyant, then we have three Surprise trees and two Stoddards, and then we have three trees that came in a bundle of trees from Mr. Hatch and the label had come off so I called those the Hatch plum, I think they bear. Then the cherry orchards comes in. Right south of that we will have a row of Morellos and then we have the Richmond, and we have one row of Waldemar or Russian and one row of Kentish. Then the row next the schoolhouse which I gave the children; I wanted to interest them in the orchard and I gave them No. 23 on that, to plant the row next the schoolhouse, and they claim that now and they take great interest in mulching and growing of those trees and carrying water and looking at them, and the outcome of that may be some good orchards in Marathon county.

Mr. Ames—Is it reasonable to expect that most varieties will fruit next year?

Mr. Philips—Well, there are some fruit buds.

Mr. Ames—Perhaps somebody would like to know how many acres there are.

Mr. Philips—I think we leased ten acres and leased it for twenty years.

Mr. Ames—How wide is it and how long?

Mr. Philips—Oh, it is some 56 rods back from the road and it is wide enough to take in ten acres, I can not give the exact rods.

Mr. Ames—How many trees are there?

Mr. Philips—Somewhere about 1,200 trees growing now.

Mr. Ames—About how far apart are the rows there?

Mr. Philips—Well, 30 foot rows, running north and south. In the commercial orchard they are 20 feet apart, in the experimental orchard I planted them thicker, they are about 16 feet in the row there.

Mr. Ames—Would you consider black walnut trees detri-

mental as a marginal row to an orchard, thirty feet or more away from the nearest apple tree, and particularly detrimental to any other treee? Am I right or wrong that there is something poisonous in the black walnut tree?

Mr. Philips—Mr. Ames, I am not posted on that, but I planted some black walnut trees in the early days in my orchard; about four or five years ago there was a caterpillar, Prof. Locker located him when I described him, they came and took every single leaf off the black walnut trees; they came two years, and a very few the third year; they took every leaf off the trees, they did not kill the tree. That would be the only objection I would have. I would rather have a No. 20 apple tree on the one side, a row of them; I prefer them to the black walnut, I think. I have two rows of Lovett there, taking in 20 or 30 or 40 trees that I have left, that are bringing out new seedlings. I do not think I have seen any tender varieties there to be tested, because Dr. Loope has started an orchard to test the tender varieties that we all know will not stand, like the Bismarck and the Longevity and those things, but there is a place for any member of the society or any one in the state that has a new seedling that he thinks should be tested, there is a place left for all.

Mr. Edwards—Do you have Windsors in that orchard?

Mr. Philips—Yes.

Mr. Edwards—Do they blight on that soil?

Mr. Philips—They have not yet. I have them both top-worked and on their own roots and the roots grafted of the Windsor too. They have not blighted, but everything so far has been free from blight, and I find the old trees in that county that have been bearing 12, 15 to 18 years, that they are very free from blight, I can not account for it.

President—The next subject on our program is "What Benefits Have I Observed From Top Grafting Apple or Plum Trees," by Mr. G. J. Kellogg.

WHAT BENEFITS HAVE I OBSERVED FROM TOP-GRAFTING APPLE OR PLUM TREES.

By G. J. Kellogg.

In 1860, just for fun, I put fifty varieties of apples and crabs on a cherry crab apple tree; twenty-six of these I fruited and showed at the fairs. The experiment proved to me that top grafting might be made a success; the cherry stock seemed to have no bad effect on the larger kinds it bore. I rgafted Grimes' Golden on Princess Harvest, some years it gave a barrel of nice apples, but the stock was tender and it failed in one of our test winters.

I have Ben Davis that have been bearing about 15 years; these are grafted on seedlings, Yellow Transparent 10 years on McMahan and Hyslop crab, the bearing is heavier on Hyslop and less blight.

I have probably fifty varieties now growing top grafted on a variety of stocks, 20 kinds on Duchess.

I find Tetofsky worthless as a stock.

Transcendent is a good stock, but I find that winter apples on this tend to early maturity of fruit. Many kinds are a success on Transcendent crab, and I have great hopes of seedlings grown from this crab to give us roots that will better withstand our dry winters.

It is of the utmost importance for top grafting to have vigorous strong growing stocks and for this reason I have great faith in Virginia and other strong growing crabs that are hardy for they get hold of the soil and get what there is in it. Virginia crab has peculiarly strong limbs and is much the best of any thing I have seen; Shields crab is the best I have ever tried in the nursery as one cion will form a top, but a Virginia crab with a leader and four arms grafted is worth many times its cost for an orchard tree.

Farmers are not willing to pay what a top grafted tree is worth, but they are anxious to take any humbug of these traveling "tree tramps." Look out for Bismarck, Longevity, Banana and the like, the air is full of humbugs.

The most glorious success of top grafting I have ever seen is in A. J. Philips' orchard at West Salem, he has some varieties on five to seven different stocks, and many years in bearing, showing adaptation of stocks to varieties. He has used fifteen different kinds of stocks beside seedlings. Any one in the northern fruit belt contemplating planting an orchard of 500 trees would be well paid many times over, to visit Mr. Phillips' orchard.

Last winter I visited an orchard at Austin, Minnesota, where there are probably one hundred kinds top grafted, that were healthy, vigorous and full of promise. At Winnebago City, Minnesota, I saw the fruit of R. I. Greening, nice specimens, that had been successfully grown top grafted.

I believe top grafting (on a hardy stock), of tender and half hardy kinds, puts them in a position and condition to withstand the effects of cold winters. In J. V. Cotta's experimental nursery and orchard grounds in Carroll county, Ill., I saw the greatest success of top worked trees in nursery and orchard of apples and pears that I have ever seen, and it will be a great loss to horticulture if those experiments shall fail after Mr. Cotta's death.

There is no limit to this top grafting enterprise, Prof. Green of Minnesota told me he saw one tree in Mr. Burbank's orchard in California with five hundred and twenty-five kinds of apples top grafted on the one tree; when this is in full bearing it will be a sight worth seeing. H. Tarrant of Janesville has been very successful in top grafting and it will pay to visit his orchards six miles from Janesville. My success with pears and plums has not been as good as with apples; I have increased the productiveness of Miner by grafting one-third of the top with De Soto. I find no plum stocks equal to Americana. The Marianna is a failure.

I have many kinds recently grafted that promise well. There are a few pointers leading to success in top grafting. After the stock is established the sooner it is worked the better and the smaller the limb used the better, if stout enough to hold the cion firmly, limbs no larger than your finger are best, avoid grafting limbs needing the saw; insert on young trees for permanent orchard leading center and four side branches and the top may

be made perfect in two years. Watch the cions giving them good healthy growth and not too much of it.

The Virginia crab have the best branches and the cion should be inserted not more than six to twelve inches from the body.

The earlier in spring the grafting can be done the more successful, not necessarily so, but if you wait till June the cions are apt to get a little off; with the cions perfect I have had ninety-five per cent. live, grafted in June, of apples and pears.

Plums and cherries must be grafted before the frost is out for best results.

Liquid wax applied warm I consider best, and to protect from sun to keep off the birds a little newspaper wound about the wax is a benefit.

Some prefer waxed cloth, but whatever the application of the wax it is of more importance than the setting of the cion.

Cions may be cut in October or any month after except when the wood is frozen, they may be cut when the buds are swollen if immediately inserted. Great care is necessary to have the cions in perfect condition. Old trees are not profitable to top work. Not even Duchess of Oldenburg, while Duchess may do fairly well when small to use as a stock.

Mrs. Johnson then read the following paper by Mr. A. C. Tuttle:

The first experiments in top-working hardy apple trees to save tender or half hardy fruits was made by N. C. Kirk of Devil's Lake soon after the hard winter of 1855. He hoped to save some favorite Ohio apples, the Rambo and Belmont, by top-working them on Duchess. They did not live long enough to be of any value.

A neighbor thought he had too many Duchess in an orchard set for home use. Some thirty years ago he top-worked several of them with Pewaukee. The winter of 1884 and 1885, made no distinction between those top-worked and root-grafted. They were alike destroyed by the extreme cold of that winter.

After the winter of 1872, when a large amount of nursery and orchard trees were root-killed, we top-worked several thousand trees on crab stocks, using Transcendent, Large Red and large yellow Siberian crabs. Nearly every variety of the apple put

upon crab stocks was a failure, they made a growth of 4 to 6 feet and then died. The Walbridge made a better union and I set 25 of them in orchard. They have been gradually dying out for several years. Last winter the top-worked Walbridge were all killed but one. Those Walbridge root-grafted did not suffer any injury. After our experience in grafting upon crabs, when saving seed for planting we were careful not to save any where there was a mixture of crab seed.

I do not know of a single tree living, top-worked upon the Large Red or Yellow Siberian, and we put in hundreds of them. If any one wishes to repeat the experiment I have plenty of the Yellow Siberians, that I have no use for, bushels of them fall upon the ground and rot every year.

I do not feel the necessity of changing our mode of grafting or the stocks used, certainly not for crab roots.

The loss in my orchard was not more than one tree in a hundred, and the trees never were in better condition or gave promise of so large a crop.

My Russian apple orchard, set about 25 years ago with 80 varieties, not a tree was injured by the cold of last winter.

I have an orchard set six years ago, with a dozen varieties of Russian apples, the ground was cultivated in corn and the trees went into the winter with the ground perfectly bare. This orchard "for some reason not easy to explain" suffered not a trace of injury either in the root or top. They were grafted upon stocks grown from Russian apple seed.

It may be that the trees being all Russians root and top were hardy enough to not be injured by the cold of last winter.

Probably my son's nursery, for the same reason, suffered very little injury.

Mr. Kellogg—I would like to ask Mr. Tuttle if his father's experiments on the crab and the Tetofski were successful.

Mr. Tuttle—The stock that father grafted on was small, that is, two years old if I recollect; especially the Tetofski.

Mr. Martin—I would like to ask Mr. Kellogg how he applies this hot wax, how he keeps it in condition?

Mr. Kellogg—In a little lamp, set in by a tinner's furnace, is handiest to carry around, and have your wax dish hanging on that above the fire, so as to keep it just in liquid form.

Mr. Hatch—How does it differ from the ordinary wax?

Mr. Kellogg—It is simply a little softer than common grafting wax.

Mr. Hatch—Would you recommend a liquid in preference to the old fashioned wax for the inexperienced to use?

Mr. Kellogg—There is no danger with the liquid wax, excepting you get it too hot. Liquid wax is more easily applied than the hard wax.

I would like to hear from Mr. Tarrant on his own grafting.

Mr. Tarrant—I have been top-grafting and top-working for some years. My first experiments in that line was on Transcendent crab. I had a good many and I used at that time Pewaukee cions, mostly some cions of the Canada Reds. Those grew there so much larger, and grew out mostly and also blighted that I gave up the experiment for quite a little while. But I commenced again after a while, and I grafted a little every once in a while, but then I tried some root grafting and some other grafting, and I had some good success with whip grafting on good sized trees. I have some trees that are Windsor that fruit abundantly. Now they were of the Moscow variety, I had four trees, especially the first ones that I worked on, and I put grafts of the Windsor in one, Ben Davis in another one, another Russian Spitzenberg, and the other Peerless. Those trees have all borne, and the Windsor tree has borne immensely, as well as the Ben Davis, more than the other two, those two kinds have borne immensely and are large apples, but I see that the Windsor does not cover up quite so well; they mature a little quicker.

Mr. Yahnke—I would like to ask Mr. Kellogg what would be the limit of age to graft on, properly?

Mr. Kellogg—I should rather make it size than age. I should not want to top-work a tree that was much larger than two inches in diameter in the fall, with a fair top. But Mr. Tarrant is succeeding in top grafting large trees and working out on the limbs.

Mr. Barnes—In top working these five or six tree you spoke of by whip grafting system, did you graft in the limbs or in the main trunk, or stem of the tree?

Mr. Tarrant—I grafted in the limbs mostly to finish out the trees. The trees got pretty large in the center of the tree, I had to get the most of them around the tree to do that.

Mr. Barnes—How large a branch can you graft by the whip graft system?

Mr. Tarrant—Not large ones, not much larger than your finger, not really larger than the little finger, is about the size.

Mr. Hirschinger—My first work was in '51, I think, and Mr. Canfield started the first nursery that I know of in the state of Wisconsin, and his idea that they must be grafted on their own roots, and I grafted about so high up and thereafter I first learned to graft. The first years we grafted Transcendent on the top of seedling apples and they did very well; then we grafted on top of them and we grafted them with anything we could get and at last the trees died root and branch. I think I can define my position very readily. My experience teaches me that if you want to raise apples in Wisconsin you have got to raise them upon trees that are hardy root and branch, and if you top work them upon, I do not care what, if you top-work them on stock of any of those varieties that are not hardy enough, they will be killed.

Mr. Tarrant—I will say that those four trees that I worked first, those Moscow trees, they bore the next year; those little things bore large apples, and the next year (Mr. Kellogg will bear me out in this, for he was there) I had larger apples on that top worked tree than my neighbor, Mr. Wilton, had on his trees on their own roots.

AFTERNOON SESSION.

Wednesday, Feb. 7th.

President—The first subject we have this afternoon is "What we can do to make trees and plants live, grow and bear fruit," by Mr. A. L. Hatch of Sturgeon Bay.

WHAT WE CAN DO TO MAKE OUR TREES AND PLANTS LIVE, GROW AND BEAR FRUIT.

A. L. Hatch, Sturgeon Bay.

What we can do is to place our trees and plants under conditions to meet all their requirements, omitting none. And when this is done they will surely live, grow and bear. But many will doubt this and point to their own experiences of many failures as proof of their doubts. And yet I have never seen a failure but what should be avoided by conforming to the first statement—that of meeting *all* the requirements. The requirements I consider essential are, 1st, select the right varieties; 2nd, plant them upon proper sites; 3rd, supply them with proper nourishment; 4th, train them to produce desired results; 5th, give adequate protection.

Concerning the first topic we must of necessity limit the varieties to those adapted to our climate and other conditions. We can not expect to grow peaches continuously or profitably but we may the apple, but not all kinds of apples with the same degree of success. So we select varieties best suited to our conditions, the Duchess, McMahan and Wealthy, rather than the Spy, Baldwin and Swaar. Then again we must modify our selection of varieties if the sites we have are not adapted to the growth of some species. Our soil and subsoil may not be fit for apples or cherries but well adapted to strawberries and raspberries, or they may be fit for neither and still adapted to the plum and currant.

There is a natural tendency to overestimate the comparative value of new varieties and their hardiness. But I want to say that all varieties are to-day just as good as they ever were and can be made to succeed just as well as they did when first introduced if they are properly managed. The Marlboro raspberry is just as good as when the plants were sold at a dollar each and Fameuse apple is just as fine as ever it was.

Our second subject, proper sites, means not only soil but subsoil. It also means availability of both to the roots of the trees or plants. It also considers air drainage, frosts, winds, sun heat and all features affecting the growth and life of the plant.

Assuming that the right varieties have been selected, and that they have been planted upon proper sites our third consideration relates to their nourishment. There are some items upon which we shall easily agree. No one will think of dissenting from the statement that the tree or plant shall be so placed as to draw moisture promptly and continuously from the soil — such as may be secured by puddling and pressing moist earth firmly upon and among the roots of newly planted trees, thus securing the closest capillary attraction possible. Nor is anyone likely to dissent from the general statement that a tree or plant should have a balanced ration, that it should be fed the different elements it needs in correct proportion. Nor will anyone object to assisting growth at the right time, but we are likely to disagree upon the question of ways and means of attaining these ends.

Whoever sets a fruit tree or plant expects it to bear fruit. It is that he hopes for, labors for, waits for. First the plant, then growth, buds, bloom and fruit. From the time fruit culture began upon earth to the present, practical growers have studied every influence bearing upon fruit production until present practices have become established, and it is my firm belief that when we apply the best philosophy to our management we can be sure of results. Prof. Bailey said before us here two years ago that "it is natural for trees to bear, and when they once come into bearing they should be maintained in that habit by continuous good care."

It is equally true of the grape, the raspberry and strawberry, and when they fail it is because of some bad management on our part.

I am fully aware that many contend that we know really very little of how fruits grow and what we can do to make our trees and plants bear. In the January Number of the Horticulturist Prof. Goff says, "We know very little of the conditions that cause or prevent blooming in our fruit trees, and we are, therefore, almost helpless in this extremely important part of our culture system." While this is true from the standpoint of the scientist and we need to have it investigated by the Experiment Stations it is also true that practical horticulturists if they adopt the right methods and work in harmony with all the known philoso-

phy of plant growth, can secure fruit buds and bloom with wonderful certainty. Nor should we be discouraged by this view of the scientific investigator. Common salt was used probably hundreds of years for the preservation of meats before its chemical nature was known, or the philosophical reason for its preserving power understood. Practical results were obtained just as surely before as after its analysis into its component parts. Of course it is infinitely better to understand its philosophy, to know when it is pure, to resolve it into its parts and set each part to new and wonderful uses, just as it will be infinitely better to know why this or that method affects the fruitage of trees and plants and the true philosophy for every operation, but for safe and certain practical results we need not wait for these investigations.

The third essential that I have mentioned, proper nourishment, includes, 1st, continuous moisture supply; 2nd, a balanced ration of food elements; 3rd, the correct timing of all operations. Cultivation, stirring the soil, is a method of conserving and promoting the supply of moisture. It also makes available the fertility of the soil, brings the food to the roots where it is needed. In the promotion of correct growth there is nothing can fully substitute it, except mulching may sometimes supplement it. Not only does stirring the surface permit the penetration of showers of rain to the subsoil, prevent evaporation from below, and promote absorption from the atmosphere above, but it also removes the grass and weeds that are not only robbers of fertility but moisture to an astonishing degree and at a time when it cannot be spared without injury.

Our second proposition is a plea for a balanced ration. You can not make good healthy apple tree wood from swamp muck soils nor can you make good wood from soils extremely strong in nitrogen. Nor is it probable a soil excessively rich in all elements is a safe one. A tree or plant may be overfed just as surely as a colt may be. You can grow a plant to bear leaves and vines in abundance but no fruit. Did you never see this done with strawberries? It is quite common. I can see no reason why trees and plants should not have all their food in reasonable supply, none in excess — none lacking. Perhaps the useful elements mostly lacking for fruits are such as wood ashes supply. At least

I have found them highly beneficial in using from five hundred to a thousand bushels a year, especially on strawberries.

Our third contention is for the correct timing of all operations. Whatever is done should be at the time that will best meet the requirements of the plant itself. If a tree in the orchard ceases to grow new limbs and leaves by July 1st it is not wise to cultivate to stimulate a growth after midsummer. Prof. Baily told us this fact. We all know it by experience and observation. The idea of culture is that when the tree or plant is making a growth of expansion upon which next season's fruit must be borne then is the time to cultivate. And this should always begin at the very first of the season to encourage an early vigorous full season's growth that should be followed by a season of ripening, maturing, and hardening. Every fruit tree and plant should make a good vigorous growth each season. What we build this year in growth, in vigor, in renewal of our trees or plants is what we must depend upon for next season's fruitage. No cranky notion, no magic of art can take its place. Nothing we can do next year can make up for what we have neglected this. We may reform next year and catch up with the procession but it will not atone for the previous season's loss. Nor can I conceive why we should not cultivate and nourish our trees every year. We do not give our domestic animals a fast of even a week and I can conceive no good reason why we should cease to feed our trees and plants as we do if we cease cultivation and give them grass and weeds for company.

I wish now to make a transition to my fourth general proposition that we should train our trees and plants for desired results. In the orchard I have found the great superiority of spring pruning to promote fruitfulness over that of any other season. Summer pruning is at a serious loss of foliage that lessens the tree's power to maintain its vigor of root. I can see no good reason to exhaust the tree with producing foliage that is removed at a time when it would not only increase the general growing power of the tree but also store up some of that surplus food that is always to be considered valuable in fruit bearing. When branches are removed early in spring there is promotion of vigor from the very first of the season that is one of the most potent factors in developing fruit buds for the next season. Water sprouts and those com-

ing out where not wanted are easily rubbed off as soon as started and they are not left to disturb the equilibrium of growth.

Our fifth proposition of one essential is protection. By this I do not mean winter protection for while that may be desirable for some vines and plants it is not always essential. Indeed, as far as fruit trees are concerned very little can be done under that name. The real winter protection is in so growing the tree that its vigor and maturity are complete, thus insuring sufficient vitality in all our hardy recommended varieties to withstand our severest winters. The protection I mean may be illustrated by saving the foliage from insect and fungus injury, to the end of the season — preserving it in its vigor until it has completely performed its office of combining, elaborating and perfecting the elements that make up the wood, bark and bud of the mature tree. Against some insects and fungii there appears to be some varieties more resistant than others. This last season the Abundance plum was but slightly hurt with pear slugs and shot hole fungus, while European plums were severely injured and will require spraying to protect them another year.

To summarize, I would say we can make our trees and plants live, grow and bear fruit, 1st, when we select those strong feeding kinds that hustle for themselves; 2nd, when we plant them where they can get what they need; 3rd, help them get what they require; 4th, modify them to the use intended; 5th save them from being consumed by their foes.

Mr. Kellogg—Do I understand Mr. Hatch to recommend covering the roots of all trees and plants before setting?

Mr. Hatch—That was simply mentioned to illustrate a principle of horticulture.

Mr. Kellogg—Should you recommend that?

Mr. Hatch—Why, yes, not necessarily all, but I know of no way in which you can secure that intimate capillary attraction from the soil that is secured with the rootlets of the plant, that is, especially those in the seedling. You pull up a seedling and you will find the soil adheres very closely to the roots and rootlets;

there is an intimate capillarity that is especially established in the newly planted plants, and I do not know of any other way of securing that than by using this covering. Would you recommend it yourself, Mr. Kellogg?

Mr. Kellogg—I would.

Mr. Hatch—Of course in planting black raspberry tips we are likely to bury the plant and mass the roots in a bunch, that would be the fault of the method of doing it, not the principle.

Mr. Edwards—You speak of cultivating the soil. Now it is just as difficult in coming in contact with trees. How would you cultivate trees, what implements would you use?

Mr. Hatch—If you have soil that you can use the spring tooth harrow on, you can use the disc harrow, or the Acme harrow, according to the soil that you are operating on, but I have found a great deal of help in using the spring tooth harrow, especially among raspberries, where it is not wide enough to drive a horse between the rows, we have one set of levers.

Mr. Edwards—How deep would you cultivate?

Mr. Hatch—That would be owing to the age of the plantation, and Prof. Bailey found that if an orchard is left in grass, the roots grow much nearer the surface than they would if they were cultivated, and a fruit tree in the orchard will adjust itself, will submit to the style of the ground that is given it from the first. We will suppose that you have got apple trees that are planted ten years. You do not cultivate so deeply as to injure the roots, cultivate a little shallower next to the tree, about from two to four inches is all right. Of course nearer the tree there might be roots that would slant down that way, and nearer the tree you may have to go lighter, but further away from the tree you would be likely to find them further down. But mind you, if you have an orchard that is in June grass, and you want to plow it up, you would find the roots much nearer the surface than you would otherwise, and you can not let the raspberry get into grass and then break it up with the same success that you could if cultivated from the first.

Mr. Edwards—Have you ever seen it done?

Mr. Hatch—I have done every foolish thing that a man can do in horticulture.

Mr. Edwards—Would you?

Mr. Hatch—Not in the ordinary sense, no. Suppose a man has an orchard and he wants to make a continuous growth on it. The time to make that would be along the first of the season, the first of July. Now suppose you have seeded it in grass, there is no grass crop that would take more moisture than it would later in the season, and I was astonished this last season in plowing up a strawberry bed that had got well seeded with clover, and it was really a clover patch in my cherry orchard, and I was astonished at the amount of moisture that that grass and clover pumped out of the soil, did not believe it possible. I do not believe if I had left it there that one single drop of rain woud have reached the cherry roots. I believe today there are thousands of trees scattered over this country that have not had one particle of water reach the roots since last June, simply because the June grass sod is almost impervious to water, and the growing grass will take out out a tremendous amount of it, and I can not conceive of any reason why we should do that.

Mr. Toole—I would like to know if this cultivation should not be continued through the season, rather than to run the risk of a baked soil.

Mr. Hatch—Prof. Bailey answered that, that cultivation should not continue beyond midsummer in the apple orchard. The question is, what is the best thing to do. The best thing is to know what the tree requires.

Dr. Loope—If it is proper and germane to the subject I would like to ask a question regarding how to make apple trees bear. For instance, I have an orchard of three or four thousand trees; I am satisfied that this coming year they are going to bear largely, but among that number of trees I want a goodly number of them to bear the odd years, so that I will get some money out of them yearly. How can I do that; is there any way of regulating them in that direction?

Mr. Hatch—Yes, in my own experience that I had a good many years. I had some Tetofski two years ago on my farm, a nice lot of them, they are still on the farm, and I went to work and pruned them one spring, nicely, and induced a great vigor of growth, which made them form fruit buds and fruit the next

season. If you will read Prof. Bailey's article on pruning, which was under the title of "conditions favorable to the formation of fruit buds," you will see he lays great stress on what is one of the most potent factors, and I think he has fairly stated the case.

Dr. Loope—For instance, the coming year is to be the fruitful year, I must commence this spring for the year after?

Mr. Hatch—We will assume that you have an orchard in which you expect to get more apples than you want, or you want to get more next year. Well, by pruning out you can check off the fruit next year. I mention what you can do in pruning and thinning fruit. You have a twig say with eight limbs on, you take four limbs off, you have reduced the fruiting power one-half. That may be the thing the tree wants, it may not, it depends on how much fruit the tree bears; each limb may bear more fruit than it did. And then the point is this, if the surplus food stored up by the tree this year is not required for the production of fruit, it will go into the fruit buds, it will be there next year to feed your tree to the bearing point.

Dr. Loope—What do we understand by early spring pruning?

Mr. Hatch—After the winter weather is over, so that if you cut off a limb, the wound is not frozen in and injured, and before the sap starts, in the ordinary acceptation of the word, in the branches, so that the wounds dry over and heal over, that is early spring pruning. Then rub off the sprouts that grow in the wrong places.

Dr. Loope—I would like to have Prof. Goff give his opinion about that idea of spraying blossoms to kill the fruit in the spring, so as to make it fruit the next year?

Prof. Goff—I think it is time enough to kill the fruit after we get it.

President—I understood you to say what kinds are as good as ever they were; what I want to know is, how general that principle is that you laid down?

Mr. Hatch—The question is like this: I remember when J. M. Smith and I went to Boston to the meeting of the American Pomological society in 1887, Mr. Smith had a paper upon the

subject, and he mentioned this idea—Will a variety run out? That is the real idea you want to get at?

Mr. Osborne—You believe in the possibility of improving a variety, do you not? Taking the Wilson strawberry, for instance, and improving it?

Mr. Hatch—You would not change its individuality so that another man could not do the same as you can. You can go on generation after generation, another man can do the same as you can, that is not the improvement of varieties, that is simply a question of development of varieties, or a question of vigor in bringing out their color and beauty.

Mr. Osborne—If you double the size you have got substantially a new variety?

Mr. Hatch—No.

Mr. Osborne—It has got the same effect.

Mr. Hatch—No, you might coax it as much as you have a mind to, you can not destroy the variety, you can not change it. Is not that true, Prof. Goff, that the individual, the personality of variety is not lost? It is not lost, it is not even modified, it is only developed?

Prof. Goff—You can change a variety so that it can not be recognized; it has been done in varieties, even in potatoes. It is admitted by fruit growers that by selecting a certain form of seed, the variety can be modified, and here is a case where you can propagate from cuttings.

Mr. Hatch—When you speak of seeds you get it into new realms, but you think the modification of varieties can go on by selection of cuttings about as well as by seeds?

Prof. Goff—Yes, you can. Not so rapidly, but it can be done, at least that is what we are trying, and that is what we can prove by some examples, I think.

Mr. Hatch—I think you put that doubt in there strong; put in a good big question mark.

Prof. Goff—As far as varieties grown from seed are concerned, it is perfectly well known that the ideal of the grower gets the variety for him. That is true in the garden. Take any corn, in 15 years you can make different corn, and so you can with tomatoes, simply by selecting one particular line and following it from the original.

Mr. Hatch—In that case we have new varieties from the seed, but in eliminating that, going back to propagation by graft.

Prof. Goff—We can change the form of potatoes by continuous run of selection; so many have done it that I have accepted it.

Mr. Osborne—While I think Mr. Hatch's proposition is substantially true in regard to raising fruit, I am equally confident that a variety may be improved beyond the knowledge of any one familiar with it, a variety may be improved, or, by wrong treatment it may be so changed that it can be hardly recognized.

Mr. Toole—I think in a general way we accept the idea that the variety will die with continuous cultivation; that we can not keep it up to its oldentime vigor and it becomes unprofitable. We have such an idea, and I say in that way varieties do run out.

President—I do not think Mr. Hatch claims that a plant can not degenerate until it is worthless.

Prof. Goff—I think the question of vigor is one that is very often confused with a question of variety. A variety of strawberries may be very vigorous at one time and in ten years it may be less vigorous. That was the way with the Wilson strawberry; it had the same color and flavor, but it did not bear the fruit because it had lost vigor. Now if we say change of vigor is a change of variety, then we will say the Wilson lost its variety, but it can be restored, and in that case it is the same variety yet.

Mr. Ihrig—I would like to ask the professor how to keep up the vigor.

Prof. Goff—I can give you the theory of doing it, and that is, to get the best strain of Wilsons that you can, put them on good ground, give them excellent cultivation and set your plants four feet apart both ways and keep an account of the yield of each one of the plants, and the one that gives you the largest yield use for propagation, and set those out the same way, four feet apart both ways and keep an account of the second generation the same way, and the individual that gives you the largest yield keep for propagation and continue that for ten years.

President—Can you give us some simple direction how to destroy it?

Prof. Goff—It is generally destroyed by the ordinary method of cultivation.

President—And it is frequently destroyed because it is thought worthless. They think they want another kind, the kind is all right.

Prof. Goff—It is generally cheaper to start another kind and to do the work that some one else has done.

President—You know I have always been a champion of the Crescent strawberry, and I wondered that others did not champion it as I did. Well, I found out afterwards that that was wholly fostered in the strawberry plant which I got. I knew at the time they were wonderfully good plants and I tried to keep them. Well, the Crescent strawberry can be run out in two years so that it is not good for anything. Some persons have an idea that if they get new plants from an old bed, if their roots are white and fresh, they are all right. Well, if they come from an old bed they are not all right. I would not set such plants for a gift.

Perhaps we have discussed this long enough; we have spent a half hour. We will now take up the next subject on the program, "Growing Vegetables for the Market," by Mr. Frank Yahnke.

GROWING VEGETABLES FOR HOME MARKET.

By Frank Yahnke.

To do this subject justice I would have to write a large book, so I have to confine myself only to some principal points in a short paper.

The vegetable grower for a home market must grow all kinds of vegetables that the market demands and of the best quality. To make his vegetable garden complete he must have all kinds of small fruits and early apples. In order to grow all these different vegetables and fruits the selection of soil is very important. Different vegetables require different soils. When a texture of sandy loam and clay soil can be had it would be an advantage, but

where only one kind of soil is available it is best to select a sandy loam with clay subsoil. This kind of land can be made suitable by good fertilizer for almost any kind of vegetable or fruit.

Different vegetables require different preparation of soil and manuring. The soil for all early vegetables should be prepared the fall previous and if the soil is not rich enough a coat of rotten manure must be ploughed under in the fall, as most early vegetables are not first rate after fresh manure. If the land is not too hard beaten by the winter's rain, it can be prepared in the spring by pulverizer and harrow but, if the ground is hard it must be ploughed again in the spring. For the late vegetables the land should be ploughed in spring, and where manure has to be ploughed under in the spring it ought to be done as early as possible so that it will rot and be mixed with the ground. The land should be harrowed twice a week until planting, in order to mix the manure with the soil and to kill the weeds.

The selection of seeds and plants is very important to the vegetable grower. There is as much difference between the different vegetables as there is in apples; therefore the vegetable grower must first of all look for the best quality of any kind of vegetables he wants to sow or plant, and wherever possible that prolificness is combined with it. The sowing and planting of vegetables needs a great deal of attention. Many vegetables, as radishes, peas, corn and others, have to be sowed at intervals, so as to prolong the season. Early cabbage, tomatoes, celery and other plants have to be grown in hot beds and once transplanted into cold beds before planting into open ground to make them stocky and hardy. Plants so treated will resist unfavorable weather and injurious insects better than if planted at once into open ground and will mature about two weeks earlier, which means often a difference between profit and loss.

All vegetables must have the best cultivation possible. The smaller vegetables must be worked mainly by hand. Weeding, hoeing and hand cultivating must begin as soon as the rows can be seen and the ground must be kept loose even if there are no weeds, so as to make a dust-blanket to retain moisture. The larger vegetables can be cultivated with a horse hoe, but it must

be done thoroughly, and often it is necessary to use a hand hoe also where the horse hoe does not get close enough to the plants.

The grower of vegetables must keep in mind that the purpose of cultivation is to kill the weeds and *loosen the soil.*

Rotation of crops is not less important than any other point in vegetable growing. Vegetables should not be planted in the the same land in succession for many years, but a good coat of manure must be applied every fall and plowed under. On the land where the early vegetables have been grown another crop of later ones can be raised. After radish, lettuce and spinach are taken from the land, late cabbage can be planted, and cucumbers for pickling can be grown. After the early peas are off from the land, late beans and turnips can be planted. After early potatoes, turnips and winter spinach can be sown, and so obtain two crops in one season off the same land. The land for cabbage should be always heavily manured, and it is very advisable to let root crops as beets, carrots and parsnips follow. Peas will do well after these root crops. Then manure and follow with corn, potatoes and tomatoes. The land may be laid out into two fields, and then rotated. It would take too long to describe all the different rotations in vegetable gardening. To give you the essentials of vegetable growing in a nut shell I will say: Good soil, the best seed, plenty of manure, good cultivation and rotation of crops.

Mr. Curtis—I would like to ask Mr. Yahnke his method of plowing, the depth you plow in the fall, and the depth you plow in the spring, for vegetable crops.

Mr. Yahnke—I never plow in the fall, because I find it unnecessary, but as early as possible in the spring, and if I do not sow anything, then harrow it over till its time of planting, every week, twice.

Mr. Barnes—In your opinion, how would green rye turned over in the spring, quite a heavy crop of it, do for late planted vegetables?

Mr. Yahnke—It would be pretty good if you add a good manure to it.

Mr. Barnes—If the ground has already been fertilized?

Mr. Yahnke—Well, the ground has got to be pretty rich. We must understand that vegetable growing is gardening, and you never get too much manure. You want all the manure you can get into it, and the richer the land the more vegetables you get.

Mr. Barnes—Which is the best soil, sandy or clay?

Mr. Yahnke—I never would advise sandy soil, because you can not raise all vegetables well on sandy soil, but a mixture with clay which will retain moisture will do very fine. But there are different vegetables that require different soils, like the squashes, they want heavy loam land; late cabbage wants to be grown on heavier land, early cabbage you can grow on light soil, and peas, the more sandy the better it is for peas.

Mr. Kellogg—Have you tried commercial fertilizers, and if so, with what success, and what does stable manure cost you an acre?

Mr. Yahnke—It costs me the hauling, to answer the last question first. Because the other I can not answer at all. I have never used it.

Mr. Kellogg—Is horse manure worth hauling for a vegetable garden?

Mr. Yahnke—It is good and it depends on what it is used for. It is good on heavy soil if it has not too much litter in it, or too long straw. There is another thing,—horse manure should be rotted, but not burned. It is often a wrong idea when you say manure is rotting, you lift it up and see the steam come out and think it is good, but that steam that goes into the air, that is the best power there is in the manure and that is generally lost in the horse manure.

A Member—They cease to speak of rotted manure on well regulated farms; manure is never used when it is rotted. For next year's use this coming spring on garden ground, for instance, they admit of course and approve of the use of manure made since stock came into quarters last fall. Is there any detriment to garden vegetable growing in using that manure?

May it be applied too freely for the welfare of the garden plants the coming season?

Mr. Yahnke—There would be in some instances and in others it would not. It depends on the vegetable it is, and it depends on the soil, and it depends entirely on what you use it for. If your soil is heavy clay soil you can use quite a good deal of fresh manure and plow it under. If you plow it under in the spring and let it lie you have a first rate bed for late cabbage. But this year's manure for onions, if the ground is hot and dry, it may destroy the crop in a dry season. In vegetables like the radish that grow in a few weeks big enough for use, it would be a detriment.

Mr. Ihrig—In hauling manure as you do, from the city, would it not be a good plan to draw it right out on the land and spread it rather thinly, and then take a coarse rake and rake it together in the spring?

Mr. Yahnke—In answer to that question I will tell you how I do it. I never haul that horse manure, and I do not spread it in the winter time when the ground is frozen. I haul it in piles of a load, and as long as the manure is not frozen, set it kind of loose, but as it is thawing in the spring I spread it equally over the land and plow it under just as soon as the ground gets dry enough to do it.

Mr. Jewett—What do you do to get rid of the cabbage worms?

Mr. Yahnke—I use the insect powder, which has to be fresh. Of this insect powder I apply a tablespoonful and two pounds of lime and ten gallons of water and mix it, and spray the cabbage just as the worms appear. Sometimes I have to do it twice.

Motion made and carried that Messrs. Owen, Bruncken, Thurston and Lloyd and Miss Jacobson be made honorary members of this society for the coming year.

Mr. Yahnke—If we have a few minutes to spare, I think it would be of interest to the Society if Prof. Goff would explain to us how to kill the insects on plum trees.

Prof. Goff—The gentleman did not mention any particular insect, I do not know what he means.

Mr. Yahnke—I mean what is called the plum louse.

Prof. Goff—I do not pretend to be able to say that I can

always avoid all the injury from this insect. I have not been able to avoid it when it takes a notion to be troublesome, but the best thing I know to do with it is to spray the trees very carefully with kerosene emulsion. The best time is early in the spring when the buds are opening. You will find at the time when the buds and the leaves are just beginning to spread a little and when they are very small, very often the outside of the leaves will be covered over with these plum lice, and if you spray them at that time you are very likely to reach over the trees, because there are no leaves to use it up and you can kill all the insects there are on the trees at that time very easily. But there are some insects hatch afterwards, because they do not all hatch at once, it may be that this first spraying will be all that is necessary, if so, we are very fortunate. But sometimes in the latter part of May or in June the plum lice come on in great force, and the leaves curl up and it is very difficult then to get rid of them; but I have found this, that if I take a good force pump and some kerosene lotion and stand right under the tree, with my back against the trunk of the tree and hold my nozzle up so I can get a strong spray on the under side of the leaves, and go around the tree, I can get rid of so many that they do not do much harm. I have had trees defoliated with aphis when I thought I had them sprayed thoroughly. If we begin early we can almost always conquer them; if we wait until they are rolled up in the leaves, we may not be able to get rid of them sufficiently so that they will not do a great deal of harm.

Mr. Osborne—Do you use emulsion?

Prof. Goff—I use about a ten per cent. kerosene emulsion; I use a mechanical kerosene. We have pumps made now that spray kerosene and water more effectively than the emulsion mixes them.

Mr. Jewett—Have you found any way in which we can save our snowballs? We have tried spraying but we could not get at the under side of the leaf very well. We have tried the same way you speak of.

Prof. Goff—I have had the same trouble and I gave up the battle. I tried it about five years; I found I could reduce the number, but never succeeded in conquering them, so we dug out the bushes.

Mr. Kellogg—What is the best pump with which to apply this mixture?

Prof. Goff—There are two good ones. One is made by the Gold Mfg. Co. and the other is made by Denny & Co. of Salem, Ohio, they are both good.

A Member—Have you ever tried the Rochester self-acting spray? They use salts.

Prof. Goff—I never use salts. There are only two that spray kerosene and those are the two I mentioned; there are only two that have a spraying attachment for kerosene and we get ours from Denny & Co., Salem, Ohio.

Mr. Kellogg—I have used tobacco water for spraying; I have applied it on the cherry for the same louse with some success; I have not tried it on the plum, I do not think it would answer the same purpose.

Prof. Goff—I can only say in that regard that while I was living in Geneva, New York, which is a region of nurseries, the aphis was exceedingly destructive there one year, and the nurserymen tried everything that they could hear of or think of, and they came to the conclusion that kerosene was the best all round remedy that they found.

Mr. Edwards—I would like to ask Prof. Goff what preparation do you recommend for spraying house plants, foliage plants?

Prof. Goff—Do you mean for the green fly?

Mr. Edwards—Little green insects of some kind.

Prof. Goff—The way we manage in the green house always is to smoke them with tobacco smoke. If they are in flower, sometimes the tobacco smoke injures the flower, and we can dip them in tobacco water, which is not so easy quite as smoking.

Mr. Edwards—Would kerosene emulsion do it?

Prof. Goff—It would probably do it, but it is not so cleanly as tobacco smoke; it is apt to leave stains.

A Member—What treatment would you advise for the red spider?

Prof. Goff—I would advise washing. Put the plant right under the faucet and turn on the water and give it as hard a washing as it will stand without injuring the leaves.

Dr. Loope—What shall we do for the apple curculio?

Prof. Goff—As far as the apple curculio is concerned, I do not know. The only remedy that I have ever heard of is spraying, and it is generally conceded that spraying is not very effective, although Mr. Harris of Minnesota believes that it is quite helpful. I suppose we could kill that curculio the same way we kill the plum curculio, but it would not pay, because apple trees are large and the fruit is cheap.

The President—I am under the impression we have got to do something. I have a thrifty Duchess orchard that I never got a peck of apples from on account of the curculio.

Mr. Kellogg—Is it posisble to jar curculio down from apple trees? Will they not come down from the upper limbs and catch on the lower?

Prof. Goff—The apple curculio is more difficult to manage than the plum, because with the plum the insect often drops with the fruit, and if we have chickens in the neighborhood the chickens will pick them up, but with the apple curculio, I believe it is admitted that the insect leaves the apple before the apple drops, so that it does not give us a chance to even let the hogs get at it.

President—I notice that it is only a few days that they do their mischief; two or three days after the apples blossom the mischief is done.

Mr. Hatch—As I understand, they do not come very generally over an orchard at first; now suppose a man discovers them coming in on a tree or two, would it not be practocal to destroy the fruit, and if that was done, would there be a reasonable prospect of fair success?

Prof. Goff—I do not know that it has been tried at all.

Mr. Hatch—I notice my own experience was limited to a tree or two here and there.

Prof. Goff—Perhaps it begins in that way, but I think if it is serious it affects all the trees.

President—I think this began at Devils Lake as much as 20 years ago, and it stuck to it until it destroyed whole acres of orchard there, and it has gradually spread around. It has got about all my Duchess trees now.

Mr. Kellogg—Which variety of the Japan plums proved the most hardy after the winter of '99?

Prof. Goff—I do not know that I can say that there is much difference in our orchard. The fact is, we do not have any Japan plums this year. There is only one tree that has any at all on it and that one was in a sheltered place. So far as I could judge from our own experience they are about on a par.

Mr. Hatch—As Prof. Goff was not here at the time the paper was read, would it not be wise to have him tell us something about the varieties of Americana plums?

Prof. Goff—I was away this last season at the time our plums were ripe, so that I did not help harvest them at all. And probably most of you know that we have only one or two trees of a kind as a rule. Not but that we would like to have more, but we do not have the time or room; but I will say that it is our own opinion that the Wyant is perhaps the most productive that we have grown. The Wyant, I think, is bearing more fruit than any other one variety, and the fruit is large and very good. The Surprise seems to be the most promising one that we are growing, that is for general value, but we have not tested them so long.

Mr. Hatch—That is not a pure Americana.

Prof. Goff—It is of doubtful origin I think. It did not show any weakness; it bore well last season, better than ever before.

Mr. Hatch—Is the fruit all right, plum perfect?

Prof. Goff—Well, so far as I know, yes, I noticed nothing wrong. The Ocheeda plum is one that pleases me very much; with us, the tree is grafted; however, whether the grafting has any tendency to make it yield any more I do not know. It certainly is very productive.

A Member—Is there any remedy for the plum pocket?

Prof. Goff—I do not know of any remedy. I always cut it out just as I discover any signs of it, and generally that is the end of it for the season.

President—Mr. Kellogg, I think it was, asked a question starting with some line of discussion.

Mr. Kellogg—I would like to ask Mr. Hatch what will be the

treatment of commercial orchards when cultivation ceases, to keep down the weeds?

Mr. Hatch—Assuming that you cease cultivation about midsummer in a commercial orchard, assuming that your trees are, say, 8 or 10 years old, now the question is, what will you do with the ground? You should not do anything with it, unless the growth of vegetation makes it necessary to remove it; that might be done by running a mowing machine through; the spring harrow might be run through later after the season of growth is over, but it will be desirable to allow a cover crop to grow the last part of the season in the orchard, there would not be any detriment if it grows say 5 or 6 inches high.

A Member—Would you advise sowing buckwheat?

Mr. Hatch—No, I would sow peas, some nitrogen producer. It would be desirable, if you do not have market grass.

Mr. Kellogg—What is the objection to buckwheat the first of July?

Mr. Hatch—Well, in the first place I should prefer nitrogen, for the raising of the buckwheat would add nothing to the ground, and it is a tremendous plant to take moisture out of the ground, it would evaporate a tremendous lot of water that might be in excess, and still I do not know that would be an objection, but I should prefer the vetch or peas or something of that nature on account of its being a nitrogen gatherer.

President—Mr. Coe, we will take up the subject of Farmers' Institutes in relation to horticulture.

Mr. Coe—I do not know that there is any particular relation between the Farmers' Institute and the State Horticultural society. However, I do know that horticulture received a great deal of attention at the Farmers' Institutes. I do know that any institute that I have ever attended there has been a great deal of interest taken in horticulture, and I think that it is helping our society. The placing of the horticultural topics upon the Farmers' Institute program is helping our state horticultural society. It takes, somehow, and I thought a little bit along the line of the publication of our magazine, and I have found that in my best judgment that wherever we can get a subscriber for the Horticulturist, that will help our state society, and I believe that we

can get more members and do more good to our society along the line of the publication of our magazine, and I have found that in my best judgment that wherever we can get a subscriber for the Horticulturist, that will help our state society, and I believe that we can get more members and do more good to our society along that line than any other line that I know anything about. I have taken a litlle pains to ask the editor of the magazine since I have been here at this meeting, whether the subscribers that we obtained at the institutes last year have renewed or whether they have dropped their subscriptions, and I find that the majority of them, in fact, most all of them, have renewed their subscriptions, and if they get interesed in horiculture at the Farmers' Institutes, then of course they will be naturally interested in the Horticultural society, and that will have a tendency to bring them in with us and thus help the society.

Mr. Kellogg—What line of fruits have been the most talked of and the most asked for?

Mr. Coe—This year apples more than anything else; in fact, that is the first subject that they want to talk of this year.

Mr. Hatch—Was that peculiar to any one section of the state?

Mr. Coe—No, I do not think so. Wherever we have been this year they have seemed to want to discuss the apple question.

A Member—Have you an idea of the amount of planting that will take place this coming spring, that is, in the way of planting trees?

Mr. Coe—My opinion is that the planting of trees will be quite largely increased. I do not think that plantings of small fruit will be very largely increased this year.

Mr. Hatch—Judging from the present condition, has the acreage increased any since '98?

Mr. Coe—It has decreased.

Mr. Hatch—How much?

Mr. Coe—From 20 to 40 per cent,, as near as I can find out.

Mr. Kellogg—Has the planting of small fruits been for the benefit of the farmers' gardens, or have the farmers gone into it near towns to make a commercial business of it. Has not there been a drift in that direction?

Mr. Coe—Generally speaking they have not gone into it to make a business of it.

Mr. Hatch—What is the condition of blackberries and raspberries in prospect of yield and planting?

Mr. Coe—To guess at it, I should say in the state today there are not over 25 per cent. of the blackberries there were three years ago, perhaps not that even. Raspberries perhaps 50 per cent, not nearly as much acreage as there was two or three years ago.

Mr. Hatch—To what do you attribute the decrease?

Mr. Coe—Well, there may be several reasons for this. Of course the great reason that the blackberry is so scarce now is because they were killed out last winter, root and branch.

Mr. L. G. Kellogg—What varieties of apples have you been able to recommend in the northern line of institute work?

Mr. Coe—I would not recommend any one to plant any certain variety. We do say this, however, that there seems to be a certain variety of apples that do very well for fall apples, we recommend that they should plant the Duchess, and Wealthy and Longfield, but for winter apples we are at sea.

MEMORIAL EXERCISES.

Prayer by Rev. Mr. Miner.

Wednesday Evening, Feb. 7th, 1900.

MR. LOUDON AS A HORTICULTURIST.

Prof. Goff.

It is peculiarly appropriate that we devote one season to the honor of these pioneer horticulturists of the northwest, and it it is with much pleasure that I give my tribute to the horticultural labors of our departed member—the late Mr. F. W. Loudon, of Janesville. As the originator of valuable new varieties Mr. Loudon easily ranks highest among Wisconsin horticulturists. Indeed, he is the only Wisconsin horticulturist who has

continued his efforts in improving fruits for more than 50 consecutive years. I can do no better here than to read you an articles from Mr. Loudon's own pen, which was printed in the Horticulturist for August, 1899, and which is his last contribution to horticultural literature. (Article read.)

Through the kindness of Mrs. Loudon I am able to present a few other data regarding Mr. Loudon's successes in producing new varieties. It appears that one of his first named varieties was the Martha strawberry, which was grown from seeds of the Wilson in 1885, and which was named for his first wife. This strawberry does not appear to have been introduced. The first fruit of Mr. Loudon's growing that was introduced to culture, and that secured any considerable notoriety, was the Janesville grape. This Mr. Loudon sold to Charles Greenman of Milton, in 1864, for $1,000.00.

The Jessie strawberry was introduced in 1887. It was named for one of his daughters, and was a seedling of the Sharpless. This variety became widely known, and has been very successful in certain localities. The Loudon raspberry, which is the variety of Mr. Loudon's origination that has attained the most favorable recognition, was introduced in 1894. Very few introductions of recent years have become so widely and so favorably known in the brief period of six years as has the Loudon raspberry. It has been almost universally accorded the highest place among red raspberries wherever it has been tested, in spite of the fact that its competitor has almost invariably been the Cuthbert, a sort that was considered up to the introduction of the Loudon a remarkable acquisition. The Loudon raspberry is destined to make the name of its originator a household word among growers of the red raspberry for many years to come, and in my judgment it carries with it more of real honor than very many of the titles that are conferred upon favored individuals by governments and learned societies. We should remember that Mr. Loudon was not a wealthy amateur horticulturist. He was a common farmer who supported his family by the ordinary, homely routine. His horticultural labors were performed not because he was a man of leisure, but in time that was snatched from a busy life and in hours when other cares were

often bearing heavily upon him. His success in developing so many valuable new fruits under such difficulties should reflect some shame upon the large number of farmers who claim that they cannot find time to make a garden or to do anything to promote the adornment of their homes. It should also be an inspiration to young horticulturists who have tastes that lead them toward experimening with new varieties of fruit.

A sentiment has sometimes been expressed in our horticultural discussions to the effect that young fruit growers should not dissipate their efforts by attempting to produce new varieties, but should confine their work to lines that will pay them better financially. Suppose Mr. Loudon and Mr. Gideon had followed this advice and had gotten together a few thousands of dollars more of money, and left us without our Wealthy apple and our Loudon raspberry. Would they, or the people of the northwest be better off than they are today? Have they not accomplished far more for their families and fellow citizens by their patient labors in the course they have pursued than they could have done by aiming only to save dollars? I leave the question for you to answer.

This gives me the opportunity to express a sentiment that has grown to be a conviction with me. The importance of developing improved varieties of fruit as a factor in promoting civilization and national prosperity has been far too little appreciated by students of civil science and political economy. The value of fruit growing as a factor of national wealth and prosperity would not of course be denied, but the fact that the successful production of fruit on a commercial scale is only rendered possible by the development of successful varieties has not been generally recognized. Hundreds of unsuccessful attempts were made to grow the grape in this country, resulting in the loss of many thousands of dollars, because the right variety was not found. The hundreds of thousands of acres of fruitful vineyards that now border our northern lakes, and that beautify our hillsides from the Atlantic to the Misisssippi and beyond have been made possible only through the patient efforts of a very few devoted horticulturists, chief among whom may be named the late Ephriam W. Bull, to whom we are indebted for the Concord grape.

Yet this most worthy benefactor of his race recently died in extreme poverty. In like manner the strawberry business that has now grown to such gigantic commercial proportions was impossible until Captain James Wilson of Albany, N. Y., gave us the famous Wilson's Albany strawberry—the first commercial strawberry that was ever produced. If we were to compute the benefits that these two fruits have conferred upon our country, in profits to their growers, in remunerative labor to the millions who have assisted in growing, marketing and distributing their delicious harvests, I have no doubt that they would surpass in cash value the whole output of the California gold mines, not to mention the health and happiness their products have yielded to our people, and the contentment and comfort they have contributed to rural life. But no monument has been reared to the memory of these horticultural pioneers. They have quietly pursued their humble labors, uninspired by the stimulus of approbation, or the hope of wealth or fame, and we learn of them only when we attempt to trace back the history of their invaluable contributions. Yes, the world at large too little appreciates the kind of work that Mr. Loudon and Mr. Gideon have been doing during the past half century. I wish that we might make a good beginning here tonight by every member of this society pledging himself to poy into the treasury five per cent. of all moneys he shall receive for Loudon raspberries and Wealthy apples, until the aggregate amount contributed shall reach a suitable sum to erect to each of these benefactors a monument worthy of the acquisitions they have bequeathed to us.

F. W. Loudon, as a citizen and business man was active, energetic, honest, and scorned anything that was not manly. In his business career he was beloved by all his employes; he was a most ardent worker, often in his later years he only slept four hours in twenty-four; was active to a fault. He was a little visionary and aimed at perfection in his horticultural pets. He threw away thousands of seedlings that would have made fortunes in the hands of many; his disappointment in that the Jessie did not adapt itself to all soils and locations was a source

of grief to him and deterred his putting out the best of his four thousand (4,000) strawberry seedlings, which I at one time saw in fruit, and helped him to select twenty-five of them, any one of which would have been a fortune to any less honest and honorable originator of new fruits.

My most intimate acquaintance with him has been as a horticulturist. A private talk with him was better than many a lecture; he was always pleased to communicate, always belittling his own efforts; hardly ever attending public gatherings, much less taking the floor unless called out; his death is a loss that can never be known, and only to his loved ones is the measure of that loss realized.

Geo. J. Kellogg.

President Whitford, of Milton College—Mr. President and Gentlemen, I truly deem it an honor to stand before you this evening to present in a brief outline the career and standing of John C. Plumb. With his neighbors, Mr. President, I desire to express our sympathy in the loss that you have sustained, for he was an efficient and widely known member of your body. His death occurred nearly a year ago,—a most severe affliction to his family, an irreparable loss to the community that knew him. I sincerely approve of every statement that was made in your annual report in commendation of his services and recognition of his exalted character, and especially of the work that he has done to forward the interests that you so well represent in this state.

It has been my privilege to know Mr. Plumb for over thirty-one years and know him quite intimately. He was born of Scotch ancestry, reared in his youth amid the hills and mountains of western Massachusetts, received a part of his educational training in Ohio, at Oberlin, and came to Wisconsin 53 years ago. The last thirty years of his life have been spent in the village of Milton. He inherited a strong body, a well-knit, firmly formed, rounded frame. This had been trained by manual labor on a farm in Massachusetts and in its atmosphere and in the midst of his surroundings he had been led to love labor,

to delight in it. I regard that his early experience in labor was perhaps the primary factor in the development of his character. I wish to say here very firmly and very strongly, though my life has always been connected, even from my fourteenth year with institutions of learning, that I firmly believe that we and all men and women about us, are trained more by the work of the hand than by the use of our brains in the enterprises of the world. And it was the fortune of Mr. Plumb that the main part of his training came through work and not through the careful and close study of books. But he was not deprived of opportunities as he came into Wisconsin to be associated with those who knew what literary culture means. He also had fitted himself for a close keen thinking perhaps by the training he had received in school, perhaps more by observation in the special line to which he devoted himself even from his boyhood, for I think his father was a horticulturist also. He had high ideas also in regard to the burdens of citizenship; he was one of the prime movers of the town in many of those efforts that place before the people the opportunities for culture, for attaining the highest ideals in the community. Milton was founded in 1836, and it has never voted to allow a saloon to be opened in the town, and in that direction his influence has been prominent. He seems to have early imbibed the idea that he must be careful in the training of body and caring for his health and was therefore a temperance man in the highest degree. He always stood for these ideas and for these movements that tend towards the strengthening of the body and preventing that which injures and destroys.

To my mind one of the main characteristics of Mr. Plumb was shown through his own calling, that of a horticulturist. He taught scores and hundreds, I believe, of the people how to use shrubs and trees for ornamenting the streets and the roadsides and their fields and dooryards. He taught us how to care for these trees, especially those that are fruit-bearing, he showed us how many mistakes were made by deep planting and in other ways hundreds have been trained to care for those articles that he sold from his nursury. I believe there exists in this country an inborn hatred for a tree. How do you account for Washington cutting down that cherry tree if it did not exist in the

people. Our country was so covered with forests that we cut them down until that most beautiful in all nature, a rounded full developed tree, has almost become a rarity. I have been in England and Holland, and have seen miles and miles of grand old trees that have been living for centuries, honored by men that owned them, and Mr. Plumb has taught scores and scores to look upon a tree not only as an object of beauty, but as an object to be cared for and not to be destroyed because it is a tree. He had opportunities to train a great many, especially young men and students of the institution near by, to work in his gardens or in his nursery, not only giving them a chance to earn funds to pay their way as they were starting in life, or to pay their way while attending school, but has taught them how to manage these vines, these bushes, shrubs and trees, and in association with him in his work, to know him once was to admire him, to be in his presence was to feel at once an atmosphere that you must be nobler, you must look to nobler objects in order to make life worth living and to fill your place among your fellow men.

He was always industrious and had a suppleness, a facility of applying himself, a quickness of comprehension, a quickness of mind by which he could accomplish a great amount of work in a very short time. He was for thirty years one of the most faithful and efficient trustees of Milton college; he held that place to the hour of his death; he was on the most important standing committees; he was often there in consultation with the officers of the institution, with the students and with the faculty, in helping them to carry on their hard work in the school. Oh, how many a young man and a young woman pursuing for instance the study of botany, coming across some practical question in regard to a plant or portion of a plant, would go to the horticulturis and he would sit down, plainly and quietly giving the information that was desired and upon the secrets which were revealed to him, but which are not even known sometimes to teachers of botany.

I ought to speak of Mr. Plumb as a citizen in regard to some public efforts. It may be known to you that the patrons of husbandry have a society in our town, and for thirty years they

held their yearly meetings, as well as special sessions, and these meetings were largely attended. One of the great laborers in that association, one that has been a kind counselor, one that has presented papers and addresses, has been Mr. Plumb, throughout all the years that he lived at Milton.

Again he was a pronounced Christian man, a Congregationalist of the old New England type. He found that a society had been formed by the influences sent out from western Massachusetts, the first church of the time met in our state of Wisconsin, he became a member of it, he was an officer, he was found regularly at its meetings, he exercised a strong influence in that association among the people that belonged to it.

You do well in these memorial services, not only to place his likeness here before you, but to resolve in your hearts to cherish his memory and to accept the teachings that he practiced all his life.

Mr. President, Ladies and Gentlemen—Although from another state I would mingle my grief with yours over the death of those eminent horticulturists to whom we pay this memorial tribute.

They have built themselves monuments which will last as long as horticulture will be in existence. I had the good fortune to be personally acquainted with Mr. J. C. Plumb.

It was with profound sorrow I learned through the medium of our horticultural magazine the decease of this friend and brother horticulturist, and when I read it to my family they bowed their heads in grief. They never have heard or seen anything of Mr. Plumb except what I had told them about him, and I had spoken of him so frequently that they felt as well acquainted with him as if they knew him for years.

It is a great honor to me that I have the opportunity to be with you at the memorial of this great and noble man. I do not feel myself worthy nor able to speak on this occasion, but feel that it is a great privilege to pay a tribute to the man to whom I am indebted so much. I know that words can not express my

feelings, but I will tell you in humble words that Mr. Plumb has been to me a teacher in horticulture and a model of character. In my younger days I had the opportunity to work for him and he was my first teacher in horticulture in this country. Of him I learned why root grafting is superior to budding in apples trees how to propagate apple seedings, how and when to prune young and old trees, and when not to prune trees, why the planting of young fruit trees is an advantage over the planting of older trees. In short all the principles in horticulture I learned of Mr. Plumb, which have been of great help to me in my pursuance of the business. Mr. Plumb's instruction always was thorough and brief. His knowledge of the different kinds of apple trees was remarkable. I never have seen him fail to tell the name of an apple tree by its appearance and wood, and when he did not know the name of an apple I do not think if any body else would have known it.

If Mr. Plumb never had been any more to me than a teacher in horticulture I would be indebted to him for my life time, but he was more to me.

Mr. Plumb was one of those noble characters that will make a good impression upon all who have the opportunity to be with him and be benefited by his good example.

I am thankful today that I had the opportunity to be with him for some time.

Mr. Plumb's honesty, patience and kindness; his willingness to advise, instruct and help others, without thinking of himself, made such an impression on me that I could not help to make some of it my own.

When I worked for Mr. Plumb at first I would smoke my pipe in the evening. He was an anti-tobacco man, but he never forbade me to smoke. After I learned that he did not like smoking I threw my pipe away and said: "I shall not hurt that noble man's feelings with my smoking."

Mr. Plumb was not only a great horticulturist and of noble character, but he was also a christian gentleman and always tried to lead others to live a christian life. Every Sunday morning he invited his employes to go to church with him, and in the afternoon gathered them all around him with his family to teach

them the Sunday school lesson. I think back with joy on those hours in his parlor when we were sitting all around in a circle each with a bible in his hand, reading the lesson responsively and Mr. Plumb would ask questions and give explanations. Not alone did he teach us Sundays, but he also taught us during the week with his kind and patient deeds which often spoke louder than words.

I will tell you one incident to show how kind he was even to the dumb animals.

One morning I was awakened by a talk near my bedroom window and when I looked out I saw Mr. Plumb driving a cow out of a Dahlia patch, which was in full bloom. With such kindness and patience did he drive that cow out that I was astonished and asked him, how he could keep so cool? He replied: "That poor creature don't know any better." I felt that he was right.

Spurgeon says in one of his sermons: "If a man becomes a christian, his dogs and cats will be benifited by it." Mr. Plumb's life gives a good illustration of this.

"An honest man has gone to rest,
As e'er God with his image blest;
The friend of man, the friend of truth,
The friend of age the guide of youth;
Few hearts like his with virtue warmed,
Few hearts with knowledge so informed.
In the heavenly world he lives in bliss,
And also did he make the best of this.

Frank Yahnke.

Mr. B. F. Hoxie—On the subject of a sketch of Mr. Thayer's life, I must speak from an association and an acquaintance with himas a horticulturist of only a few years, and from that association of a few years I think we must mark him as one of the men who did much for this soicety. Let me briefly repeat here these important facts in his life.

I met him first December 13th, 1897, at Sparta, his home. Mr. Thayer started a fruit farm in 1886, he was a member of the legislature in 1882, was elected three times as mayor of the

city of Sparta, he was elected president of this society in 1891. I first met Mr. Thayer at a dairymen's association in Sparta. He was at that time mayor of the city and of course he gave us the address of welcome. I was immediately struck with the bearing and the very affable manner of Mr. Thayer and the keen perception which he seemed to have and displayed for the wants of every one of the members of the association and also of the audience.

I next met him in Sparta at a Farmers' Institute, and I found the same characteristics of the man. I found also that while he was burdened with the business of the bank, he at the same time carried on the management of his fruit farm, the man whom he had put in charge and had relied on having proved incompetent. And let me say that Mr. Thayer's fruit farm was more than a fruit farm, it was a garden spot, well tilled, well cultivated, that there were acres in different kinds of fruits, that it was well kept and in the most methodical manner. Everything seemed to be done just at the right time and by the master hand that knew how to do it. And so when he joined this society, I thought, with others, that we had made a valuable acquisition. And when the matter came up of the Wisconsin State Horticultural society making a display at the world's fair, Mr. Thayer was the acting president, and the society put upon him and myself the task of taking charge of that work, so by that I came in close contact with Mr. Thayer. I found Mr. Thayer quick to perceive and not very impulsive, but quick to act. There were many matters that came up that seemed to try the patience and the spirit, it did of most any man, and I always found Mr. Thayer the man to take those things pleasantly and to get along the best he could with the fewest words, and I think he made friends with every one that he came in contact with. Of course you know there was a dark place in financial matters in his life which seemed to affect him more perhaps than it did us. When in spite of all efforts the failure of the Sparta bank came, with many others that went down in '93, he felt that he could not fill the place in this society that he had filled for two years previous. Now perhaps Mr. Thayer might have had faults, as we all have faults, but of those I know nothing from my intercourse with him, and I think

Mr. Thayer's intercourse with every member of this society was one of the most pleasant, and we can all say, as I stated a moment ago, that he was a help and a benefit to this society.

Hon. S. M. Owens—Mr. President, Ladies and Gentlemen, it is my misfortune to be personally acquainted with but one of this eminent and lamented trio from Wisconsin whom you are here to pay tribute to tonight. I knew Mr. Thayer personally, and now since I have heard more about Mr. Plumb and Mr. Loudon, I can say truly that it was my misfortune not to know them. We have listened to two tributes to Mr. Plumb tonight—that is enough to make any man love him. This sweet, simple, tender tribute paid here this evening by one man who was Mr. Plumb's hired man at one time, was something that certainly touched us all deeply and profoundly, and then the history given us of him by the other speaker of his ancestry and life and character, makes us all who did not know him regret the fact.

Mr. Thayer I did know and had more or less business dealings with him. I know Mr. Thayer's life went out in a certain kind of gloom, we none of us know how deep and dark that gloom was to him. Grim-visaged tragedy stood by the side of death when his life went out and he stepped down into the shadow of the dark valley, and that visage had been with him day and night for many months before the final parting came. We may say Mr. Thayer was dishonest—no, do not let us say that, do not let us speak that in this holy hour, let us say that he, like thousands of others in those trying days was unfortunate, very unfortunate, and let us repeat, as was so charitably suggested a while ago, that his sufferings were greater than any that he inflicted upon us. I can not believe Mr. Thayer was dishonest; while I know he was useful, I know how earnest he was in his work, and while he was condemned by some here and there, I know that through the work he did, I know that by reason of those practical, terse, simple, plain bulletins that for years he sent out all over this country on the wings of the willing press, did a world of good. I know there are thousands of families today that are enjoying the sweets of fruits that they would not have known but for the earnest, helpful, persistent teachings of this same Mr. Thayer. I know, as I helped circulate many, many thousands of those lit-

tle bulletins, I personally know that they were seeds planted that did a world of good, and I know that the people are owning and enjoying fruits today that else would not have known them had not Mr. Thayer done that work. Let us remember these things, my friends, and even if Mr. Thayer did wrong, let us forget the wrong and remember only the good. Let us believe and practice this axiom, that the good that men do shall live forever, and let the evil, if they did any, be buried with their bones. It is meet that we do that; it is better for us; it makes us better men and women, it enlarges and enriches our own hearts if we do so.

Of the quartet of men, then, of whom we will speak tonight I knew two, because I was personally acquainted with Mr. Gideon. I knew him well. Sometimes I think I knew him better than he knew himself, and oh, how that man was misunderstood, and how prone he was to misunderstand others too. Mr. Gideon was a man of peculiar temperament, he was a man of strong prejudice, he was a man of peculiar beliefs, he was a man of singular thought and action. He was a man suspicious in his nature of others, oftentimes; a man who misunderstood me and did me wrong, for instance, but I never treasured it against him, because with all his peculiarities, with all his failings, with all of the disagreeable things that might possibly be said of him, he was ever true, he was ever honest, he was ever consistent, he was ever faithful, he ever believed he was right, no matter how wrong he might have seemed to others. I think sometimes he was wrong, and so are we all. I think sometimes he was eccentric and peculiar to the limit of sinning, but who can blame him for that. He was born so. As Brutus said to Cassius, "My mother made me so," and his mother made him so, he was no more responsible for those peculiarities of his nature than those whose physical deformities are their birthrights. Mr. Gideon was one of the men who made an apple grow where else the apple would not grow at all. We will say we will build a monument to Mr. Gideon, too. I would like to see it done, but in the hearts and homes of thousands,—aye, millions of people, there is in each one a monument to Mr. Gideon; true, it bears no inscription, as suggested by Prof. Goff, but it needs none; it is that kind of a monument that appeals to the best there is in us all the time.

We know Mr. Gideon was the originator of the Wealthy apple, named, as you know, for his wife, whose name was Wealthy, but how much broader and deeper a signification has that name than that! It is a mine of wealth, not money alone, but a mine of wealth, of comfort and satisfaction, that consciousness that now we can have an apple where it seemed as though the Almighty had declared that the apple should not grow.

Now, my friends, I am moved to say another thing. I am not here to talk very much personally about these people. You know them, and those of you who did not know them, have learned of them tonight. But while I am here I want to say one word that was also suggested to me by a few words said by Mr. Kellogg, I believe. Why is it that we must wait until grim death comes before the asperities and prejudices of our natures can be smoothed down and planed away to the extent that may do men justice? Why is it that we are dumb in the praise of men until death has put its seal upon his senses, and then we stand around his bier and there we proclaim our affection, our regard for him, as we would not think of doing while he lived? There are many of you, my friends, many of us whose whitening hairs and whose increasing and more deeply pencilled wrinkles year by year are proclaiming to all the world that time will soon cease for us; we will soon be made the targets of that archer that finally comes to all. May this thought not teach us that now, today, tonight, is the time to have a broader and deeper, purer and holier charity for all friends who live. If this occasion will be the means of enlarging that thought, this broadening of charity, it will be by all odds the most profitable session of your whole meeting here this year.

M. A. THAYER.

By A. J. Philips.

An extract from a recent letter from Hon. John C. Spooner, who was intimately acquainted with Mr. Thayer, says: "He was a public spirited, enterprising man, full of energy and I always thought of kindliness. If he had any faults they could be imputed to the enthusiastic and sanguine temperament he possessed He was a great believer in the country and in his own ultimate success. He perhaps took too rosy a view many times from a business standpoint, and suffered for it. He was making a noble struggle to retrieve, and I heard with great sorrow of his death." When he first began his great work at Sparta, when only three or four acres of small friut were grown there until since that time, the amount has reached from 600 to 700 acres in a single year, and acknowledged by the best men to be largely due to his energy. There are thousands of young people today in Wisconsin who date their first start in small fruits to his generous work in sending out gratuitously to the school children. This he started in 1891 to the school children of Sparta. The next year he extended it to the school children of the state, which increased later to over 25,000 packages. He issued a bulletin, which not only was published by different periodicals of our state but they were also published in Canada, England, Holland and Mexico. This was even asked for and published in our best dairy papers, and brought over forty valuable exchanges to the Thayer fruit farms. He was president of this society two years, mayor of the city of Sparta for three years, was register of deeds in Monroe county three years, was member of assembly for two terms. After his removal to Price county he did much to encourage gardeners and fruit growers—of that county three years ago I spent three days there and at the anniversary of the great fire there, and saw as fine an exhibit of vegetables as I ever saw. At the time of his death he was president of the Price County Agricultural association.

Mr. Philips (continuing): Mr. Gideon, as Owen said, was a peculiar man, a man of peculiar convictons, but he was true

to his convictions. He said when he commenced the fruit business and they started their fairs in Minnesota, that he would never exhibit a fruit for premium so long as the Minnesota fair tolerated horse races and gambling and drinkin on the fair grounds, and he never did. For years the Minnesota society were anxious to have that grand old man's fruit at the fair, but they could not get it. They finally devised this plan. They realized he had done a great thing for the state of Minnesota and the whole northwest, they devised this plan, they said, we will make him a present of one thousand dollars for originating the Wealthy, then we will buy or lease a piece of land and we will employ him to plant seedlings and see if we can not bring out something for a winter apple as good as the Wealthy is for the fall apple. They are energetic fellows up there; they wanted to make a grand show at the fair, and they did let them do this, they did give him a thousand dollars; it has been said he died poor, in one sense he did not; he had 100 acres of land worth $100 an acre and that was his own; he would not mortgage that for clothes or for the comforts of life, he was bound to keep that clear of incumbrance, and he did it, but still he was short of ready cash. After it ran along for some years there began to be some fruit, and they said to this old man, "We want you to bring and show your fruit and compete for the premium." The old man knew what they were doing, he had his own fruit land, he said, "Gentlemen, if there is anything on that experimental orchard that belongs to you that you want to exhibit, come and take it, but not an apple can you take from my orchard as long as you allow gambling and horse racing at your fair." A thousand dollars to pay for the Wealthy apple and a thousand dollars a year to take care of that orchard, although he did not have much means, would not buy the old man. Last year he had some apples, but I think he began to realize that the end was near, he had a beautiful lot of Duchess, a half bushel I think on the table, and some fine seedling apples. I said to him, "I thought you were not going to exhibit apples as long as they had horse racing." He said, "Yes, I am not exhibiting apples for a premium, but I tell you my house burned up, the state society made me a present of $100, there have been some

kind friends in Minnesota and some kind friends in Wisconsin that have sent me some contributions this fall, and I feel that perhaps I have said and done things that were not just right, but I always tried to do what was right, but I have not exhibited those for premium, I have not taken any money." That was Mr. Gideon.

Tuesday Morning, Feb., 8th.

Dr. Loope in the chair.

The Chairman—We will now listen to an address by our president, Mr. Johnson.

PRESIDENT'S ADDRESS.

Friends, Members of the Wisconsin State Horticultural Society: The rules of our society provide that the president shall deliver an annual address upon some subject connected with horticulture. But first allow me to express my appreciation of the honor you have conferred upon me by calling me to this chair. When I think of the able men who have preceded me I take your action, not as the result of your judgment, but rather as the expression of the kindly feelings of your hearts. I esteem it an honor to represent this society on account of the character of its members—men with a purpose, and so devoted to their calling that they follow it regardless of personal sacrifice. I speak of this trait today because it has been specially brought out by the events of the past year. The members of our society met the losses of the past winter heroically, as matter of course.

In many respects the work of the society the past year has jogged on very much as usual.

No description could do justice to the royal reception given to our summer meeting by the good people of Eureka. That was one of the things that must be realized to be fully appreciated.

The work at our trial orchard—near Wausau—has been under the direction of our worthy secretary from the start. I have never seen this orchard, but I judge everything is in good shape, for our secretary seems anxious to have the whole society go and

see what has been done. I think the amount of our appropriation for this purpose will justify us in establishing another trial orchard in the near future

Notwithstanding the almost total failure of the apple crop the past season the display at our state fair was very good. It was not equal in quantity or quality to that of some former occasions of this kind, but all things considered it was a remarkable display.

We sent delegates to neighboring conventions as follows, viz.: To northern Illinois, at Freeport, Prof. E. S. Goff; to northeast Iowa, at Cresco, A. J. Philips; to Minnesota, at Minneapolis, Irving C. Smith. I would recommend that another year we add Michigan to our list of fraternal delegates. I wish that we might send delegates to the state conventions of Illinois and of Iowa, even if by so doing we should have to drop northern Illinois and northeast Iowa.

We have continued the publication of the Horticulturist, having issued six hundred numbers each month. This magazine goes to each of our members and has kept you well posted as to what has been done. Perhaps I had better mention some of the things that have not been done.

The first duty laid upon our society by the laws of this state, is "to aid in the formation and maintenance of county and local horticultural societies." The term horticulture is broad. It includes flowers as well as fruits. Gardening and village improvement fall within its scope. I cannot conceive of a place in our broad state that should not have a local interest in some of these. For several years but little has been done to encourage the formation of local societies and the oversight over those already formed has been loose, with the result that the number of local societies in our state is less now than it was six years ago. I call your attention to this because it seeems to me we are failing to protect a vital point. This question constantly comes to my mind. If we fail to foster local societies how long will the state society require our care?

One of the important problems that confronts the fruit grower is the distribution of his products. Under the present system of distribution the grower furnishes all of the capital, takes all of

the risks and bears all of the losses. Equity would seem to demand that others who share the benefits should shoulder part of the risks. It is an intricate and complicated problem. All problems seem difficult until solved. Of course no two growers have exactly the same problem, but the question as it comes to each one of us has many points of resemblance. It does seem as though we now have enough of the known quantities to enable us to find the unknown.

Since our meeting of a year ago several members of this society have closed their pilgrimage on earth. What they wrought in our cause still lives to bless the world, and their names will be treasured in our memories as benefactors to mankind. They rest from their labors. Others have bestowed fitting eulogies. Be it ours to draw from their noble example lessons of courage and inspiration for the duties that devolve upon us.

The loss of these veterans brings forcibly to our minds the fact that, to make this society effective and perpetual, younger men and women who are interested in horticultural work must come forward and lend their earnest efforts toward success by becoming active workers and members of this society.

In conclusion let me congratulate you on what our society has already accomplished, on the brilliant names connected with its history. The past is secure. The great duty of fostering and extending its beneficent influence still remains. Be it ours to faithfully perform present duty and the success of the past is assurance of the glorious future.

It was moved by Mr. Edwards that a committee of three be appointed to pass upon the president's address and recommendations.

Mrs. Campbell moved to amend by referring report of committe on Resolutions, which amendment was adopted and motion as amended was carried.

Report of secretary was read and referred to Finance committee.

Members of the Wisconsin State Horticultural Society:—In presenting to you my sixth annual report, I will deviate somewhat from the usual custom and after giving a few points of interest, will proceed to give from some records I have found, a few facts concerning the workings of our society at and since its organization up to 1877, since which time we have published our annual report—these facts will be printed—and serve in place of a report prior to 1877. Our past year's work started in real earnest when we decided to hold our annual meeting with the good people of Eureka. The sessions were interesting and well attended, an account of which appears in this report later on. I find the proposition to hold our next summer meeting at Wausau and give our members a chance to see the work we are doing in the trial orchard meets with general approval. Unless this winter should be sufficiently cold to kill the fruit buds, there surely should be some fruit there to inspect next season.

Our library is in the same condition and in the same hands, as it was last year. I can not but wish that we had a pleasant room in the capital that we might keep our volumes in better shape and adorn the walls with pictures of former members who took so much interest in the work of the society. I made a very creditable exhibit of our Wisconsin seedlings at the Minnesota state fair last fall, and in November visited the extensve experimental grounds of C. G. Patten in Iowa. I think he has many things there brought out by his untiring perseverance and energy that will prove valuable to the northwest. He has kindly promised us some of his best new varieties for trial at Wausau. I regret very much both for myself and our society that I did not visit Mr. Gideon last fall and learn more of his new seedling apples before his death. I went to the Minnesota meeting in December and spent one day afterwards on his grounds and one day with Mr. Lyman and Mr. Cummins,. both extensive experimenters. I was much interested in the Lyman's Prolific crab. I secured several sprouts from the roots of the old Wealthy tree, one of which I have given to Prof. Goff and the others I will plant myself. If we find the Wealthy will propagate and bear on its own roots, it will partially solve the problem of hardy roots.

A few of our members have dropped out, finding they can get the report and magazine cheaper at sixty-five cents a year. I will now give some items of the history of our society. I find this society was organized in Janesville, September 28, 1864, by electing Fred Curtis of Rocky Run, chairman, and O. S. Willey of Janesville, secretary. After the organization was effected, Mr. J. C. Plumb of Madison, whose services in behalf of the society were so kindly spoken of last evening, offered the following resolution which was adopted: Resolved, that in the death of Mr. A. G. Hanford we have lost an active and faithful officer and brother of this society, and the horticultural interests of the northwest a most intelligent and zealous supporter, and while the many ever green and flowering monuments of his and our art and profession remain, we will cherish the memory of his genial nature, good precepts and untiring devotion to the cause of horticulture.

I find that G. J. Kellogg is the only man that was present at the organization of this society who is present here today, and he made the first motion to appoint a committee to draw up the plan of organization and that O. S. Willey, J. C. Plumb and Prof. L. L. Knox were appointed said committee. This committee decided the name to be as it now is, the Wisconsin State Horticultural society. Officers to be a president and a vice-president from each county in the state and a secretary and treasurer. The first president was Hon. B. F. Hopkins, first secretary J. C. Plumb, first treasurer F. C. Curtis. One of the men elected vice-presidents I know of four who are still alive after thirty-six years of work, to-wit, G. J. Kellogg, J. S. Stickney, A. G. Tuttle, Henry Floyd. The constitution was ratified January, 1865, at this meeting; on motion of J. C. Plumb the Wilson was declared the best strawberry for all purposes. Houghton gooseberry recommended for general cultivation, also red and white Dutch currants. Doolittle Black Cap raspberry also. It was voted that blackberries were unworthy of cultivation in Wisconsin. Concord and Delaware headed the list of grapes. Apples voted extra hardy, Red Astrachan, Duchess, St. Lawrence,, Winesap, Fameuse, Tallman Sweet, Perry Russett, Pome Gris and Red Romanite. No plums were recommended that are now

on our hardy list. Of cherries, Early Richmond was then in the list. In 1866 the same officers were re-elected. At this meeting G. J. Kellogg said he had grown 240 bushels of Wilson strawberries on an acre without special manure. At this meeting Mr. Greenman appeared and said he liked the Hartford better than the Delaware grape. Judge Knapp also seemed to be enthusiastic on the subject of grapes. Kellogg entered protest against the Sweet June apple and it was struck from the list. Mr. Plum opposed the Red Romanite. Willow Twig was added by Kellogg. Fall Stripe by Mr. Peffer. Northern Spy was added by Chandler. Annual meeting of 1867—The officers elected at this meeting were Hobbins, president; O. S. Wiley, secretary, and Geo. A. Mason, treasurer. Many grievous stories of the fraudulent tree peddler's work related, and his work referred to a special committee consisting of Lawrence Smith and Hobbins. At this meeting it was resolved to offer a premium of $100.00 for the best ten acre plantation of timber and $50.00 for the best five acre plantation to be planted in the spring of 1867, and awards to be made at the expiration of three years. Mr. Tuttle spoke in favor of hills for orchards. Mr. Smith thinks exposure to sun on southwest side caused death of trees. Mr. Plumb favored both hills and protection. The Rock county society was organized that year and had delegates. Delegates were also present from the Madison society, the Appleton and Northern Iowa cities. Charles Waters made a report from Vernon county, M. D. Proctor from Pierce county, H. H. Powers from Green Lake county, E. A. Roby from Racine county, and J. S. Stickney from Milwaukee county. A list of five varieties of apples was named as follows: Astrachan, Duchess, Fameuse, Tallman and Golden Russett. Mr. Tuttle said he would plant only ten Duchess in a thousand trees. Mr. Plumb offered a resolution favoring the planting of the best of the native plums. Transcendent and Hyslop crabs were also recommended. Wilson strawberry still at the head of the list, and wild blackberries were recommended for planting. C. M. Plumb of Lake Mills showed 34 varieties of apples. Stickney and Kellogg, both exhibited apples. Fraud began to creep in at this early day as will be seen by the following resolution that

was adopted, and I fail to find where it ever was rescinded. Any member of this society offering fruit for premiums, except in the name of the grower, his exhibition shall be rejected and the offense shall reject him from the society. At this meeting it was decided to hold summer meetings and exhibitions. Mr. Lawrence objected to placing Wilson first on list of strawberries and Hobins agreed with him. F. S. Lawrence reported sales of apples in Wisconsin that year of 272,452 bushels, worth $386,683. Annual meeting of the year 1868—The three principal officers were again, Hobbins, Willey and Mason. At this meeting Mr. A. G. Tuttle was awarded 1st premium on an essay on Causes of Diseases and Protection Necessary for an Orchard. Brother Dartt loomed up at this meeting but had then not learned to girdle, but asked how far apart to plant trees. Twenty feet apart each way was decided on by a vote and the heads two feet high was decided on by a resolution offered by J. S. Stickney. In discussion on apples for trial Kellogg kicked vigorously on the Alexander but liked the Ben Davis so well that it was placed on the list. The Soulard crab was condemned. Mr. Plumb said on top grafting that he believd the top had more influence on the stock than the stock had on the top. Early Richmond still heads lists of cherries. Kellogg recommends the Lombard plum. Mr. Stickney said the best way to get rid of the vender of poor fruit trees was to raise more at home [sound today—Secy.]. Fruit shown: Kellogg, 17 varieties; Dr. Ozane, Jr., 20; Stickney, 10; A. G. Tuttle, 10; A. E. Elmore, 1. J. C. Plumb offered a resolution, which was adopted, saying the interest of fruit growing is one of great and growing concern to the health and wealth of our people [sound, as wealth without health is of but little benefit—Secy.]. Annual meeting 1869—Officers elected: Hobbins, president; A. G. Tuttle, vice president; O. S. Willey, secretary; treasurer, G. A. Mason. I. Gould recommended large trees for planting,, and J. S. Stickney opposed him and the majority staid by the latter. Mr. Tuttle said timber soil for trees was much better than prairie [sound yet—Secy.]. First list of apples remains unchanged. Mr. Cover spoke highly of the Ben Davis. Mr. Tuttle had the Early Joe placed on the trial list, and gave the Walbridge an introduction to the society. Mr. Stickney

advocated the Green Prolific strawberry in preference to the Wilson, in all except shipping. Mr. Stickney spoke of the Briton blackberry first at this meeting. The Janesville grape was mentioned and recommended for trial by J. C. Plumb. Adopted. G. J. Kellogg recommended the Worden seedling of New York. Mr. Peffer presented an essay on the value of the native plum. Flemish Beauty was said to be the only pear hardy enough to stand our winters. Dr. Hobbins spoke in favor of English sparrows and was appointed one of a committee to procure a pair. Mr. Kellogg spoke in favor of setting several grafts in the ground and leaving one for an orchard tree without mutilation [very sound advice]. Mr. Knapp and Mr. Tuttle both approved of low tops for apple trees. Annual meeting 1870—Offcers: Mr. Hobbins, president; secretary, O. S. Willey; treasurer, G. A. Mason. The question of dividing the state into districts and of the organization of local societies was brought up. On motion of Mr. Stickney a summer meeting was held at Oshkosh, in June, but owing to hot, dry weather was poorly attended. Mr. Gould offered the following resolution: That the adoption of cultivated crabs as a stock on which to graft or bud our apples is a step in the right direction. J. C. Plumb claimed they would not unite well. Stickney feared dwarfing. Mr. Stickney offered a substitute to recommend them for trial by nurserymen. At this meeting, for the first, the Duchess was placed at the head of apple list for hardiness. Premiums for new members were offered by Greenman, Plumb, Kellogg, Tuttle, Waters, Gould, Stickney, Peffer and Morrow Brothers. Annual meeting 1871—At this meeting President Hobbins tendered his resignation and J. S. Stickney was elected. The secretary and treasurer were re-elected. The Utter was first mentioned at this meeting, Findlayson recommending and Plumb opposing it. Mr. Stickney spoke favorably of it for a market apple. It was substituted for Alexander. The Ben Davis was kept in the commercial list and the Walbridge for further trial. Mr. Hastings read a paper on Domestic Wine and Temperance, which drew out much discussion. Annual meeting of 1872—Officers: J. S. Stickney, president; O. S. Willey, secretary, and Geo. A. Mason, treasurer. G. W. Pinney spoke favorably of Door county for

producing fruits. Then followed an interesting talk, or discussion, on Top Grafting, Felch, Tuttle, Plumb and Weir participating. A resolution was adopted requiring the members to pay twenty cents additional for postage on annual report. Meeting of 1873—Officers elected: J. S. Stickney, president; G. E. Morrow, secretary; G. A. Mason, treasurer. At this meeting Mr. Tuttle spoke favorably of the Early Bargamot pear. Mr. Felch opposed pear culture, and G. J. Kellogg fixed the price of Wisconsin grown pears at $5.00 each. J. M. Smith was present at this meeting. Twenty-five judges were appointed to judge horticultural products at the state fair. Wealthy was first noticed at this meeting. Annual meeing 1874—Officers of 1873 were re-elected. Dr. Mygatt of Kenosha spoke in favor of top grafting. J. S. Harris of Minnesota put in an appearance at this meeting and said: "We have met with wholesale destruction in Minnesota. Duchess escaped with little injury. Wealthy stood well." E. Wilcox showed up and said last winter all trees were killed more or less—Duchess the worst. Mr. Hatch's first paper was read at this meeting, though he was not present. At this meeting L. Woodward favored longer trunks and Mr. Tuttle agreed with him, saying six feet was none too high for the head of Golden Russett. Dr. P. A. Jewell of Lake City, Minn., was present at this meeting. E. Wilcox offered a resolution favoring crab roots, which was vigorously discussed by all present. Mr. Jewell said Tetofski and Duchess stood best in Minnesota the past winter. Peach and apple next. Wealthy is the only Minnesota seedling that is doing well. Wilcox said the Ben Davis was worthless. Jewell said in Minnesota they had lost more trees of it than any other. Geo. Kellogg still spoke in its favor. It was kept on the list by a vote of 10 to 7. Annual meeting of 1875—This year I set my first Wealthy trees, sixty in number, bought of A. P. Jewell of Lake City. A. G. Tuttle was elected president; F. W. Case, secretary, and Geo. A. Mason, treasurer. Mr. Olds was present at this meeting. The N. W. Greening was first mentioned at this time by E. W. Daniels. At this meeting the state was divided into 12 districts for observation. Annual meeting 1876—Officers: A. G. Tuttle, president; F. W. Case, secretary, and Geo. A. Mason, treasurer. A committee, consist-

ing of President Tuttle, J. C. Plumb, G. J. Kellogg and G. P. Peffer, was appointed to consider the Centennial exhibition. J. C. Plumb exhibits 21 varieties of apples at state fair; Peffer, 4; Kellogg, 6. A. J. Philips exhibited the Avista seedling. Chas Hirschinger exhibits six varieties. A. L. Hatch made a motion that we recommend no lists of fruits. A resolution on the death of Mr. Morrow was offered by Geo. J. Kellogg, who also offered another that we recommend those fruits that are doing the best in the locality where they are growing, which has been sound advice ever since. In conclusion will say I have settled down to this conclusion, that to raise all the fall apples we need in Wisconsin we have only to plant and care for the best varieties of home grown trees we now have, and to raise winter apples with any degree of success we must top graft on the best stocks we now have and put forth the best efforts we can to discover something among our new, hardy seedlings that is still better, and to that end I have selected one at Mr. Patten's, two among Mr. Gideon's large lot of seedlings, and two at Mr. Lyman's. These are hardy, vigorous, square-shouldered fellows, and I shall set grafts of them in the coming spring, on purpose to grow stock for top grafting, for I do feel that owing to the low estimate that is placed on orcharding in our state as compared with Minnesota, we should make a vigorous effort to place it on the list of other farm industries or quit the business. About a month ago I wrote to Mr. McKerrow relative to having a full description of what our state society is doing in the trial orchard at Wausau, to enlighten and educate the people of the state along the line of hardy and suitable trees for planting in our state. This description would go into over 50,000 homes in the state, thereby bringing it to the attention of many farmers who otherwise would know nothing of it.

President—I do not know of any other proceeding that should come up before the election of officers. I think the constitution provides that these officers be elected by ballot. Have you any special wishes in regard to the manner in which it should be conducted?

Motion by Mr. Hoxie that the first ballot on election of officers shall be an informal ballot was carried.

First ballot showed 23 votes out of 35 cast for Mr. Franklin Johnson as president, and on motion of Mr. Hoxie the vote was made unanimous.

Dr. T. E. Loope was elected vice president.

Informal ballot for secretary resulted as follows:

Total number of votes cast, 36; A. J. Philips, 15; J. L. Herbst, 17; remainder scattering.

A formal ballot was taken, resulting as follows: Total number of votes, 38; necessary to a choice, 20; J. L. Herbst, 21; Mr. Philips, 15; scattering.

President—Mr. Herbst having received the majority of the votes cast is declared secretary for the ensuing year.

Mr. R. J. Coe was unanimously elected treasurer.

Mr. S. H. Marshall was elected corresponding secretary.

L. G. Kellogg was elected a member of the trial orchard committee.

President—Next in order on our program is the report of the delegates to other states.

Report of delegate from Minnesota was read by Mr. Smith:

REPORT OF DELEGATE TO THE ANNUAL MEETING OF THE MINNESOTA STATE HORTICULTURAL SOCIETY, HELD AT MINNEAPOLIS DEC. 5, 6, 7 AND 8, 1899.

Mr. President, Ladies and Gentlemen:—

Your delegate arrived in Minneapolis at about 11:30 p. m., Monday, Dec. 4th.

The convention opened promptly at 10 a. m., Tuesday, Dec. 5th, in one of the rooms of the new and spacious court house.

Rev. W. T. Scott not being present, President Pendergast called on Rev. Turner to open the meeting with prayer, after which we proceeded to the discussion of the plum question.

There were six short paers, and discussions on same, after the reading of each. The general idea was to set native plums, no one having had success with any of the imported varieties.

Dewain Cook of Windom advanced a method of setting plum trees which was entirely new to your unsophisticated delegate. It was to set the trees eighteen to twenty-four inches deep, and by so doing kill all the roots on the tree and a new growth of roots would start out near the surface, so that in two years' time the tree is really growing on its own roots.

Otto Lugger of St. Anthony Park presented the thought that the insects, or at least some of them, are not disposed to move more than is necessary, and so begin work on the side of the plum orchard first reached, no matter what the variety.

Tuesday afternoon we had two very interesting papers on "Exhibiting Fruit at the State Fair." Prof. Green spoke as a judge, followed by Mr. Wedge as an exhibitor. During the papers and discussion which followed there was a strong plea for honesty in the matter of making a show.

Mr. Dartt objected very strongly to the practice of grouping the different varieties, that is, putting all the Wealthy apples together, all the Patten's Greening, grouped, all the crabs by themselves, etc. The point made by Mr. Dartt was that no man could show his exhibit to his friends because it would be scattered over the whole show. Mr. Dartt also criticised the sweepstakes premiums offered by private parties for the best show of apples grown in Minnesota. Mr. Underwood replied very forcibly and plainly, to the confusion of Mr. Dartt; so it seemed to your delegate, showing that the sweepstakes did not interfere in any way with any private exhibit, but were a very excellent advertisement for the state. Prof. Green stood up for the grouping of varieties, as it made a very much more comprehensive exhibition, and also made it much easier for the judge to give justice to all—as he could not do if things were scattered over the whole building.

Then followed six papers on trees and shrubs for street and lawn planting. Wyman Elliot gave quite an exhaustive list of varieties suitable for street planting, most of which were native. The point was clearly shown during the session that native trees and shrubs are far ahead of imported varieties for street planting. The most interesting paper to the writer was one read by President Pendergast on "The Practical Value of Tree and Shrub Ornamentation About the Home." He took the ground

that what adds to the pleasantness and happiness of life is of practical value, and brought very plainly before the meeting the fact that to be surrounded by the brightness and cheer of a well arranged and well cared for lawn interspersed with shrubbery is of very great value. Happiness is what we seek and as the ornamentals add to our happiness they are of practical value.

F. H. Nutter spoke on "Locating Shrubs on the Grounds for Effect." The idea was to group them in harmonious clumps, not to scatter over the grounds giving what he called a "spotted effect."

Prof. Conway MacMillan of Minnesota State University gave a most excellent and entertaining address on "The Pollenation of Flowers." The professor used numerous colored charts to illustrate his talk, in which he showed in language so simple that the wayfaring man, though fool, might not err therein, the methods by which the pollenation of various flowers takes place. He also corrected some erroneous ideas which are common among fruit growers and even amateur botanists. "Pollen is a spore. Pollenation is a depositing of spores where they can germinate." His talk was so entirely cleansed of the long and incomprehensible scientific terms that it was most entertaining and instructive indeed.

On blackberry culture there were six papers read discussing the various sides of the subject. The substance seemed to be to set young plants on a soil that will hold moisture but not a wet soil. Lay down flat and cover with earth. The largest crop reported, except on a very small area, was about 125 cases (16 quarts) per acre. This was a great deal of a surprise to your delegate, as he expected to hear of three or four times that amount. The profits in the business seemed to be of doubtful and frequently of a minus quantity. Ancient Birton is the variety most used.

Wednesday afternoon and evening were spent at the State Agricultural college. We were shown around the place by a very pleasant professor, whose name your delegate failed to get, though he asked once or twice. Our afternoon session was held in Armory hall, and after a good oyster supper served in the beautiful dining hall of the college, the evening was given to a pleasant entertainment consistting of an illustrated address by

Prof. Hansen on his travels in the east, with music, etc., mostly by the college students.

Thursday morning brought the subject of vegetables. Prof. Shaw showed something of what can be grown in the kitchen garden, the possibilities of which but few people have any idea.

Mr. Vincent Reeves spoke on the turnip as a forage and soiling crop. He advocated sowing seed very thickly and pulling only the best, if any, and then turning in the stock, sheep preferred, to harvest the balance of the crop.

Onion growing was discussed somewhat, but there was a wide difference of opinion on the subject. Some one from Iowa talked about some very large crops and the profits of them—but on being questioned the fact was developed that he grew only one-tenth of an acre and started the seed in the hotbed, the variety being one of the giant sorts which are almost worthless to grow in quantities.

In the reports from various portions of the state the Beder Wood, Captain Jack, Parker Earl and Crescent appeared to be the most profitable of the strawberries. In apples the Wealthy has the leading place, with Duchess, Patten's Greening and Okabena following; also a large number of varieties which promise well, on the experimental list. The whole trend of thought as to new varieties was that, to be of value, they must be originated at home and developed to suit the climate if they are to live and thrive. Lyman's Prolific crab was so highly recommended that your delegate turned orchardist and ordered a dozen trees. So if any of you are up his way in two or three years you may expect to find crab trees so loaded with fruit that there will not be room enough to receive it. And any of you who may wish to know anything in the line of apple growing will know where to find an authoritative answer to your every inquiry.

Thursday afternoon there were several memorial addresses on the late Peter M. Gideon, in which was brought out the great work accomplished in producing the Wealthy apples; also many other promising sorts, as yet improved as to their value. The forestry session following was not attended by your delegate.

The papers on flowers and kindred subjects occupied the Friday morning session and were entertaining and to the point. Mrs. Frances L. Town spoke on flowers as an index to character.

She endeavored to show that one might see considerable of character in the manner of laying out and setting the flower garden.

Mrs. Underwood's paper on "Nature Study" was a most eloquent plea for the education of the country children to see and appreciate the things around them, and explained their lack of interest in them as due to their lack of knowledge of them. She spoke of the various things about the farm and country, showing the great advantage the country child has over the city child; yet, with all the little chicks, the kittens and lambs, the colts and calves, the woods and flowers, he has nothing to show his city cousin; the reason being as before stated, he has not been taught to see the beautiful in the works of God in nature. She urged a more earnest study of the works of nature while the children are yet in the primary grades of school work. This session being the one in conjunction with the Ladies' Auxiliary, brought out considerable discussion on the subject. President Pendergast spoke quite strongly on the lines followed by the previous paper, and hoped that more would be done in nature study, and Mr. Underwood suddenly discovered that the ladies are of great value to the balance of humanity and especially to the horticultural society. While he is slightly tardy in the discovery, it is better late than never.

The last session was devoted to seedling apples, and was discussed quite thoroughly by several old growers, but there was so much difference of opinion as to the best methods to pursue that it is hardly worth your while to listen to any attempt on the part of your delegate to separate the wheat from the tares.

The exhibit of apples was quite extensive and showed plainly that Minnesota can grow apples and grow them in variety. It is only a question of a few years when she will have apples to sell; or appearances and reports are very misleading.

The financial report is as follows: Railroad fare, $16.76, paid by our treasurer; hotel bill, $6.00, paid by Minnesota society.

In conclusion let me thank you for the honor and trust conferred upon him who has so lately become one of your number, and express the hope that you will find no occasion to repent of your action.

Respectfully submitted,

Green Bay, Wis. Irving C. Smith.

Report of delegate to the Iowa Society was read by Mr. A. J. Philips:

REPORT OF DELEGATE TO THE MEETING OF THE NORTHEASTERN IOWA HORTICULTURAL SOCIETY.

A. J. Philips, Secretary of Wisconsin State Horticultural Society.

The annual meeting of the Northeastern Iowa Horticultural Society was held at Cresco, Nov. 28, 29 and 30. Besides President Gardner and Secretary True of the society there was a fair attendance of horticulturists from other parts of the state, likewise Dartt and Fryer of Minnesota.

Mr. Burnap of the second district reported first, Mr. Mitchell of the first district and Mr. Ferris of the third followed. The reports were very similar, all reporting the loss of trees and plants where snow was lacking. Mr. Reeves of Waverly makes a report of his nursery and locality very similar to Mr. Coe's report, at our summer meeting, of the losses at Fort Atkinson.

The same conditions prevail here as in our state. Not a man under thirty here to take part in the meeting, and only one under forty, and he from Minnesota (not Dartt), although at the entertainment Wednesday evening three quite young men took part. The first, the county attorney, spoke in glowing terms of the elevating influences of foot-ball playing. The second, a young minister, gave a good talk on many things that if practiced would result in a better citizenship. The third recited a poem in the Spanish language; I could not tell whether he was praising American horticulture or Spanish fighting. As usual the music was fine, the audience large and the other features good.

The general routine of the meeting was a fair sample of perhaps nearly one hundred meetings I have attended within the past twenty-five years. Some spoke of new seedlings that they think worthy. Of apples, the Ben Davis and Walbridge were abused perhaps the worst of any, while both varieties had a few warm supporters. The Russians had to take their usual scoring, some reporting a total loss, the Veronish for winter and Longfield for fall being the two best spoken of.

The usual questions about top-grafting were propounded and the summing up showed the Virginia crab to be the best stock to work all varieties on, though there is a manifest desire for something better and less liable to blight.

Reports on small fruits vary but little from ours, light crops and low prices being the rule. Columbian and Loudon raspberries both have friends here and Older is well spoken of. Beder Wood, Warfield and Enhance seem to be the leading strawberries.

Tree agents and home grown trees were handled about as we in Wisconsin handle them, and ways to teach the people were discussed, as has been done for years, while no doubt the same processes of swindling will be practiced for the next year as have been practiced for the past twenty years. As usual the men who need the instruction were absent and, as many of them do not read the reports, they will never hear of it. The best way to reach them was discussed. One man advocated holding meetings in every school district under the direction of the county superintendent, but as the average superintendent in our state considers he is doing all now that he is paid for, the plan hardly seems feasible. This subject was left about as it was found, except that Mr. Van Houten said he thought they were gaining a little in that direction.

Mr. Hatch here presented a resolution instructing the committee on Legislation, which resolution was referred to resolutions committee.

AFTERNOON SESSION.

President—I have been informed that the committee on the history of horticulture in Wisconsin is ready to report, Mr. Hoxie, chairman.

Mr. President and Members of the Wisconsin State Horticultural Society:—

Your committee, to whom was referred the matter of, or the advisability of, publishing a history of Wisconsin horticulture, have carefully considered the matter referred to them. First, we find that the society has already undertaken this work by authorizing the late J. C. Plumb to collect and prepare matter for such publication, and advanced some money to him to help in part the necessary expenses. We therefore hope and expect that some such matter has been collected and will be found available. We are therefore in favor of the society prosecuting this work by now appointing some one or two competent members of the society to collect all available matter from all proper sources and have the same edited and put in form for publication at the earliest possible time consistent with the obtaining and verifying of such facts thus obtained, and as soon as the funds of this society will permit to take charge of its publication. We further suggest that all members or other persons interested in the horticulture of our state write out and forward to such editor or compiler when appointed any facts or incidents bearing upon the history of horticulture in our state.

[Signed]

B. S. Hoxie.
F. C. Edwards.
J. L. Herbst.

Report was referred to executive committee.

Report of delegate from Minnesota was read by Mr. Yahnke.

Mr. Yahnke—Mr. President, Ladies and Gentlemen: I am very glad that I could meet with you here. This state is my

second foreign land; it was the first place I came to when I crossed the ocean, and in this state I found my first friend, and I will say my best friend; in this state I had my training in horticulture and in this state I found my better half, and is it a wonder that I love the state? And it was my joy when I could come back to the old place where I have had so many good days and to which I am indebted to so much in my life, and so I thank you all for the welcome you have given me here, and for the hospitality and the friendship and the good spirit you have brought me, when I come among you, so that I feel just as if I was at home. I have not felt a minute since I came into your presence as if I was in a strange city or between strange people; I feel as if I were at home.

As far as horticulture in our state is concerned, I will say that we have about the same trouble you have in this state, in some ways probably we have it worse and in others not quite so bad, in that we have to overcome the same difficulties that you have, and I believe I am safe to say that we have about the same spirit between the horticultural men that you have. They are all alive, industrious, wide awake men and noble in their character, all willing to lift up their fellow men and for the good of their country. I notice here during my presence in your meeting that every one has given his best to the public to develop, none of them keeps back a secret; he gives it up to his fellowmen so that every one may be benefited by it, and therefore I thank you. I myself have profited in that regard from being with you, and I hope that at our meetings you will have your delegates and you will see what we are doing, and I hope you will enjoy our meetings just as much as I have enjoyed this.

I am, furthermore, well pleased that you honor one of our members of our state who has propagated that beautiful apple, the Wealthy apple, which has done so much good to thousands and thousands of people in this broad land. If it were not for this pioneer work, we would not have an apple in this or in our state, and I can hardly make any difference between these two states; they are so closely connected in everything, in their resources, in their agriculture, in their horticulture, in atmosphere and climate, and in the people, because most of the people in our

state have come from your state, and many who are in this state have been in our state and have come back, so that we are two brothers, and I might say sisters, too, because we are one family. So I thank you very much that I could be here with you.

President—We will now listen to the delegate from Iowa.

Mr. Bentz—I can only say to you that I am much gratified to be with you. I have taken much interest in all your reports and I understand your interests and ours are almost identical, and your situation and growth and success has been very much like ours, and I do not know that there is anything of interest that I could say. I am pleased with the cordial and kind welcome that I have received; I appreciate it, and I hope that if any of you ever has an opportunity of visiting our state or our county, that you will call on me, and if I can not talk to an audience, I think perhaps I can be of some little interest on the grounds in showing you around, and then I can explain something about what I would like to say if I were capable of speaking or addressing an audience, and I thank you for your kindness.

President—Next on our program is the delegate from northern Illinois. I do not know that any one has reported from northern Illinois.

Mr. N. O. Kluck—I am from northern Illinois. I do not know as I am recognized as a delegate.

President—We will recognize you.

Mr. Kluck—I feel as though it were an honor to be before you, to mix with you and to get enlightenment in horticulture. Last fall our Horticultural Society of Northern Illinois had our meeting at Freeport; we had Prof. Goff down there, who explained about the formation of fruits and other things pertaining to horticulture, and he is a host in himself, and a great help, and we feel like returning thanks to you for sending him down there and helping along in our society.

I feel gratified to be here in your midst and I have learned a great deal; I feel that it is a nice place to be, a nice location, good social people and everything of that kind. I have for 42 years lived where I could always look into Wisconsin, and our

states are neighbors and we are as one, and I wish to thank you for the hospitality and the good time that I have had here in this convention.

President—We will now listen to reports of the delegates of some of our local societies:

In behalf of the Grand Chute Horticultural Society I make the following report:

The annual meeting of the society was held January 4th, 1900, 40 persons being present. The following officers were elected for the ensuing year: Mr. S. R. Merrill, president; Mr. W. Roblee, vice president; Mr. J. P. Brock, treasurer; Mrs. G. L. Finkle, secretary.

The society consists of the leading horticulturists and farmers of this section of the country. The meetings are well attended and thoroughly enjoyed by all, especially the good dinner provided by the ladies. Aside from our regular horticultural work essayists are appointed by our president to prepare an original paper or read a selection that would be of interest to the members. The delegate elected to attend the state meeting was your humble servant,

Carrie M. Finkle.

Appleton, Wis.

Mr. Darrow, representing Omro Horticultural Society, read the following:

OMRO HORTICULTURAL SOCIETY.

The annual meeting of Omro Horticultural Society was held January 12, 1900. The following officers were elected: President, R. L. Darrow; vice president, E. H. Graves; secretary, Mrs. Jos. D. Treleven; treasurer, Mrs. W. Smith; delegate elected to state meeting, R. L. Darrow, and Thomas Tanner, alternate.

This society meets the second Friday evening of each month, and in the month of June [besides holding our regular meeting] we hold an annual strawberry show, and we had the pleasure of having Secretary Philips present at our last one. In November

we hold an annual chrysanthemum show and fair, which is creating an interest, and we feel that it is doing a vast amount of good. We also assisted in forming a local society known as the Algoma Society, of which we have reason to be proud, for they are a live society. We now number over 80 members, and can say that the interest in the meetings does not lag, but new thoughts are constantly brought out and questions asked and answered, which would not be done were it not for the social, at-home feeling that is cultivated in these meetings.

Mrs. Jos. D. Treleven,
Secretary.

Dr. Loope, representing Eureka Society, read the following:

The orchard on Lookout stood last winter fairly well. Not a single tree succumbed to the winter, yet many were no doubt root injured. The blight came and made its mark on every variety in one part of the orchard. Those members of our society who visited the orchard in June saw the blight on Longfields, McMahan, Wealthy, Hibernal, Anisum, Whitney, etc., but the same trees grew and bore crops of apples, especially Longfields. They are covered with fruit buds at this writing. N. W. Greening in our vicinity were badly injured and did not grow this season. In our own orchard at Weston seemed all right, but they are young. Our apples were very wormy. I think all apples were wormy last season wherever grown. There was probably more apples in our orchard than all the rest of Winnebago county. We shall take a new departure this year by planting 1,000 winter apple trees. Five hundred of these will be in the nature of a trial orchard, being such varieties as Ben Davis, Jonathan, Ingram, Wagner, Winesap, Clayton, Salome, Mammoth, Black Twig, Roman Stem, Stark, Rushford and eight varieties of winter seedlings, unnamed, one native plum found near Rochester, Minnesota, one seedling of a California plum found in our own state and whatever we can add in the line of winter apples. The last 500 will be Sweet Famuse, N. W. Greening, Pewaukee, Acovel S. Winter, Willow Twig, Plums Cider, Cemetery, etc. We shall also top work most of these varieties on Virginia and Hibernal

stock. We can then judge of what will do best in our location and act on our experience. This is not a costly experiment and some of them may succeed. Any one who has some variety to test will confer a favor on us by selling or giving us specimens. All this work is on the theory that latitude does not entirely determinate the living qualities of even those called tender varieties but that location, soil, season and other qualifications have much to do with success or failure. That my trial station proves what may live or die in my location and surroundings and at others like mine but that a mile away with different conditions, I may not prove anything for the other fellow, that Wausau, Superior, Waupaca or West Salem proves no more. From childhood to decreptitude we are happiest in chasing some Will o' the Wisp that promises riches or happiness. Some even imagine they are better than their neighbors forgetting that their neighbors harbor the same illusion in respect to them. Some arrogate all the virtue of goodness and wisdom to themselves leaving none for others and then rail against them for what is not getable, being all absorbed. I don't believe anybody is an angel, at least none of my acquaintences. Some of you horticulturists may think you know it all but I don't believe it. Yet I don't want to come against you with any supposed knowledge of my own and I hereby give you due notice that however small you rate me horticulturally that I don't even in my own mind come up to your rating.

Mr. Jewett (representing Sparta)—I have no special report to make. Our society is still alive and flourishing. We have not had any meeting since last spring. We had the best growth of small fruits last year, and everything went in in good shape for another year. We all take an interest in the society as far as we can, but we have not as many meetings as others.

W. L. Osborne reported for the La Crosse County Agricultural and Horticultural Association. He said: "Our society is still active and useful and during its existence of nearly fifteen years has accomplished much good. It holds meetings monthly

from October to March inclusive, but is liable to have a summer meeting at any time when its members can spare time for it. One year it celebrated the Fourth of July with a grove meeting which was the best attended and most truly patriotic event of that character in the county. During the past year it has lost two valuable members by death, Hon. John Dawson and Mr. C. H. Hawkins.

Although both are greatly missed, the society will not really suffer in influence or interest, since the young men and women are taking more of the responsibility and work upon themselves as they should if vigor is to be maintained.

The society discussed every question of interest to the soil tiller and country dweller, nothing being barred that is offered in a right spirit. General farming has its place but the tendency is more and more toward horticultural talk as that branch of rural industry steadily increases in importance. The horticultural products of La Crosse county are not generally realized. The chief city with 30,000 inhabitants and three lesser towns furnish a large home market while a number of berry and apple growers have their own shipping market. For three years past the berry producers have been organized and made the bulk of their sales through an agent. This has been in spite of some objections very satisfactory, serving to keep the market cleared up and producing a higher average of prices. I believe every member of the berry association would recommend the system as certain to avert a great deal of annoyance and anxiety, and likely to yield more money. It has been a good thing to have our society represented at the state meetings—I believe equally valuable to both bodies. The delegate who comes here, is obliged to report at the next succeeding meeting of the local society and be prepared to tell, not only what he saw and heard, but also to answer a great manyq uestions, that will be rather awkward if he is in the least degree neglectful in his attendance upon these sessions.

REPORT OF THE WAUPACA HORTICULTURAL SOCIETY AND IMPROVEMENT ASSOCIATION.

We have a membership of about twenty-five voters and their families usually attend the meetings. We have more money in our treasury now than we have need for. Hence do not collect any dues this year. We have a full board of officers as follows for the year of 1900. M. B. Baldwin, president; Mrs. Phil. Koontz, vice-president; W. H. Holmes, secretary, and Wm. J. Benedixen treasurer. Our president usually appoints a committee of three on program. We usually hold meetings once each month and sometimes twice. Sometimes in the city at public halls or hotels, sometimes at private residences or parks and often at farmer homes and orchards, and we never fail to hold at least one strawberry and one orchard meeting in a finely cultivated strawberry garden and well bred apple orchard. We also have raspberry, blackberry and melon picnics. Generally have two or three sleighride meetings at farmers' homes and sometimes go as far as 10 miles, and we always pack the house as well as our sleighs and baskets, and we never lack for invitations out and by the way. If our society had accomplished nothing but the assimilating of city and country folk our mission would have paid ten fold in a social way, and in the way of education and educating our children and the young people to talk and read in public it has been a great benefit, and in an industrial way it has accomplished much. Its influence and encouragements have been remarkable. For be it known that at our organization twelve years ago there was not an acre of small fruits growing in our vicinity, and never had been one single crate of berries or a barrel of apples shipped from our depot here as a commercial enterprise. But since our organization and our united efforts and encouragements we have shipped thousands and thousands of cases of berries and car loads and car loads of splendid apples, hundreds of homes made happy and healthy children to occupy them and great sums of money have been paid to poor women and children for picking and sorting fruits to whom this boon was greatly prized and gave the means with which to procure books

and needed raiment and no one can estimate the value of good in this line.

At our meetings we have papers and discussions on all interesting topics (nothing excepted but politics and religion excluded). We have members of many tongues, American, German, Danish, and Norwegians, of both Protestant and Catholic faith—all of our accord, social horticulturists.

We are proud of our society and growing prouder as we approach our majority and feel at least that we will soon be old and influential enough to soon be courted.

REPORT OF ALGOMA HORTICULTURAL SOCIETY.

The Algoma Horticultural and Improvement Association was organized in January, 1899. Mrs. Joseph Treleven of Omro assisted us in organizing.

We have 56 members and expect to greatly increase our membership this year.

We have had twelve interesting meetings.

Secretary Philips was at our October meeting which was very instructive.

We have a supper and entertainment once in three months and charge a small fee for the purpose of raising money to pay our expenses.

At our annual meeting we elected the following officers: President, Wm. Case; vice-president, C. Phillipson; secretary, H. L. Christensen; treasurer, Mrs. Myrtle Sperbeck. J. J. Ihrig was chosen delegate to the winter meeting and instructed to bring back a good report and to make a strong endeavor to get the state society to hold its next annual or winter meeting at Oshkosh.

Report of committee on resolutions was read by Mrs. Campbell as follows:

REPORT OF COMMITTEE ON RESOLUTIONS.

Whereas, The work of the Wisconsin Horticultural Society is to elevate mankind by creating a love for the cultivation of fruits and flowers, thus inspiring higher ideals towards the good, the true and the beautiful; therefore, be it

Resolved, That the society express its thanks, by a rising vote, to Mr. Owen and Mr. Yahnke, our visiting members from Minnesota, for the kind words spoken regarding the lives and works of our departed members, and for the high ideals set before us in using that charity that sees the good and overlooks the faults in each other.

Whereas, The reports that the interest in horticulture is increasing, as the result of work done at the Farm Institutes; therefore, be it

Resolved, That this society express its thanks to the Institute management for the prominent place given to horticultural topics, and suggest that the good work be continued.

We desire to express our appreciation of the fine address given at the memorial service, by President Whitford of Milton College,, and ask that this resolution be adopted by a rising vote, and that President Whitford be made an honorary member of this society for the ensuing year.

Resolved, That we send our cordial greetings to our beloved J. S. Stickney, in his affliction, hoping his health may be speedily and permanently restored.

Resolved, That our thanks are hereby expressed to W. J. Scott, superintendent of Public Property, for the courtesy shown us in giving the senate chamber for our use during this convention.

Vie H. Campbell,
D. C. Converse,
L. G. Kellogg,
Committee.

Motion that resolutions be considered one by one was carried.

The first resolution instructing committee on legislation was, on motion of Mr. Kellogg, laid on the table.

The remaining resolutions were then taken up one by one and adopted.

President—If any one has anything further, it can be brought in under the head of unfinished business now. It is desirable that we go on with our program as fast as possible. I think Prof. Goff has come in, have you a report as delegate from northern Illinois?

Prof. Goff—I have no formal report. I attended the meeting and the meeting was enjoyable in many ways; the attendance was small and was disappointing in that respect. I did not make notes of the discussion, but I will say there was little there that was new, or that would be of special interest for Wisconsin. I do not wish to insinuate that the program was not a good one, or that it was not well carried out, but there was nothing that I can now recall that would be of special interest to us. They discussed the apples that are being grown in southern Illinons, and the small fruits, and perhaps if I had made notes I might be able to report something that would be helpful, but I did not, and do not now recall anything that would be of special interest to us.

President—We will now take up the subject, "What to plant to beautify our school grounds," by Mr. Toole of Baraboo.

BEAUTIFYING COUNTRY SCHOOL GROUNDS.

I shall offer no argument in favor of decorative planting on our school grounds. If you think the play grounds may be encroached upon, that indifference cannot be overcome, or that there may not be sufficient benefit resulting, these reasons will probably have more force with you, than anything I can say in favor of the elevating influence of beautiful surroundings. Whatever arguments can be advanced in favor of improving our home surroundings, can apply with equal force to the care of our school grounds.

If not properly enclosed, our school grounds should be provided with a neat fence, and wire netting is the best material.

Next, we should see that trees are planted, but not too many. Better begin with a few, that future scholars may share in the pleasure of planting, and make sure the scholars have reason to feel that they may take part in whatever is done. I have in mind a school district where the school board decided to set out some shade trees, and the scholars expected that Arbor Day exercises would be more than usually full that year, but the board hired some men to do the work at another time, and the scholars were left to feel that it was no concern of theirs. The roadside planting of trees should be far enough from the fence to insure the walking public full right to a wayside path between the trees and the fence.

Our hot, dry summers, and cold, dry winters, have sadly limited our choice of trees for this purpose, but we have the White Elm and Basswood, and perhaps can safely use the Norway Maple. On the grounds our planting must be limited by the needs of the scholars for recreation, and this varies in different districts and communities, but is never so great in country districts as with village or city schools. Trees for planting on the grounds may be more for ornament than for shade and we may choose from the following: Wild Bird Cherry, Red Elm, Hackberry, White Birch, Tamarack, Mountain Ash, White Oak, Box Elder, Willow and the Evergreens. Of the evergreens, give preference first to our natives, and if the grounds are to be seen from a distance, someone in years to come will be glad if White Pine had been one of the trees to mark the growth of the coming century.

Once our young people have become interested, they will wish for flowers, and for these we depend on shrubs, herbaceous perennials, and annuals. Our choice of flowering plants should be decided by the time when we can have them in bloom, for we need this beauty most while school is in session, either before or after the long summer vacation, for in farming communities, very few will visit the district school grounds in the summer time.

Our shrubs should be planted in groups because appearing better if so disposed, and occupying less space than otherwise. Of

kinds, we may plant the several varieties of Philadelphias or Mock Orange, Flowering Currant, the Spireas, — always including Spirea Van Houtei, Flowering Almond, Bush Honeysuckle, native Crab Apple, Thorn Apple, Redberried Elder, Snow Ball and High Bush Cranberry, as well as other native Viburnums.

School is out before the roses are generally in bloom, but Rosa Rugosa is so hearty a grower, with such a beautiful show of fruit in the fall, we should have it in any extensive planting.

For beauty of autumn fruit, we should plant the Burning Bush-Euonymus Atropurpureus, also the Barberry, and if there is room for climbers, the climbing Bittersweet, and native Clematis are beautiful in fruit late enough to be desirable. Clematis Paniculata will be scarcely out of bloom when the fall term commences, and for the same reason Hydrangea Paniculata deserves planting.

Among perennials we have for early flowering, the Columbines, including the common kinds, our native Aquilegia Canadensis, and the beautiful California species, Perennial Candytuft and Alyssum, the Pyrethrums, Perennial Larkspurs, Bleeding Heart, the Iris in variety, Hardy Pinks, Lily of the Valley, and by all means a group of Paeonies. The Paeonies should be by themselves for good effect. The foliage is stately and beautiful after the flowers are gone and they are among the most enduring perennials we have. Our perennials also should be grouped together for good effect and convenience. All of our flower beds must be out of the way, for until they have grown in favor, they will by some be barely tolerated. After our shrubs have become well established, they may be used as a nursery for some of our early blooming native plants and in their shade may be successfully grown. Blood Root, Hepatica, Spring Beauty, Dutchman's Breeches, Shooting Star, the Wood's Phlox, Trillium, Wood Sorrel, or Oxalis and the Violets, with such ferns as the Lady Fern, Maiden's Hair and the Ostrich Fern.

Some of the annuals may be had in flower before school closes, if started early, and to head the list, plant the Pansy just as early as anything can be safely planted out of doors. If the plants can be had, do not wait to see them in bloom, for the earlier they can be planted, the better. Petunias, Phlox, Alyssum,

and Stocks, can be had early, but they, with Verbenas, Asters, Mignonette, Pinks and a variety of annuals, will have their chief value in late summer flowering, the seeds having been planted late in May to give young plants for the late flowering. Any of these can be planted where the early bulbs have been, so with the succession, a small space can yield a maximum of display.

Spring flowering bulbs are here mentioned last, but they may easily become the most important section of spring flowering plants for the school yard. Planted early in October, as soon as autumn frosts have shorn the summer annuals of their beauty, they need only protection from being tramped on through the winter and they will greet us with early spring flowers. Tulips, Hyacinths, and some of the Narcissus, with Crocus, and Snowdrops for edging, give a wonderful variety of beauty.

I have said nothing about a grass plat, but hope there may be room for such, if only to show how pretty it may be in the spring all spangled with flowers of Snowdrops and Crocus which have been planted in the sod in the fall.

Little can be said here about cultural directions because it would take too much time to tell how best to grow all of the things mentioned, and it is not to be expected that everything here recommended will be planted in any one school yard; neither is the list supposed to be complete, but whoever has experience with what is offered here will know enough to add to it without outside help.

As to who shall make a beginning, where this kind of work has not been done before, I cannot say. I have often been asked to make out lists of plants suitable for school ground planting, mostly by teachers I think, but in a small way it would be possible for most anyone interested in the district to make a beginning, at first, maybe, with some of our native shrubs and plants, or perhaps those outbuildings are so situated that decency would suggest an evergreen screen. Possibly the place looks so bare and forsaken, that a few trees are needed more than anything else. Although few may enjoy such flowers as may be on the grounds in the summer, still what is growing must have a little care for the future. Planting is not all, and do not plant more than will likely be taken care of.

President—I think when you come to read this paper you will find it is a very valuable paper for reference.

Mr. Smith—Mr. Toole speaks of planting pansies in the spring. I would like to ask, why not plant them in the fall, and have them bloom as soon as the grass begins to grow in the spring.

Mr. Toole—The pansy is almost the only thing that we could have in that line, so I gave it prominence in that place, because if the plant can be had, it is more valuable than anything else, yet, on the other hand, it can go among that other class that I named later, and the pansy can come later.

Mr. Smith—My own experience with the pansies is that they are most appreciated late in the fall and early in the spring, and if they are planted at the beginning of the fall term of school, which is usually the first of September, good strong plants are planted, then they will bloom through the fall and if properly covered in the spring, will bloom abundantly as long as anything remains.

Mr. Toole—In regard to pansies, I wish to say, there is no plant that can be set out in the spring, that will give effect so soon after planting. Any one choosing to set out pansy plants for early effect should get the plants as soon as possible, do not wait until you can see them in full bloom and pick out the pansy you like the best, better take your chances on the mixed lot and get them out early.

Mr. Yahnke—Would it not be better to say linden or basswood twice, and leave box out?

Mr. Toole—It is basswood in Illinois, perhaps we may prefer the term linden.

Mr. Yahnke—What I mean is to leave the box elder out, and rather, if I should plant at all in the school garden, I think I would leave box elder out and plant two basswood instead.

Mr. Toole—You will remember the basswood and linden were together, I classed among those which might naturally be shade trees. This other list was given so that each may have more than one choice. The box elder is so amenable to trimming and holding in shape, that I now think a great deal of box elder.

Mr. Yahnke—I have a great many of them around my house

and I find that they are the greatest trees to have insects hatching on them; the box elder worm works on there so heavily that I am probably obliged to cut mine down.

Mr. Toole—We have to differ in regard to that. Insects always are hunting for abiding places anywhere, and if the insects are of the kind that cause us trouble in general, we can plant a few box elders and then corral them there and spray them, and exterminate them in that way.

President—Perhaps we had better take up the next paper, "The desirability of cultivating the Chrysanthemum," by Mr. B. S. Hoxie.

THE DESIRABILITY OF A GREEN HOUSE FOR CHRYSANTHEMUM CULTURE.

In the short talk which I shall give at this time I may not present any new fact or new method in Chrysanthemum culture, but I can simply tell you how I do it. I suppose the busy farmer, and as to that matter many a busy farmer's wife, have not much time to devote to the cultivation of flowers, but there are many more homes, and many more farmers, on which, and in which, flowers should be cultivated, for whatever we may think of their value, counted in dollars and cents, there is a greater value in the refining influence of the home where flowers are grown, and this influence goes out and on as a harbinger of better thought and higher life, and I sometimes think how sad the life of one must be when barred from the activities of life by old age or failing health, who cannot make that life brighter and more cheerful on the decline by living with and caring for flowers. I read in some paper lately that the fad for Chrysanthemums shows was on the decline. Well, maybe it is, but then some of the Chicago ladies are bound to have a cat show, both of natives and imported, including cats with short hair, cats with long hair, and cats without any hair. So I conclude people with refined and cultivated tastes as well as the lowly who live in hovels will still see beauty in flowers.

For the flower now under discussion we are mainly indebted to the Japanese, and it has been in cultivation there for more than a hundred years, and so it becomes their national flower.

A few years ago Mr. James Comley of the Massachusetts Horticultural society visited Japan when this flower was in bloom and I give a single quotation from him. He says: "While I was in Kioto I went to Sacco about one hundred miles distant to visit the finest Chrysanthemum show in Japan. In this show there were thirty different classes of Chrysanthemums all arranged in booths built of bamboo; each class by itself. Speciment plants were grown in almost every conceivable shape, showing remarkable skill in cultivation, four or five kinds being grown in one pot, and trained to make a perfect pyramid of flowers of different colors. The varieties and classes were perfectly gorgeous and so grand that I could not have believed such an effect possible. Imagine my further astonishment when a bamboo gate was opened and I saw over a quarter of an acre of land literally covered with plants all named; two or three of a kind, and some varieties more, many plants from six to eight feet high with flowers from seven to fourteen inches in diameter. I went over the whole plat, and when I got through I found I selected no less than one hundred and seventy-five varieties." But I must take no more of your time with Mr. Comley's description of this one show of the many he visited while in the flowery kingdom.

It is very evident that he is an enthusiast in Chrysanthemum culture. As for myself a dozen or fifteen kinds are sufficient for an amateur, and perhaps six or eight with duplicates of what suits one best is all sufficient.

I learned this some years ago, that if I would have fruit or flowers in my garden I must have plenty of water convenient to those plants when they needed it, for I had no time to pump water by hand and carry it by the pail full for even a row of gladiolus or a bed of pansies. So a wind mill and elevated tank was a necessity for the lawn as well as the flower garden, though a small one. And later, I found it too much work and care to grow Chrysanthemums without a green house, and so, fortunate or unfortunate I had a number of large windows which came to me

in rebuilding and remodeling a church, and these have served a good purpose for three or four years and with some paint and putty will for many more. For the foundation I dug a trench about one foot wide and two feet deep, this was filled with a grout of Portland cement. One part of cement to eight or ten parts of sand, coarse gravel, and broken stones, the stones being placed in as the mortar was poured into the trench. This was brought up a few inches above the surface of the ground and a piece of 2 by 6 to form the sill for the house well bedded in the mortar. When this foundation became well set after a few days the earth was excavated to the bottom of the trenches. My house is 12 by 20 feet and the side walls four feet from sill to plate, but this does not signify, only with me it was arbitrary because that was the size of my windows and I find the depth of two feet no inconvenience but some gain in a warmer room in late fall weather.

Of course this is not a *hot house* for winter plants though the plan would admit of that use. I have found it necessary only for a few days to supply artificial heat up to the first of December when the Chrysanthemums are for the most varieties past their prime. I find that the bed or bench across the south end a capital place to start a bed of lettuce and radishes; and in fact for our own use we seldom use that sown later in the garden.

Cannas and Chrysanthemum slips are started here early in March and then transplanted to the garden. In fact now with our few plants and flowers Mrs. Hoxie and I think the green house indispensable, though cheap it may be. After the plants begin to lose their freshness of bloom the stock is cut off and the pots and boxes containing them are placed in the cellar where they remain until slips or shoots can be transplanted in March. An occasional watering in a cool cellar is all the winter care needed except pinching back if they begin to grow up spindling. I usually start about four times as many as I want so as to transplant the best, or give away to those who call for them. I find a good rich soil and about two months in the garden; water as often as they need it, and pinching back to form a plant as you want it, is the best plan for me. At the last time of pinching back, the first of August, I transplant into pots, and into the

benches in the green house. If the plants remain out much after this time they are liable to be broken down by wind and storms, even if tied to stakes, for the branches are very brittle. As the buds begin to develop do not be afraid to disbud, leaving the best until you have three or four on each branch of your plant, and have these in bloom all at the same time. A plant with from four to sixteen blooms is better than one with a single blossom, or fifty. I find that many of the new varieties, with new names which are introduced every year are quite disappointing, and so I say a dozen varieties is all one needs, and then you will sometimes find your pinks change to dirty white, and when a variety persists in this throw it away. Never let your Chrysanthemum plants suffer for water and when buds begin to appear liquid manure once or twice a week will repay you for the trouble. (Shows an ideal plant.)

REPORT FOR 1900 — GRAND CHUTE.

Our annual meeting was held yesterday and we were disappointed in not seeing you there. It was a beautiful day and we had a good attendance and a very interesting meeting. We have lost two old and valued members by death during the year, Mr. M. B. Johnson and Mrs. Burch.

Several papers were read on various topics, and a very pleasant social feeling prevailed. Mrs. John Finkle was elected as delegate to the Winter meeting at Madison. I am in hopes a large delegation will go down. Will you please inform me when the executive board meets and all about it. Mr. C. E. Abbott of our society is a member of the board and he asks for information.

The election of officers resulted in the selection of the same old staff: Mr. S. R. Merrill, president; Mrs. G. L. Finkle, secretary; Mr. J. P. Buck, treasurer; Mr. W. Roblee, vice president.

There were no samples of fruit shown at our meeting, which was a very unusual thing.

The meeting adjourned to meet with Mr. and Mrs. F. S. Spencer in April.

Very respectfully,

Mrs. G. L. Finkle,

Secretary.

Grand Rapids, Wis., Jan. 10, 1900.

A. J. Philips, Esq., West Salem, Wisconsin:

Dear Sir:—I herewith submit my report of the Wood County Horticultural Society for the year just past.

The present officers are: President, Geo. T. Rowland; vice president, Mrs. N. Pepin; treasurer, office vacant; secretary and librarian, B. M. Vaughan.

During the year just past the society has held three meetings. Several of its members, by reason of discussions had last year in our society, are taking a systematic course of reading in agriculture and horticulture.

The library of the society has continued to grow. Several bound volumes and about 150 pamphlets and bulletins have been added, besides a considerable number of volumes received from the U. S. Department of Agriculture, to be returned when no longer wanted.

Our late treasurer, Mrs. Katie Miller, has gone to that better land, whence none return. This society feels her loss keenly, as she was an enthusiastic, faithful member.

Yours respectfully,

B. M. Vaughan,
Secretary.

Mr. Philips:—

Our society would like to send Hon. John A. Gaynor to your state society again, as a delegate, and have him give a short paper further describing the work done on the Cranberry Experiment Station. They made a wonderful exhibit here this week at their winter meeting, and their methods of work are of general interest to horticulture. Would such a paper be acceptable?

Yours respectfully,

B. M. Vaughan.

Algoma, Jan. 22, 1900.

A. J. Philips:—

Dear Sir:—Our annual meeting held last Saturday. Society in fine shape. Old officers elected, except president. Wm. Case

president for 1900. J. J. Ihrig delegate to Madison, to be accompanied by our secretary, vice president and as many more as we can induce to go.

Prof. Daggett was here yesterday. He will go to Madison one day if possible. You will hear from him.

We want the state meeting in February, 1900. What do you think about it? Will you favor it? and is there any way that we can get it if you don't?

Send a few programs to our secretary, Herman Christensen, Ninth street, Oshkosh. J. J. is at Sun Prairie all this week.

Respectfully,

Anna A. Ihrig,

Box 175, Oshkosh.

Weyauwega, Wis., Jan. 31, 1900.

Members of the State Horticultural Society:—

In presenting this my annual report of the Weyauwega Trial Orchard, I will cling to the kind advice given us by our worthy secretary, in his report last year, when he said: "We write too much, we read too much and plant too many varieties, and the best results can only be obtained by condensing our words, our thoughts and our work."

As I heartily agree with the above I will make only a short and concise report of the trial orchard.

Although we had a very severe winter in 1899, the trees passed it well, with the exception of five trees that were nearly dead the summer before, and when the spring opened the trees put forth a glorious crown of foliage. We had but few apples, it being the odd year; but those that fruited were: Duchess, Morris, Longfield, Berlin, Palmer, Wolf River and Okebena. If I were going to set out an orchard I would plant, first, Duchess, Wealthy, Longfield. Haas and N. W. Greening. A close second to those would be Winsor, Baraboo, G. Green, Duchess No. 2 or Rose, Okebena, Morris, McMahan, Patten's Greening, W. River, Palmer and Walworth Pipen. There are many others that should have a place in this list, but I hesitate to put them in until further trial. I consider the Mary Jenney,

Hybrid Seedling, Wis. Spy, Masters Seedling, Raspberry and Hartshorn not worthy of a place in an orchard.

All the trees are looking fine and are full of fruit buds. In the early part of November I wrapped the trees with wood veneer to protect from mice, as the trees are in clover sod.

As yet we have had but little snow this winter—about two or three inches—and it is nearly all gone at the present time.

I think another severe winter is here and will prove serious to the tender varieties.

Fred A. Harden.

HOW TO KEEP THE BOYS ON THE FARM.

By Willard Abbott, Class of 1900, University of Wisconsin Short Course.

One of the questions which we frequently hear discussed, at the present time, is, "How to keep the boys on the farm." Nothing is said about keeping the girls there, because it is generally understood that if you can keep the boy on the farm he will see that the girl stays, so all that we have to do is to solve the first problem and we have them both.

I believe that the best way to make a boy content on the farm is to make him interested in his work. The man who loves his work is the man who is going to succeed.

But you say, "How are you going to make a boy interested in farming, when he doesn't like the work?" Before answering this question, let us see why it is that he doesn't like the work. I believe that the principal reason is that he does not understand what he is doing. He simply does the routine work of a farm, year in and year out, because his father did it that way. He is sent to the field to hoe, or cultivate a crop, and he thinks this is done only to kill the weeds.

He does not know that every time he stirs the soil he makes the conditions more favorable for the formation of plant food, and that he is developing a mulch that will conserve the soil moisture. He does not know that the soil grains on which he is

walking were at one time solid rocks. Neither does he know that by far the greater part of the plant comes from the air, and not from the soil.

Did he know some of these things, and many more which I might mention, he would have something with which to occupy his mind, besides wondering, "What weeds were made for anyway," and, "How long will it take to finish this piece?" I well remember that these were the thoughts which were the most prominent in my mind, when I would start in to rid a few acres of raspberries, or a patch of strawberries, of their weeds, on a hot summer's day.

I longed for the time when I could leave the farm and its hoeing, for some other occupation which I then fancied I would much prefer. And when asked by some inquiring friend, if he intended being a farmer when a man, the answer was invariably, and emphatically, No.

Now the question is, where shall the farmer boy receive his instruction? I say that the place, and the proper place, is the public schools. I believe that it should be a branch of study, just as arithmetic, or any of the other branches now taught. Nor should it be confined to the soil alone, but should include the products of the soil and domestic animals.

Let the young minds grow up with the idea that farming is a science, and requires brains as well as muscle. That it is not simply a means of earning a living which people follow who do not know enough to enter one of the professions, or otherwise support themselves. A man can apply more scientific knowledge to farming than to any other occupation of which I know. I am glad to learn that the state of Wisconsin is taking the initial steps toward introducing the study of the principles of agriculture into her public schools. And while we are waiting for this to be done, the young men who are leaving, or have left the schools, are amply provided for by the Short Course in Agriculture, which is within the reach of all. It was this same short course which makes me say, "Yes, I am going to be a farmer," just as quickly as I once said, "No."

I was induced to come by others who had been here, and am glad that I came. To be sure a young man can not learn all that

there is to be learned about the different branches of agriculture in seven months, but it will interest him in his work. It will make him more observing, more thoughtful. And he will have acquired a thirst for more knowledge along the same lines. He will no longer pass the long articles in the farm papers over as dry and uninteresting, but will read them with interest. And he won't have to skip over some of the terms used, as so much Latin, as I used to do. It is said that we can not come in contact with a person , no mater for how short a time, without some kind of an impression being left,—that we will in some way be affected by the meeting.

What then must be the effect on a young man, of months of daily contact with such men as our corps of instructors is composed of,—men who are second to none in their respective lines of work. For it is well known that the Wisconsin College of Agriculture has at the head of each of its departments the best men to be found. Even if the student took nothing away but these influences he would have been fully repaid for coming.

Now I think I have said enough to convince you that a little learning along the lines of agriculture is one of the best ways to induce your boys to stay on the farm.

If you wish for additional evidence, trace the doings of the members of a graduate class or of all the classes who have completed their course here, and see what per cent. have left farming for any other occupation, unless for some higher station in life. You will find the larger number working their own, or their parents' farms, and the remainder laboring for others at good wages. And they are all helping to raise the occupation of the tiller of the soil, from near the bottom of the list of the occupations of man, where the educated classes have considered was its place, to the top of the list, where it rightfully belongs.

In these crude and broken sentences, I have tried to show what I believe to be true, that ignorance of the principles which underlie the occupation of farming is driving more young men into the already over-crowded cities, than any other one factor. And in conclusion I would say, do what you can to further the cause of agricultural education.

TREASURER'S REPORT.

Report of treasurer was read and referred:

TREASURER'S REPORT FOR YEAR ENDING FEB. 8, 1900.

1899.		
Feb. 6.	Balance in treasury	$128 25
	Received of state treasurer	750 00
	Received of A. Philips, membership	35 00
	Received for badges	2 40
	Received of F. H. Chappell, bal. life membership	4 00
Feb. 14.	Received of A. J. Philips, membership	6 00
	Received of state treasurer for Omaha exhibit	300 00
June 14.	Received of farmers' institute, freight on books	12 90
	Received of A. J. Philips, membership	20 00
	Received for membership at summer meeting	9 00
17.	Received of state treasurer	750 00
	Received for memberships	7 00
	Received for subscriptions to magazines	62 80
	Received for advertisements in magazines	20 50
	Received for subscription and memberships	12 50
	Total	$2,120 35

EXPENDED.

Order No.		
1	Floyd H., expenses and premium, winter meeting	$7 92
2	Loope, Dr. T. E., expenses and premium, winter meeting	12 42
3	Demerst, E. L., expenses, delegate, winter meeting	7 84
4	Jewett, Z. K., expenses, delegate, winter meeting	4 32
5	Hansen, Prof., expenses, paper, winter meeting	28 94
6	Babcock, O. W., expenses, delegate, winter meeting	5 00
7	Laiten, L. F., expenses, delegate, winter meeting	4 00
8	Toole, Wm., expenses, delegate, winter meeting	1 48
9	Tuttle, A. G., expenses, delegate, and prem., winter meet.	3 98
10	Hauser, Theo., expenses, delegate, winter meeting	5 35
11	Barnes, A. D., expenses, delegate, Minn., and premium	32 67
12	Finkle, G. L., expenses, delegate, winter meeting	7 48
13	Kellogg, L. G., expenses, delegate, winter meeting	4 07

14	Gaynor, John A., expenses, paper, winter meeting.....	$6 85
15	Kellogg, Geo. J., expenses, paper and prem., winter meet.	11 51
16	Campbell, Vie H., expenses, winter meeting	90
17	Hatch A. L., expenses, delegate, winter meeting.....	12 64
18	Cannon, A. A., premium, winter meeting.....	1 00
19	Read, L. H., premium, winter meeting.....	2 00
20	Philips, A. J., premium	5 00
21	Pingra, J. H., premium, winter meeting	1 00
22	Hauser, Theo., premium, winter meeting	1 00
23	Tarrant, Henry, expenses, prem. and delegate, winter m.	4 09
24	Peffer, Miss Kate, premium, winter meeting.....	1 00
25	Moyle, W. J., expenses, cor. secretary	3 00
26	Chappel, F. H., premium, winter meeting.....	5 50
27	Coe, R. J., expenses, drafts and stamps, treas. office.....	7 64
28	Huppeler, W. H., board of delegates.....	135 75
29	Converse, D. C., expenses, paper, winter meeting.....	1 28
30	Hoxie, B. S., expenses, paper, winter meeting.....	4 89
32	Hardin, F. A., expenses, trial station	5 00
33	Johnson, Franklin, expenses, winter meeting.....	2 96
34	Goff, E. S., expenses,.....	1 00
35	Kayser, Lillian M., expenses and reporting, winter m.	57 27
36	Phil A. J., salary, secretary	75 00
37	Baraboo Republic, printing magazine	93 25
38	Coe, R. J., paid note acct. Omaha exhibit.....	311 37
39	Hirschinger, Chas., expenses, San Jose scale bill.....	8 08
40	Johnson, Mary C., salary and expenses, magazine.....	37 10
41	Johnson, Franklin, expenses, summer meeting.....	8 32
42	Kellogg, Geo. J., expenses and premium, summer meeting	19 18
43	Smith, J. M. Sons, premium, summer meeting	19 00
44	Parsons & Loope, premium, summer meeting	4 50
45	Landon, F. W., premium, summer meeting	2 00
46	Floyd, Henry, premium, summer meeting	6 00
47	Williams, Mrs., premium, summer meeting	2 00
50	Bradt, H. H. G., premium, summer meeting	1 00
48	Tanner, Thos., premium, summer meeting	4 00
49	Franklin, Mrs. J. M., premium, summer meeting.....	2 00
51	Wolcott, A. C. H., premium, summer meeting	1 00
52	Cook, Mrs. C., premium, summer meeting	1 00
53	Carpenter, A., premium, summer meeting	1 50
54	Calhoun, Mrs. A., premium, summer meeting	1 00
55	Chappel, Clyde, premium, summer meeting	2 00
56	Tieman, Mrs. S., premium, summer meeting	3 00
57	Pingra, Mrs. S. O., premium, summer meeting	5 50
59	Coe, R. J., expenses, summer meeting	5 00

60	Goff, Prof. E. S., expenses, summer meeting	$5 40
61	Philips, A. C., expenses, secretary, office	81 60
62	Single, Ed., expenses, summer meeting	6 90
63	Stank, Frank, expenses, summer meeting	3 20
64	Steifs, Henry J., reporting, summer meeting	2 00
65	Kayser, Lillian M., reporting, summer meeting	25 15
66	Philips, A. J., salary	75 00
68	Johnson, Mary C., editing magazine	50 00
69	Baraboo Republic, printing magazine	77 25
70	Philips, A. J., salary	75 00
71	Philips, A. J., expenses, secreatry, office	30 48
73	Baraboo Republic, printing magazine	77 25
75	Smith, Irving C., expenses, delegate, Minnesota meeting	16 76
76	Goff, Prof. E. S., expenses, delegate, Nor. Illinois meeting	3 70
77	Philips, A. J., expenses, delegate, N. E. Iowa meeting	14 25
78	Philips, A. J., expenses, secretary, office	95 71
79	Philips, A. J., salary	75 00
81	Baraboo Republic, printing magazine	77 25
82	Johnson, Mary C., ed. magazine	47 40
83	Johnson, Franklin, expenses, president, office	25 00
84	Coe, R. J., cash paid acct. magazine	126 16
		$2,000 99
	Balance on hand	119 56
		$2,120 35

SECRETARY'S REPORT FOR YEAR ENDING FEB. 8, 1900.

Secretary's salary	$300.00
Expenses to secretary's office	207.79
	$507.79

February 8, 1900:—	
Received on salary	$300.00
Received on expenses to secretary's office	207.79
	$507.79

TRIAL ORCHARD REPORT FOR 1899.

Feb. 5, balance on hand	$ 88.61
July 7, received of state treasurer	250.00
	$338.61

Expended:—	
Order No. 58, Philips, A. J., expense trial orchard	$ 42.01
Order No. 67, Single, Ed., rent and work	26.00
Order No. 72, Philips, A. J., expenses and work	27.79
Order No. 74, Kreutzer, A. L., rent and work	31.40
	$127.20
Balance on hand	211.41
	$338.61

President—I feel like thanking the members of this gathering for the uniform courtesy and general good behavior, that is, you not only have been uniformly courteous, but I never attended a

gathering of this kind where each one seemed to endeavor to carry on the business that was before the meeting as well as you have. I feel like congratulating you in that respect; as I am not up in parliamentary law, I rather dreaded this position, but you have made it as easy for me as you could, and I feel grateful to you for that and I thank you for the many courtesies you have shown me.

Adjourned.

Senator A. L. Kreutzer.

TRANSACTIONS

OF THE

Wisconsin State Horticultural Society

ANNUAL SUMMER MEETING.

The summer meeting of the Wisconsin State Horticultural Society was held in Marathon County Court House, at Wausau, June 20th and 21st. President Franklin Johnson in the chair.

Wednesday, June 20th, 1900.

The President—The social feature of our meeting is a very important one, and I am very glad to see you improving the opportunity for it, but the time has come when we must go on with our program. We will follow the printed program as nearly as possible, and in accordance with that we will have an address of welcome by Hon. Neal Brown.

Mr. Brown—Mr. President and Members of the Society: In behalf of the people of Marathon county I welcome you to these remote regions. I say "remote," because to some of you they may seem to be so, on account of never having explored this country before.

I will say also, we have tried to look our prettiest in view of your coming. The inhabitants here have discarded the customary attire of gay blanket and strings of glass beads, the most of them wear pants and are ready to receive you in the habiliments of civilization. The progress of horticultural life embraces I believe the growth and culture of fig leaves, and in that

way you may have considerable effect upon our manners and customs.

You are, I might say, the missionaries in horticultural reform, and there is a great field for your labors in this vicinity. We are all in one sense good horticulturists and good agriculturists here, especially at election time. I am one myself, I might say. Mr. Kreutzer here is, as he delights to tell you, a good farmer, a good horticulturist and agriculturist, and in this part of the state, as you know, we have had a great variety of agricultural candidates who have been running on various agricultural tickets. I understand Mr. Kreutzer intends to run as appletree candidate, or as crab apple candidate, with good strong backing. I warn him in advance that he is not going to be without rivalry in that. I keep bees myself, and I am not going to be outdone by anybody, and if there is any office to be had upon the strength of being an apiarist, I propose to get it.

Now I wish to turn your thoughts more seriously to some questions in regard to horticulture and tree planting. Tree planting is one of the most innocent recreations a man can indulge in. A tree planter has no evil thoughts, except it be when the butcher's boy and the grocer's boy drive up and tie their horses to one of his trees, while they go around to the rear window and whisper soft butcher and grocer nothings to the presiding genius in the kitchen while the horse gnaws off the bark of the tree. In such a case I would simply put that young man out of the way as efficaciously as possible, and I doubt if the coroner's jury would find it necessary to hold an inquest over his remains.

I would do this in the way of planting of trees. I would remit the taxes to the farmer or land owner who planted trees on his land along the highwey; provided, of course, that in the country remission should be less in amount than in the city; give a small remission of a few cents for every tree that was planted and growing, and have a commissioner of highways whose duty it shall be to see that the trees are properly counted and proper counts kept of them, and have the business done in business-like shape. This would relieve the monotony of town and country life and would make the whole country like a park in time. It would change the whole aspect of the country, so

that instead of driving for miles through what seems to be practically a desert so far as trees and shrubs are concerned, you might see extending along the roads fine rows of oaks and elms and trees of that sort.

It ought to be one of the principles of this society to inculcate correct ideas in regard to what I might call tree architecture. Now trees have a tremendous influence in any part of the country. Out West, in those dry and treeless wastes where they have no trees, and they take notions, as they do frequently, to elevate some citizens, they have to resort to the use of a telegraph pole. They have not trees enough to hang a man on when they wish to perform that ceremony and I think it has a bad influence. I remember once reading of a factory town that was as barren of all forestry and of all shrubbery as the desert of Sahara; each house stood in the midst of its little desert, and the whole village was built up with the hot sun blazing down in all the streets, and strikes were common, men came home and were scolded by their wives, and they were mad all the while. Why? Because they did not have the surroundings which tend to elevate and soften the passions and elevate men. Well, finally they started some society or association for reform, and in a short time they had trees planted and shrubs planted and their homes were bowered in vines, and strikes ceased and the wives no longer scolded. I have had diverse cases in my practice where trouble resulted because of the house standing in a desert, where there was nothing to relieve the eye or charm the thought from the anxieties around it.

In regard to tree planting, it actually makes me sick to see a man murder a tree. He goes out into the woods and (we will say that is the way here, where we have no nurseries), he selects we will say a pine, or else a spruce, or balsam, or cedar, and he carefully shakes the dirt off its branches, then he drives with it four or five miles through the hot sun. Well, the tree is dead within five minutes after it is out of the ground. Just let the warm sun get on the roots and the tree is dead as Julius Caesar. Well, it looks dry, and in about two months that tree is all black and brown. If this society could only teach men in regard to coniferous trees, that the tree will not stand exposure to the sun an hour, that you have got to have something moist around

the roots from the very second it is dug up until you put it in the ground, then if that is done, you can grow evergreens just as easily as you can calves. You would not believe any man was so stupid as to believe that the more roots he cuts off a tree, the better it is for the tree in transplanting. To you gentlemen in horticulture these things are underlying and elementary propositions. I do not say this so much for you, because you do not need it, but you have got to talk it in season and out of season in order to educate people up so that they may make this country what it ought to be instead of what it is.

There is no more beautiful tree grown anywhere than the pine, it is the aristocrat of the forest, the true nobleman, it stands towering above all the other trees in the forest, and I have lain many a night on the banks of the lonely lakes and heard the wind soughing in the pines and there is no music like it in the world. It is a tree as easy to grow as the chestnut. This city ought to be the city of pines, and yet, outside of a few yards, there is hardly a pine to be found, and here we are in the center of the great pine belt of Northern Wisconsin, and you would be astonished to find that even in the lifetime of a middle-aged man there can be grown a tree from seed, because it is a rapid growing tree.

Perhaps I might add something in reference to the tree and its effect on man. They are the most strikingly beautiful thing that Nature has indulged in. They stand like armies, throwing their feathery tops abroad to the wind and sun. There is nothing better calculated to impress man with the munificence of Divine Providence than the forests and trees which Nature has given to us. In death they give no offense; they fall in the woods and the trunks lie there without blame, nourishing the growth of other trees that spring up in their places. Great men have stood under the shadows of trees. The appletree of Appomattox will live in history, in tower and temple, till history may have passed away. I think I can best close by referring to some thoughts of the poet Bryant on the subject:

(Mr. Brown then recited verses from Bryant.)

The President—Honorable Mr. Brown, and you, good people of Marathon county, in behalf of the Wisconsin State Horticultural Society, and in my own behalf, I tender you grateful acknowledgments for your gracious and courteous welcome, and for the eloquent words with which you have addressed us.

We are happy to be here in the beautiful metropolis of the Wisconsin Valley, a city distinguished for its energy, intelligence and public spirit. I had almost said we are as happy as an accepted lover; that would not express it exactly. We are more like the young man that had a carriage waiting at the door as his best girl came into the parlor adjusting her hat, preparatory to going for a drive. She began tapping her face with a handkerchief, and she said, "Do you see anything on my face?" "Yes," said he. "What is it?" "Well," he said, "It is the most beautiful, ravishing, heavenly smile I ever saw."

For several years the state society through our former secretary, Mr. Philips, has been wooing Wausau, ever since the Trial Orchard has been located here he has unceasingly sounded her praises, and now that we meet you face to face we acknowledge the discriminating judgment.

We are glad to see the good people of Wausau among us with their presence and take seats in our convention. We come not simply to compare fruits and opinions and to give each other good advice, but also for the promotion of that social intercourse between the various sections of our state whereby we can produce fruit more delightful and precious than any which grow in the fields. As you have so warmly welcomed us, we are encouraged to voice the desire of our hearts that you would come into closer relation by organizing a Wausau Horticultural Society and thus enter into the State Horticultural family.

The President—On the program I see the announcement of committees. That will follow later, as I have to consult with some others before announcing them, to be followed by any business connected with the welfare of the society. Have you anything particular, Mr. Herbst.

The Secretary—I have nothing except applications for the new trial orchard, and that will come in later.

The President—Perhaps you would better present them now.

The Secretary—After our meeting last winter I sent out

notices or circular letters to as many of the newspapers in the northern part of the state as I could find, asking them to print a circular, which was in regard to locating a new trial orchard by this society. In reply to this circular I have received applications from:

Eagle River, Wisconsin.
Prentice, Wisconsin.
Minocqua, Wisconsin.
Wausaukee, Wisconsin.
Cumberland, Wisconsin.
Clear Lake, Wisconsin.
Three Lakes, Wisconsin.
Rhinelander, Wisconsin.
Spooner, Wisconsin.

It is unnecessary for me to read these applications. It simply shows that the people are anxious to enter into the work of setting out these fruit trees in the northern part of the state.

Mr. Hoxie—It seems to me that this matter should either be referred to the executive committee, or that you appoint a special committee on this subject.

The President—We have a trial orchard committee, and I would think that this would come in their province.

Dr. Loope—Perhaps I am not just in order. My idea is, in selecting a site for a trial orchard, that the committee do not select the most favorable site in the most favorable locality. We have already one trial orchard that ought to give us some results, but there is in almost every locality a more favorable location than the general run of the country would afford. Now if you succeed there in that most favorable location and go to work and recommend such varieties as you do succeed with in that locality, in the country round about they may entirely fail, so I should say that that trial orchard should have a medium location and test the varieties in that location. That is what we are after, I suppose; we are after the information and we are after the information for the good of the community, and if we do that we can not make our tests in the most favorable location and then recommend the varieties that do well there to those that are not so much in favor.

Mr. Barnes—Along the line of suggestions, I think Dr. Loope has struck the key-note, but experience has taught me that it will be wiser and better to go further than that in selecting this trial orchard site; if we could select a site, as we no doubt could near most towns, where there would be a variety of sites and soils in the same field, in the same location, where varieties could be planted on a good site, medium site and a poor site, or for instance, on a clayey hill slope, a loamy bottom or a sandy plain, where the same varieties could be planted on a different soil and treated, one row under one system, another row under another system, I think would make a more complete and satisfactory orchard than selecting one of medium site.

The President—Mr. Brown has a subject he would like to present.

Mr. Brown—I want to invite the members of the horticultural society and their friends to my place this afternoon, or some time when they can come, to an informal reception, and show you the trees I have planted, some four or five thousand in number and growing nicely. I thought perhaps you might be pleased to see what can be done in that line, and if you will fix the time, you will give me great pleasure by coming there, and I will see that the bees are on their good behavior.

Mr. G. J. Kellogg—I move that we accept Mr. Brown's invitation and endeavor to visit his place this afternoon, immediately after adjournment. (Carried.)

(Dr. Loope in the chair.)

The Chairman—If there is nothing further we will proceed with our regular program, and the first number on the program is, "Small Fruits for Home Garden," by W. H. Hanchett, of Sparta.

SMALL FRUITS FOR THE HOME GARDEN.

By W. H. Hanchett.

Of the small fruits in the home garden the strawberry is not only the first in season but first in the hearts of every member of the household.

For with what longing we await the first scattering ripe berries and with what lingering regret we gather the last of the season. And no wonder for who ever heard of a person who tired of fresh ripe strawberries? How we wish we might have them fresh from the fields the year around.

This being the case it becomes the duty of every farmer, or villager who has a plat of ground large enough for a home garden, to devote a part of it to strawberries.

The varieties planted should be selected with a view to prolonging the season as much as possible, and while it isn't possible to have them fresh from the vines the year around it is possible to have them fresh from our own gardens for a period of six weeks.

After eighteen years of experience as a commercial strawberry grower, the varieties I would select for a home garden are, Michel's Early, Warfield and Gandy, and did I wish to add to these I would add Brandywine and Haverland.

The Mitchel's is no great scratch of a berry from a commercial standpoint, but then it brings to our table that first dish of strawberries that we are all longing for, and will also serve as a pollenizer for the Warfield, which will be the standby for main crop from which the canning and preserving can be done.

The Gandy will finish the season about two weeks after the others are gone and should be one of the selection for the home garden, for while it is not a heavy cropper it will produce some fine fruit and make the season about two weeks longer.

Haverland might be added by way of variety for its large elongated glossy fruit is a pleasure to the eye and its mellow flavor gives variety.

The large heart shaped fruit of the Brandywine and its rich

A Wisconsin Strawberry Field.

aroma makes it desirable for preserving and were it not for one fault we would recommend it as the mainstay for the home garden; but should even a slight frost occur about the time the blossoms begin to open no fruit follows.

Of varieties selected I would recommend the planting of 150 Mitchel's Early, 300 Warfield and 200 Gandy, and to parties wishing to add to these 100 Haverland and 100 Brandywine. This would make a bountiful supply for a good sized family both for fresh use and for canning and preserving.

The villager whose garden is limited in area might cut this in half and still have a good supply of fruit.

Of raspberries I would recommend the planting of one dozen each of the following varieties: Ohio and Gregg for blackcaps, and Marlboro, Loudon and Cuthbert for reds, and by way of variety a dozen Columbian.

Of blackberries Taylor's Prolific will stand more neglect and hard usage than any variety we have tried, and for the average farmer's garden this would be first choice, but where good culture is given I would recommend the planting of twenty-five each of Eldorado and Briton.

A half dozen gooseberries of either the Houton or Downing variety and a dozen Red Dutch or White Grape currants (or a half dozen of each) will supply most families with these fruits.

The numbers I have recommended of the several varieties of small fruits ought to be sufficient to furnish a good sized family with all the small fruits needed for both fresh use and for preserving, and where only enough are wanted for fresh table use one-third of these numbers would be sufficient.

In the way of methods of culture I will only say plant in rows as long as convenient, keep the soil well supplied with plant food, keep the weeds out, and give winter protection.

Mr. G. J. Kellogg—I move that Michel's Early be stricken from the list of recommended varieties.

Mr. Smith—I would like to ask the gentleman if it is his experience with the Gandy, that it continues bearing two weeks after the Warfield and other standard varieties. It is not so with us.

Mr. Kellogg—The Gandy we do not consider worth anything.

The Chairman—Brother Kellogg's motion did not get a second.

Mr. Hanchett—In regard to the Michel's Early, I wish to say just as I did in the paper, that I do not consider it a success as a market berry, the yield is too light, but it does bring to the table those first berries, and any one who has ever sat down to a Michel's Early shortcake, I think that they would agree with me that it makes the best shortcake that ever went on to a table

And in regard to the Gandy, I wish to say that at Sparta we have a great variety of soil. On light soil it has not been a success, but to those who have experimented with the Gandy, who have studied its traits and have studied its needs, it is not only one of the most profitable market berries that we grow, but it is one of the best table berries that we grow. And in regard to the season, — at Sparta last year we had the first strawberries the first of June, and on our farm we had our last Gandys the 21st day of July, that was about three weeks after the Warfield on our farm was gone.

I have found this in regard to the Gandy: it needs high culture, it does best on a heavy soil, it needs high fertilization, it seems to respond particularly to potash fertilizers. We use harwood ashes on our Gandy and receive good results. For the purpose of planting Gandy for the home market, I should recommend that we scatter about one bushel of ashes to the square rod of ground before planting, and work it in with the harrow. We last year harvested over 300 half bushel crates per acre of Gandy, and they were the finest that we put upon the market last year.

A Member—Is it early?

Mr. Hanchett—It is late, and in that regard, it did not come into bearing last year until we had just about quit picking the Warfield, and we had Gandy for three weeks.

Mr. Barnes—Relative to Mitchell's Early, we discarded that after six years' trial. In regard to the Gandy, I believe it s the experience of Chicago buyers anyhow, that there are more Gandy berries sold in Chicago from Michigan, Indiana, Ohio and Southern Illinois than any other one variety of berries grown for that market. In our own case, on medium soils, we find that it comes into ripening about the time the average ber-

ries cease to be ripe, and it is carried through for two and even three weeks after other varieties are gone. I believe for hill culture there is no berry that will compare with it.

Mr. Ben Dixon—I wish to say a word for the Gandy on light soil. I operate on very light soil, as some of you gentlemen here well know. I set out some plants of the Gandy, Haviland, Enchace and Greenville three years ago, and the Gandy took my fancy the first year, and last year, the second year, they were good, and last year more particularly I noticed that when my Haviland were ripe, we were beginning to pick them as early as we picked those, and about a month after we began to pick Gandy. I had a nice lot of Gandys, they were all fine. But I will say this in regard to Mr. Hanchett's suggestion, that light soil should be heavily fertilized with wood ashes; I used a great deal of wood ashes this year.

Mrs. Johnson—I would like to ask if Mr. Hanchett does not find that the Taylor's Prolific is so late a bearer that it is apt to be caught by frost. I have heard that it is not good for Wisconsin on that account.

Mr. Hanchett—No, we have not had any trouble in that regard.

Mr. G. J. Kellogg—As long as we have so many varieties of strawberries that we know are adapted to all soils and climate and locations that are a success, I object to recommending any varieties that are local in their adaptation. That is the reason I object to the Michel's Early.

Mr. Hanchett—I would like to ask Mr. Kellogg if in his experience he knows of an early variety which he would recommend in place of Michel's Early. I wish to say, too, that the only reason I recommended Michel's Early was because it is early.

Mr. Kellogg—About fifteen minutes earlier than the Wood, and the Wood will bear ten times as many berries in general cultivation as the Michel's Early.

The Secretary—We do not recommend Michel's Early in our list of varieties recommended. It is on the premium list, and was put on by me for the reason that there are parties growing Michel's Early that are showing here.

Mr. Hanchett—I do not wish it understood that I am going to

feel hurt about what Mr. Kellogg has said. I am glad he has put his foot on Michel's Early; it is important that the failure of certain varieties should be brought out, and I want to get back at him about his Wood. At Sparta on our farm we had Wood three years, and in those three years we never got a quart of decent berries of Wood. However, on some of the low soils around Sparta the Wood was one of the most productive varieties that I ever saw.

Mr. Irving Smith of Green Bay then read the following paper on "Flowers for the Home Garden."

FLOWERS FOR THE HOME GARDEN.

Mr. President, Ladies and Gentlemen: In considering this subject we will take it for granted that we will enjoy flowers around our homes. But are they necessary? For your existence no. Neither are your collars and cuffs and ties. Thousands of men and women go through life without being able to read or write, but you would not be content to do so. Why not? Because you are more comfortable and happy with these things. So you will be more comfortable and happy with the flowers. You will be a broader and a more liberal and charitable man. You will have a higher and more refined taste and appreciation for things beautiful and know more of God and his nature. Your wife and children will be happier. The little ones very soon learn to love and watch for the opening flowers as eagerly as you watch the rising market when you have stock or other farm produce to sell.

And to you men who look only for the dollars and cents, if there be such here, your property will be increased in value much more than the cost of starting a few shrubs and plants.

I speak more particularly to you, gentlemen, because on you depends the possibility of a flower garden. Don't get the flower beds in the way of the other work. Leave the drive way to the

cellar and wood shed; but have them where you will see them every time you come home from the field or city and where they may be seen by the passer by.

Use a little artistic skill in laying out the beds so that the ground will attract some attention and admiration before there are any flowers. Make the walks sufficiently curved and angled to relieve the stiffness of appearance.

Set the rose bushes and perennial plants in a plot at one side, not scattered over the whole garden. As to variety, we have lilacs, which are desirable grown in a clump or hedge for a back ground. The Syringa as a lawn bush or at the back of the roses, so as not to hide other things, and the bush Honey-suckle with is mass of delicate pink, add variety and color at a time when they are most needed. The Flowering Almond produces an abundance of beautiful pink very early and is small enough to put with the roses. The Bridal Wreath with its long slender drooping branches covered with white is also very showy. These two last are not as desirable to cut as some other things. The climbing Honey-suckle is a beautiful ever-blooming climber and will thrive in a partially shaded location. The Iris in variety makes a very pretty edge at the side of a walk. Paeonies, Bleeding-heart, Columbine and Perennial Phlox add variety and beauty to the general appearance. In roses, do not go much into the finer and more delicate half hardy varieties until you have had some experience, or are willing to put up with a degree of disappointment and failure while you learn.

On the plot left for the annuals, after having dug it up thoroughly with the spading fork and laid out the walks as prettily as possible, set the plants or plant seeds, only one variety on a bed. Set the taller growing sorts in the center, or set the center with some bright colored variety such as scarlet Verbena.

You should have not less than ten or fifteen varieties of annuals, and more would be better. Of the common kinds it is desirable to start a few plants in the hotbed or window box, such as Verbenas, Pansies, Phlox and Candytuft, according to your space at command. These will give you bloom much earlier than plants from seed sown in the beds. There are a large number of our best annuals that will come up every spring from seed dropped the season before, so that it is necessary to buy

only a package or two of seed in colors abou once in two years. You can take up plenty of mixed varieties from the bed where they grew last year. For this reason do not work up this section too early but wait for the young plants to start. The rose section should be forked over, not too deep, as early as convenient in the spring, digging in some green cow manure if at hand. It is desirable to set some low growing annuals among the roses, to fill up vacant spaces and supply some bloom after the roses are gone. Use such plants as Asperula, Sweet Alysium and Pansies for this purpose. Some may say, it would cost too much; or you have no time for such work. I venture to say, that no work on your farm will yield more joy and pleasure for the few hours put upon it than that devoted to the flowers. It will not be only the ladies and children who will be glad in it; you, husbands and fathers, will be as proud of the masses of bloom as the daughters and mothers.

Study the flowers a little, learn the names of them and their habits of growth and you will be interested. Take a glass and examine the wonderful construction and colorings and you will be astonished to see the marvelous workmanship displayed. The cost of starting will be trifling. Most of the shrubs and perennial plants you can pick up among your friends, if you do not wish to go to the nursery for them; and fifty cents to one dollar will buy all the seeds needed.

Don't sell flowers or plants if you would reap the fullest measure of profit from the flowers, but offer to give a slip, or root, or plant, of what your friend admires. Invite your friends to help themselves, when you have company, then you will begin to really appreciate your flowers.

Your christian charity and love soon dies if not kept busy, so the flowers, if not kept busy, soon go to seed and die; but if appreciated enough to be picked, they continue to grow and bloom in abundance through the season.

No matter if you are busy do not entirely neglect the flower garden.

Mr. Marshall—I would like to ask Mr. Smith if he finds the flowering elm perfectly hardy without any covering?

Mr. Smith—Ours was hardy ever since I can remember, until three years ago, and then it suddenly got unhardy that winter and died. I have not yet provided myself with another one. It was a winter that killed such things as paeonies and other flowers that had lived through everything else. Mr. Coe can tell you about it; it wiped out everything.

Mr. Coe—It is not as hardy with us down there at Fort Atkinson; it only flowers about every three years. We have other things that are hardier.

Mr. Smith—I did not mean to say that all these flowers recommended are entirely hardy, or otherwise.

Mr. Hoxie—The flowering elm I have bothered with for the last ten or fifteen years, finally, in the spring I rooted them all out as unsatisfactory and let other things take the place of them.

I can most heartily appreciate the point that Mr. Smith emphasizes, that is, if you want to get the most satisfaction out of plants, do not sell them.

Mrs. Barnes—In regard to selling flowers, — some of us are hardly able to raise flowers without selling enough to pay expenses and that seems to be my condition. I have tried to sell enough to pay expenses, though I never charge for schoolhouse decorations or anything of that kind, or church decorations, and often loan plants and have them badly injured when I get them back, but I do try to sell enough to pay expenses.

Mr. T. W. Clark—I think if the people would treat them as they would a bed of strawberries and cover them up and hold them back, they will have success with them.

Mr. Smith—Before we go on to another subject, I would like to say just a word by way of a seeming contradiction. Speaking of plants or flowers, we sometimes raise a few flowering plants to sell in our general plant trade, aside from our home garden, that has no connection. That is a very small branch of our trade, and we do not sell flowers of any description; we give away immense quantities of them, and give away a good many more flowering plants than we sell. Almost every cents worth that we sell are on orders that come in from outside by those buying vegetables, etc., so that any one who may know of those matters may not think my statements are contradictory.

The following paper on "Hardy Perennials" was read by Mrs. J. J. Ihrig:

HARDY PERENNIALS.

There is no class of plants so well suited to the needs of the farmer and the farmer's home as the hardy perennial. We all know how the long summer days follow each other so rapidly and how it seems as though there was no time or strength to be wasted on flowers. But when we look back to our childhood, the flowers stand out clearly and it is easy to trace their influence along the pathway of life up to the present time. Looking thus we realize that we must have flowers for ourselves, our children and our friends. We put forth our effort to supply the need. Many beautiful plants appeal to us from the seed catalogue, the nursery agent, or the gardens of our friends, who have leisure to devote to floriculture. But something is wrong. Our seeds and plants which seemed so desirable fail to produce good results and we find that we cannot rely wholly on the advice of the nursery man or the glowing descriptions of the catalogue, while the beautiful plants of our friends require more constant care than we can give.

After repeated failures many of us yield to despair and giving up the struggle live on in our cheerless homes, stifling the craving for the beautiful flowers as best we may. To such despairing ones the hardy perennial comes to make a last appeal. We are doubtful. We go for a short drive and note where twenty years ago a dwelling house was torn down a solitary bunch of cardinal flowers growing as luxuriantly and brightening the landscape as cheerfully as it did long years ago. We remember how delighted the children were with the little button roses which they had found in the pasture right where Grandpa's old house used to be. We know that for thirty years the cows have grazed about the old home and still the little roses bloom and the lilacs and sweet briars flourish without care.

Returning home we take up our catalogue and proceed to investigate. Great possibilities unfold before us and again we are enthusiastic.

Our previous experience has taugt us caution, and if we pro-

ceed carefully we may have a garden which is a thing of beauty and a joy forever.

The oldfashioned border of our grandmothers is still very desirable and convenient for perennials. A strip twelve or thirteen feet wide and as long as desired filled with such plants as Day-lily, Paeony, Per. Phlox, Iceland Poppy, Hollyhock, Dianthus Delphinium, Sweet Williams and hardy grasses when once established will endure a great amount of neglect or respond readily to good care. If sickness or emergencies yield no time for constant watchfulness we are reasonably sure that when we do have leisure we will find something still remaining and often will be surprised at the improvement which nature has wrought during our enforced neglect.

Hardy roses or other low growing shrubs may be placed at intervals of six feet with good effect and bare spots filled with self sowing annuals or hardy bulbs. To the berry grower I would suggest the planting of the Paeony for spring and the perennial Phlox to be enjoyed after the berry season with its hurry is gone. The Paeony is perfectly reliable. The flowers are beautiful and the plants look well during the whole season. While the foliage of other plants often looks shabby and faded the Paeony always is fresh and green with a beauty all its own. Even after Jack Frost's early visits it shows nothing but autumn tints until winter sets in.

Give the plants a well drained, well worked and well fed soil. Transplant in the fall placing the crown at least three inches under ground. For use in country cemeteries which are remote from your home nothing will excel the Paeony. It is not subject to diseases nor troubled with insects.

The fall Phlox gives us a dark green foliage which forms a pleasing contrast to its beautiful panides of flowers ranging in color from the purest white through pink, salmon rose, lavender and purple, many of them showing the delicate distinct eye of a darker shade. Give them a rich, moist, (not wet) soil and you will be delighted. In selecting plants for your border do not trust too much to the statement of the catalogue that it is hardy, look about you and see what it has endured. If you are not certain consult some reliable person who knows. If no such person

is to be found write to our Editor and make use of the question box.

Then when those cold, cold, days in winter come you need not shiver with the thought of tender plants but rest in the assurance that some of your border plants at least are as hardy as wild mustard.

President Johnson in the chair.

The President—This excellent and suggestive paper is open for discussion.

Mr. Smith—In refernce to selecting plants from catalogues I have had more or less experience with them, and find that it is very often the case that the plant that we want is said very little about; the name is put down, and it will be "white with pink eyes," or maybe just a few words that occupy but one line, and the one that takes half a column is much more liable to be one that you would hardly think worth mentioning. You will notice that in examining the catalogues, that if you will examine carefully the centers of the catalogues, the varieties that very little is said about are the ones that the amateur wants.

Dr. Loope—The article speaks of the paeony. Now there are a good many different varieties of paeonies, and I would like to get them. I do not know what to send for. Another thing that troubles me, — I sent out for an order of flowers, or fruit or anything else, send to what I consider a reliable firm; they do not notify me that they have not got them, but they take my money and send me back something else that I do not want. Welll, that is the most miserable thing anybody can do, and makes me the maddest, because I do not send for that; I wanted what I sent for and if they have not got that, they might tell me. That is the trouble. I do not know what to send for in some of these things. I want a collection of paeonies, I have got a few, but there are a great many different kinds recommended as being very fine, some of them I never saw, but I have got to get them from some place. I would like to have somebody coach me.

Mrs. Treleaven—At the home of Mrs. Fiske there are some of the finest paeonies that were ever grown. There are a great many varieties that were seedlings; I could not say whether they would dispose of them or not, but there is a great quantity of plants there and they are very fine.

Mr. Sperback—I have a white paeony, very hardy, that I can supply to you.

Mr. Smith—We have some large purplish-pink paeonies, and I want to back up what I said in my paper, I want to sell them.

Mrs. Ihrig—I think if the Doctor would look a little nearer home and not so far away, he would have better luck.

Mr. Barnes—We have bought a great many paeonies from Westville, Ohio, and I think everything has been very satisfactory that we get from there. They have some rose-scented paeonies there that are very grand, and some variegated flowers.

Mr. Kellogg—A year ago last winter cleaned us all out on paeonies; we had seven varieties, but there is a little finger leaf, the earliest that we ever had bloom, is very promising, and I am going to get it back again. Speaking of our friend Fiske's home, if I were right in the nursery business as my friend Coe is, I would go up there and make a selection; I would buy them at any price. The collection there is one of the finest of seedling paeonies that I ever saw, unless they have been scattered. I saw at Mr. Coe's place only a few weeks ago some very fine paeonies.

The President—Do you know whether they have ever been distributed from Mr. Fiske's place?

Mrs. Treleaven—They have not. Mr. Fiske had always promised me some of them, but I neglected to get them before he died, and I understood from him that there were seedlings there that had never been taken away from the place.

The President—I was much interested in what Mr. Smith said about catalogues. I do not know anything about flowers and I do not study the catalogue, but Mrs. Johnson had some exp rience in sending for some varieties.

Mrs. Johnson—I would like to say that I heard Prof. Goff say that he found Mr. Fiske's collection of paeonies the finest for dealers. He was a guest of Mr. Fiske, I think, at the time

he was collecting them. There is one thing I wanted to speak about, and that is the Chinese bell-flower. I have seen it spoken of as tender somewhere lately, but that hard winter that killed out everything, killed every rosebush we had, left the Chinese bell-flower in fine condition, and it blossomed all that year, and it has blossomed this year, in spite of the drouth.

Mr. Coe—I had the pleasure of visiting the nursery of P. S. Peterson at Rose Hill last year, where they had six hundred varieties of paeonies, and I think that would delight the Doctor's heart, I know it would. Six hundred distinct varieties of paeonies, five acres in full bloom, and they are all colors, from the purest white to almost black. If any one wants a collection of paeonies they can surely get them there. It is the Rose Hill nursery, near Chicago.

Mrs. Barnes—In regard to the Chinese bell flower, they do not seem to put forth any buds and very few leaves. I do not know what is the trouble; I would like to know.

Mr. Clark—I want to warn people against the black ants which infest paeonies; if they once get the start of you you can do nothing with them.

Mr. Kellogg—What do you do to destroy the ants?

Mr. Clark—I use hot water, if anything.

Mr. Kellogg—I find cold water is about as good as anything. Dig out the nest and put on the cold water. I tried warm water and they liked it.

The President—It is nearly time for adjournment. Has the secretary any announcement to make?

The Secretary—I want to say to the people from Wausau that we have some of the reports here for distribution, and there is a limited number of copies of the Wisconsin Horticulturist that you are welcome to.

The President—I will announce the following committees: On Plants and Flowers, Mrs. Irving Smith; Strawberries, L. G. Kellogg; Vegetables, S. H. Marshall; Resolutions, B. F. Hoxie.

Recess.

2 P. M.

The President—The first thing on the program is a paper by Hon. Charles Hirschinger. Mr. Hirschinger took a great deal of pains to prepare a very interesting article, — I happened to to see it last night. Perhaps I am partly to blame for Mr. Hirschinger not being here; I told him if I came I would go down and start with him; he said he did not want to go unless he had company, and perhaps he backed out because he thought I was not going.

Mrs. Johnson moved that the paper be printed in the proceedings.

The Secretary—I shall make an effort to get the paper. The papers that appear on the program will be put in the proceedings, whether read here or not.

The President—If it is so understood we will let it pass at that. Mr. Hatch was unable to come himself, but he has prepared a paper, which Mr. Bingham will please present to us.

HOW TO PLANT A FRUIT TREE.

By A. L. Hatch, Sturgeon Bay, Wis.

If fruit trees have become dried or shrivelled before planting they should be immersed in water for a few hours or buried all over in moist earth for a day or two, to restore the moisture in the wood. Moisture is absolutely essential and the most important part of the conditions of transplanting. The absolutely necessary thing to do is to so place the tree that it can supply itself with all the moisture it needs. To do this we first prepare the tree so that as little will answer the purpose as may be and that the tree may draw as much moisture from the soil as it can. To lessen the requirements of the tree we always shorten in the tops very much, leaving only one-third or less of each branch. At this time defects are corrected and the shape improved as much as may be.

Our next consideration is to put the roots into the best possible condition to absorb moisture. This we do by cutting off the bruised ends of all roots of any size, as the fresh cut ends will much more readily absorb moisture than the bruised, broken and dead root ends can as they are left in the process of digging and handling. Of course all broken and badly bruised roots that will be of no use should be removed, and long straggling roots that would be difficult to plant should be shortened in. It is not the aggregate amount of root on the tree that is the most valuable in planting, but rather the greatest amount of ends of roots. It is at the ends of the roots where nearly all the new growth takes place and where rootlets must be formed to nourish the tree. Hence it is perfectly proper to cut off long roots and bring them into reasonable proportion and excellent results follow even very severe shortening in, when care is taken to preserve as many root ends as possible.

I have assumed that the site has been selected, the ground prepared, and the holes made ready. Every tree should have its roots well puddled in thin mud just before being put into the holes. In ordinary clay or common soil make a small hole a foot deep, into which pour a pail or two of water and mix with some fine earth until about the consistency of thick cream. Into this plunge the roots of every tree prepared, and it is best to limit the number to what can be placed in the holes where they are to stand before the mud can dry on the roots. It is very important to get the roots into the ground while still muddy as the aim should be to stick the earth onto the roots—or in other words to bring the soil into the most intimate possible connection with the roots themselves.

Not only will this puddle secure close contact with the soil but will of itself attract more moisture to the exact place where it is most needed. If we have many trees to plant one man is set to distributing the trees and he puts only as much earth over each tree root, as he puts it in the hole, as will prevent drying. In this way the trees go into the ground with the least possible exposure. Another man follows at once to fill in around the trees and is required to tramp the earth in hard around the roots and leave loose earth over the surface. Of course the earth is

placed among the roots when there is a mass of fine ones. This is necessary to prevent the roots being pressed upon one another. The idea is to get the roots in contact with as much soil as possible and in such condition that they can draw moisture promptly and continuously from the soil. To this end nothing can substitute puddling the roots as I have described and pounding the soil hard upon them. Nine-tenths of failures result from neglect of these two items.

In firming the soil after a reasonable amount is placed about the roots the tree should be first brought into position — slightly slanting toward the south-west, or the prevailing winds — as it is not easy to change the position of the tree after the earth is firm about the roots. Ordinarily the transplanting is considered done right here, but there are two or three more considerations that bear so intimately upon the success of the tree the first season that they should be attended to. A very common cause of failure after planting is to leave the trees in growing grain and give no culture. This usually proves fatal to fully one-half the trees, and seriously cripples the other half. Fruit trees should always be cultivated several times after planting until July, when some cover crop can be grown upon the ground, or a good mulch be given in October, as a protection to the roots during winter.

By cultivation is meant stirring the soil just as it is stirred in corn culture or potato growing. Should there be drouth apprehended after planting and it is desired to be sure of success, then, after thorough cultivation of the soil, apply a thorough mulching of half rotten straw. Animal manure should not be applied to young fruit trees where there is any danger of fire blight, or where the soil is reasonably fertile. Another thing that helps very much, especially where hot winds prevail and the sun's heat is intense, is to wrap the trees about with straw or hay. For this purpose straight rye straw is best. Set it on end around the tree trunks and tie in several places with common wool twine. If enough is used to fairly cover the trunks and it is let to go up among the branches along the center of the tree it will afford protection where most needed and may remain until it decays. This will last usually for three years or more and will be a better

protection against winter sun-scald than the much talked of and bragged about lath protector.

To summarize: 1st, prepare the tree itself by shortening in both tops and roots; 2nd, thoroughly puddle the roots in mud mortar; 3rd, thorough firming the soil about the roots; 4th, cultivation, mulching, and winter protection to the roots by cover crop or mulch; 5th, trunk protection to prevent injury from winds and sun heat summer and winter. This latter item should include a bank of earth close about the trunk eight or ten inches high, each fall, as long as there is danger of injury from mice during winter.

If trees are planted as herein recommended success will follow, and they will become well established the first season, which is the most critical period in the life of a fruit tree.

Mr. Clarke—I would like to know if anybody believes in this thing of summer sunburn of trees.

The President—I would like to have the gentleman who asked the question give his opinion.

Mr. Clarke—I am of the opinion that what is called sunburn is the result of a cold wave following a heated term.

Mr. Bingham—Prof. Goff says that he believes the first summer after transplanting is the most favorable to the sunburn; it is owing to the free circulation of sap throughout the tree, and it is what we call sunstroke.

A Member—I would like to ask the gentleman if he would recommend puddling of raspberry roots the same as we do apple tree roots in planting?

Mr. Bingham—I would, I would recommend puddling roots of strawberries, or anything. I do not think there is anything to substitute in transplanting.

Mr. Barnes—Experience has taught me that the puddling of plants must be largely controlled by the soil you are planting in. If you puddle fruit trees in a clay puddle and plant them in a very sandy soil and it is a dry season, I will guarantee that this

clay will bake about those trees and your trees can not grow. If you are planting in sandy soil, do not puddle your trees with clay.

Mr. Hoxie—I think all these things should be taken with a great deal of allowance and qualification. My opinion is if you puddle a tree and put it in the soil as you find it, now for instance, it is an extreme case that an actual damage to the tree arises; if we put it in the soil with simply the roots moistened, it is highly possible that the tree mght live, but if we puddle it with clay we close up the pores and give it no chance for existence. Another thing, with tree protection, you have probably noticed that those who transplant large forest trees or nursery trees that are large enough to require a pair of horses to draw them, the whole trunk of the tree is protected by the winding about it of twisted hay. You who visited the World's Fair saw some of those trees a foot in diameter, and I was told this morning that some of the trees transplanted there from Peterson's Rose Hill nursery are vigorous now as they were then. They were absolutely protected by this wrapping around the body of the tree.

Mr. Barnes—I believe, Mr. President, that this system which Mr. Hatch advocates of wrapping the trees with rye straw ought to be practiced more than it is. We lose a great many trees after we get them planted, just by neglect. If you wrap it with this soft rye straw — and by-the-way,I cut several acres the fore part of the week — if you cut it before it is ripe, it is soft and pliable, you can wrap your young trees with it, and pour water on the end of the wrapping, and that will hold the moisture in the tree trunk and will do the tree more good than a bucket of water around the root.

Dr. Loope—What percentage of trees do you lose in setting out by any method?

Mr. Barnes—I have planted in some seasons in some sites a hundred trees and not lost one, I have planted in unfavorable seasons and unfavorable sites, under a rather careless system of planting, and have lost 25 per cent. I might say, I have planted 166 shade trees in Fond du Lac this spring, and while I could not afford to wrap them, I did mulch them, took water by the

hundreds of barrels and wet the ground thoroughly after I had mulched them, and I figured last week that I was going to lose about 6 per cent. of those trees, and the trees stand 8 to 14 feet high, and this is one of the most unfavorable seasons; but they were favorably planted. They were put in a puddle and soaked thoroughly before planting, every tree had a large excavation and they were thoroughly dampened with spraying while we were planting; after they were planted we mulched them thoroughly, hauled water by the hundreds of barrels, wet the ground thoroughly, and I am not going to lose over 6 per cent.

Mr. Bingham—In regard to puddling fruit trees, we have had considerable experience for several years, and we have planted in dry seasons and wet seasons and on different soils; while I would not recommend puddling in clay while planting on sand, I would puddle in the same soil I would plant in. We have planted as high as two thousand trees in one orchard and never lost a tree, simply by our method of puddling and pruning.

Dr. Loope—Where do you buy your trees?

Mr. Bingham—Grow them ourselves.

Dr. Loope—That makes a lot of difference. Mr. Hatch is a very good judge of a tree, and probably this gentleman is, and while they grow their own trees they do not take the poor trees, but while you are selling out of a nursery, you dig the trees and you sell them, if they do not happen to be exactly prime, you let them go, and they will pass inspection perhaps. Now in regard to fruit trees, of course I have had quite a little experience in planting trees and have lost very few trees. In the summer of '92, I think, when we did not have rain enough after we planted them for moistening the roots until September, there were thousands of trees that we put out. We mulched them and set them out, and I think we puddled them too, but there were very few of those trees died, and many of them did not leave out until September, and passed through the hot summer in that way and they are alive and flourishing now, as any of you who were in the Duchess orchard last year can testify.

In the matter of setting trees, — when you have got good trees and they have not been subjected to any great exposure, I do not think there is much difference whether you use all those

particular appliances or not. If you have good ground and you put the tree in and there is enough nourishment in the ground, the tree will live without any question.

Mr. Dickson—I never puddle, but I use lots of water in the hole. I have set yews and box elders, some of which were six or seven feet high and had young shoots on about a foot long but I did not expose them to the sun. I bore two or three holes and after digging them wide open, add a barrel of water, and use two or three pails of water to mulch them. For a couple of weeks they looked sick, but they are now doing well.

Mr. Coe—I believe that I heard Mr. Bingham say that they cut back the top of the tree one-third to one-half, is that so?

Mr. Bingham—Yes, one-half or two-thirds.

Mr. Coe—Now if I were going to plant one tree or a thousand trees, if that tree had an overgrowth, an extra top, I would not cut any of that top off. My experience has been with a good many trees planted with the top on, they made every time a better growth than where the top has been cut back. I believe for one that the old roots should be cut off in all cases, that is where we get the new re-growth, from the fresh cut surface, and then the tree packed in the soil firmly. For puddling trees you should use a heavy clay, that, for good prairie soil, for instance, is all right.

Mr. Clarke—How do you stand on spring or fall planting?

Mr. Coe—I believe spring planting is better.

Mr. Bingham—This spring we had some silver maple. A party wanted four of those planted in his yard, and we let him have the four trees, the best we had. He planted them and did not cut the tops back; I planted mine by the road and cut the top back one-half or two-thirds, or three-fourths, and I have a good growth on mine, and the man that did not cut his back did not get a good growth and they will probably all die.

Dr. Loope was asked his opinion in regard to planting forest trees.

Dr. Loope—That is a point that I do not know anything about. I only know in regard to planting apple trees, but when you come to forest trees, I think you have got to deal along different lines, and I do not know anything about that. I

know that they die too often, I have seen that, but I do not pretend to be informed on the subject of forest trees, and especially upon the subject of evergreens, I do not know anything about how to do it. I presume if Mr. Brown were here he could give us some pointers there.

Mr. Barnes—I would recommend fall planting in northern Wisconsin under favorable conditions; if the ground is in reasonably moist condition, as it sometimes is, and if we get sufficient snow the following winter, it is the best time in the world to plant a fruit tree in Wisconsin.

Mr. Sperback—I believe one important point in setting trees is to set them when the soil is in proper condition and placing the firm soil about the roots. In regard to cutting the tops back, I always have practiced that, and I always feel that the roots and top of a tree should correspond, and when we take up a tree we naturally spade part of the roots off, and I always cut back the top in proportion.

Mr. Kellogg—There are those who advocate close cutting of the roots back to four inches and think it is the best way. I have advocated and practiced cutting back the top in proportion to the loss of roots, which I believe to be the true rule, but I think there are exceptions in all cases. I believe that trees for the best success should be dug in the fall and kept in a cellar through the winter.

The President—In this discussion there was one gentleman, I do not remember positively who, brought out what I consider is a very important point, that is, to plant when the ground is in good condition. That is a pretty good rule for almost any crop, to plant or sow when the ground is in good condition, and Mr. Kellogg has added to that by saying how the trees can be dug in the fall and kept until the ground is in good condition.

It seems as though we ought to have a little talk on strawberries here this afternoon, and I will call on Mr. George Kellogg to talk on any line that he may see fit.

Mr. G. J. Kellogg—It would have seemed very appropriate that we should have had a paper on strawberries, with these strawberries before us, and a paper on roses, with the show of roses. We have before us the fruits of some five or six different

growers, I believe, I do not know but more, from different parts of the state, showing the condition of the fruit under the drouth. If we can gain any point this afternoon in regard to the varieties that are standing the drouth best, or what treatment has given the best success in this dry year, it is well for us to consider the matter. The fruit on my table, grown at Janesville, with the exception of three plants, I think, are all grown from last spring's planting a year ago. This is the first crop, and the ground is so dry and dusty that one can hardly stand it to pick the berries; going outside of the mulched ground it is terribly dry on the ground 75 feet above water, and there has been no water applied to the plantation at all. We grow by the acre and we missed it this year that we did not take up all our plants and sell them instead of trying to have any fruit, but I have some few varieties that are very promising after the three years' trial I have given them. I would impress the fact that the Clyde has come to the front as the greatest money maker of any of the varieties that have appeared in the last ten years. That has been our experience. We have grown probably 250 varieties of strawberries, and tested them. Sometimes we do not test long enough. It takes sometimes more than three years to prove a variety, and the three different seasons are altogether different in climatic conditions. Now anything that makes a good show this year deserves credit. They grow in free culture and grow in matted rows. I do not believe that I would recommend pistillates, any of the varieties, still, if you must have a pistillate, the best for growing, for shipping and for productiveness is the Warfield, but it will not stand the drouth worth a cent; it will curl its leaf quicker than any other variety in the ground, it must have water.

If I were planting one variety for hill culture, I would plant Parker Earl, and before autumn, perhaps in September, I would cover the intervening ground between those hills six or eight inches deep with well-rotted manure, then I protect the hills with marsh hay, and then if I can give it water I do not know of anything that will produce equal to it for hill culture and pass through the season with the least labor. The best four perfect varieties that we have found in the last twenty years for general culture, not only in my soil but other soils and other

states and all over the country, have been the Wood, Lovett, Splendid and Clyde.

The President—I would like to ask how the Clyde holds out, that is, will it hold out large for an entire season or does it grow smaller?

Mr. Kellogg—That is the only fault I have to find with it, that it does not hold its size through the season and it is not a good shipper, but for family use it is one of the best.

The President—It seems to me that Mr. Kellogg has brought out an excellent point in his talk. Now if some of these other berry growers have some other point with regard to strawberry culture that they would like to bring out, the difference between success and failure in strawberries depends on a great many little things, we want some of those little points now.

The President—Mr. L. G. Kellogg, how do you cultivate?

Mr. L. G. Kellogg—Take a horse cultivator and cultivate them.

The President—Why do you use a Planet Junior instead of the regular corn cultivator?

Mr. L. G. Kellogg—I think it does more efficient work than the common corn cultivator.

A Member—Do you use the 12 or 6 tooth cultivator?

Mr. Kellogg—Use a 5 tooth cultivator.

A Member—Do you not think the Planet fine-tooth would be better?

Mr. Kellogg—Well, early in the season we use the fine tooth, we have two or three different kinds. We have the inch and a quarter tooth and the 3 inch and then we have side scoops that we use for the shallow cultivator.

A Member—Did you ever use the weeder?

Mr. Kellogg—No, we never used the weeder.

Mr. Carpenter—We attempted to use one this year on our new plant bed which we just set, and our soil is quite light and sandy, and we had to raise it up so as to make it go so shallow that it could not do any work, in order to keep it from pulling the plants out.

Mr. Coe—If your plants are well rooted in the soil a weeder is all right, we have used it on our beds and it does good work,

provided the soil is in the right condition, but we want to get the idea that a weeder is not a cultivator. A cultivator is simply to make fine the surface of the soil and kill the weeds before they get out. We use a Planet Junior cultivator in all our beds, a twelve-tooth cultivator, and this leaves the soil as fine as can be, almost in the condition that a garden harrow would leave it in.

The President—That point I wish to agree on, that the strawberry grower uses a fine-tooth cultivator.

Mr. Herbst—We use the Planet Junior machine for our strawberry beds, and we cultivate both ways until they begin sending out runners, then we take it one way. Now the question is, why use the fine-tooth cultivator? you have not given us the reason why you use it in preference to the larger tooth machine. I use the Planet Junior and the weeder for this reason,—the moisture from the soil evaporates from the soil by capillary attraction; by using this fine tooth cultivator or weeder, and using that often, we prevent that capillary attraction from coming to the surface of the earth, you put on there a dust cover that keeps your moisture from evaporating. In the year 1894 when we had the awful drouth, where we went probably two months without a rain, we kept up this cultivation continually, and we kept that dust cover on, and we claim that is what saved our plants.

Dr. Loope—How late did you cultivate.

Mr. Herbst—We cultivated continually during the season; except at the time of berries we quit cultivating long enough so that the berry had time to develop.

The President—Dr. Loope has suggested another question that I would like to have brought out here, that is, how late do you cultivate your strawberries. I would like to have the experience of different growers.

Mr. Herbst—We cultivate ours up till frost, or new setting, keeping the runners in row in that way.

Dr. Loope—I would like to ask the distance apart that you set the plants?

Mr. Herbst—Our rows are three and one-half feet apart, and plants two and one-half feet in the row.

Mr. Bingham—We plant usually 4 by 2, and we keep cultivating, of course, till the end of the season. We very seldom

have a foot of space left; we cultivate them right through, and perhaps the last cultivation is to keep them apart and keep from mixing varieties.

Mr. Sperback—I set my rows four feet apart, which gives me a good matted row and gives me plenty of room to cultivate, and I use the Planet fine tooth harrow or cultivator; that I think has 12 teeth; it leaves the soil in smooth and good condition and I think it is better than the coarse tooth cultivator.

The President—There is not any one but has noticed there is a great difference in the different kinds of plants with regard to the temperature in which they will grow. For instance, rye will germinate under the snow; it may not be germinated in the fall, but in the spring when the snow goes off you will see the rye up.

Mr. Barnes—I have seen strawberries that I thought grew in the winter time, that were heavily mulched when there was little frost in the ground, and when deep snow came afterwards.

The President—I think under certain conditions that strawberries have made quite a growth during the winter.

Mr. Barnes—This seems to be just the kind of meeting that is doing us all good. If in order, I would like to ask one or two questions about apples.

The President—Well, we will give you an opportunity, Mr. Barnes, but let us finish this strawberry business first.

Mr. Carpenter—I would like to ask if any one has used any commercial fertilizers on strawberries, and if it will pay?

The President—Excuse me, but there is one step further on this strawberry question that I wish to bring out before we take that up, and that is this, I would like to have these growers express themselves with regard to covering of plants in the fall; whether it is usually done too early, or put off too late, and why?

Mr. Sperback—My impression is that a great many of us put off the covering too late; that the plants should be covered earlier than the majority of us cover them. I believe I know of buds that have been ruined in the freezing and thawing in the first part of the winter, and I believe in covering pretty early.

Mr. Coe—If all the conditions are right I believe in early covering, but if we have a late, wet fall, I would not like to cover while we are having warm, wet weather.

The President—We would like to hear from both Kelloggs on that.

Mr. L. G. Kellogg—I believe the covering on beds is often put on too late. A great many people I know put off the covering until January and February and until March, but if the condition of the plants is right, they will stand this freezing and thawing, if they are thoroughly ripened in the fall; but there are certain seasons that they will not go through the winter, whether covered early or late, and I believe we had one of those seasons last season. I know my strawberry bed was pretty thoroughly root-killed, that it is producing few berries. The roots were not right, the growth did not start right, a great deal of foliage was killed when it came along in spring, and I believe in the early covering of the beds, at least the first of November. I have preached it, but I do not always practice it.

Mr. George J. Kellogg—Mr. President, I have no question but what we ought not to delay our covering too late. As Mr. Coe said, if the ground is not wet and the weather warm, I believe in putting on half the covering as soon as the frost begins to fall on those runners, the first frosty nights I would put on half the covering, say the first of October, then finish it up any time later, a month, or longer, if necessary.

Mr. Sperback—I have covered strawberry plants with cow manure and killed everything. The covering was too heavy and smothered it.

Mr. Hanchett—I think manure is very poor covering for strawberries; rotted manure especially will kill them every time if put on in the fall. We have covered with straw manure with very good results. I believe in covering before the ground has been frozen in the fall.

The President—It seems to me that the testimony of these growers is pretty unanimous on that point, that we are more apt not to cover early enough than to cover too early. Can you tell in the fall whether your plant has been injured by freezing, or not. Have any of you observed in the fall that your plants have been hurt before you covered them?

Mrs. Treleaven—Yes, I think so.

The President—How do you know.

Mrs. Treleaven—I can see that the runners are damaged, if you notice particularly.

The President—You noticed the runners and foliage had been frost-bitten.

Mrs. Treleaven—Yes.

The President—Has anyone else noticed that.

Mr. Herbst—Certainly the runners will be damaged by frost, but then the strawberry plant can grow continuously for all that. The leaves are certainly hurt by frost, the same as leaves on the tree. I do not think you can tell anything at all whether your plant will be damaged by the frost or not.

Mr. Sperback—I believe the frost injures the last runners more than any other plant; they have not got a firm root and are more tender. The first runners that take root have a strong hold and the frost does not injure them so much.

The President—Now it is generally accepted here that under certain conditions strawberry plants will grow in the winter under the snow. Will a plant grow well if its leaves are frost-bitten; will any kind of a plant grow after its leaves are frost-bitten?

Mr. Herbst—No, sir.

The President—I may be mistaken, but I had an idea that Mrs. Treleaven hit it pretty nearly, that when the leaves are frost-bitten the plant is hurt; I do not say it is killed. There are lots of strawberry plants hurt by freezing, but you do not know what the trouble is. What are some of the indications if they have been hurt by freezing, that is, where they have not been killed. Have any of you seen any buds this year that you thought had been hurt by the winter?

Mr. Hanchett—I do not think I have seen any that have been hurt. The first indications I have noticed this year has been, people said, it is getting too dry for strawberries, they were talking of blight and rust and all those things. I think under normal conditions, that if a strawberry goes through a winter without being damaged, that we need not be afraid of blight or rust or dry rot.

Mr. Sperback—I believe one indication by which we can know that a plant has been injured is by its starting in the

spring; part of its life force is gone and it is very slow to start as it should start if it had had proper care and had its full life and vigor back of it.

Mrs. Treleaven—I find our strawberry crops are damaged by injudicious work in the spring, taking off our covering either too early or too late.

Dr. Loope—I noticed the same thing that Mr. Hanchett speaks of. We covered with marsh hay; we did not remove all of the covering, not nearly all of it, only took off a little part of it, and did not take that off early, and our plants came up through that and looked pretty well, but when we commenced to dig our plants for setting, we found a great many of those black roots, — dark-colored roots; they did not have the right color, and we found the plants died after we set them out.

Mr. Carpenter—I wish to ask about the use of commercial fertilizers; if it would pay to use commercial fertilizers on strawberries? We have never had any experience on that line.

Mr. Coe—We have used it a little bit, and I do not know whether it has paid or not. We never could see that it did, and for that reason we quit it.

Mr. Barnes—I would like to ask Mr. President, if lime, or decomposed shells, as we have in the Waupaca County marl beds, with the decomposed shell that will analyze from 90 to 97 per cent. lime, we have any amount of that fertilizer, would that be good for strawberries? I am ashamed to say I never tried it, so that I would like to ask from people present, if they think it would be valuable for fertilizer for strawberries?

The President—Nobody seems to have tried it. You had another question.

Mr. Barnes—I wanted to ask if any one knows anything of the Sunrise apple tree that Charles H. Chase of Rochester, New York, is pushing all over Wisconsin at a great big price.

Mr. G. J. Kellogg—There has been one question in connection with the strawberries of this country that has not been touched upon, and that is, insect and disease. Has any one this year discovered any damage by strawberry weevil?

Dr. Loope—None in our section.

The President—Mr. Kellogg has opened up a big subject.

Mrs. Johnson—I would like to ask if that is the little insect that Mr. Pearson spoke of in a number of the Horticulturist, that he thinks causes the knobby strawberries?

Mr. Kellogg—Same thing exactly.

Mrs. Johnson—We have had some knobby strawberries this year.

The President—You spoke of the Warfield not standing the drouth, as quick as the drouth comes it will wilt. I had the same experience last year, it rained once or twice a day, Warfield was drying up, leaf all wilted, first I thought it was leaf wilt, but it was not.

Mr. Kellogg—It will do the same thing if the roots are injured in the winter.

Mr. Barnes—Are not your Warfield starved, were not the plants so thick that they had no more fertility to draw from?

The President—Well, really, I do not know what the trouble is. I begin to fear that it is some disease or insect that has a peculiar liking for that plant. You know the white grub won't eat anything else as long as he can get Jessie strawberries, and so the other insects; they have their favorites. Some plants seem peculiarly susceptible to certain kinds of diseases; I did not know but something like that ailed the Warfield.

Mrs. Johnson—Mr. Tarrant gave me a few bushes of the Bangor blackberry a few years ago, and they came through both winters with but half protection; the cold weather came on, and they lived and fruited full this year; so I think they must be a hardy berry.

The following paper was read by Mr. L. G. Kellogg, "Is the Wausau Orchard a Safe Guide for Northern Wisconsin Planters."

IS THE WAUSAU ORCHARD A SAFE GUIDE FOR NORTHERN WISCONSIN PLANTERS.

From the first impression this topic would appear an easy one of solution and could be answered in the affirmative without discussion.

But when we consider the varied conditions under which nursery stock is subjected, from the time it is dug and packed for shipment, by the nurseryman, until it is replanted, the location, soil, how planted, after care, etc., all of which enter into the success or failure, this question may also be disposed of with as much assurance with a negative answer.

The nursery agent and not infrequently properly called the tree shark is an important factor which also enters into the discussion of this problem.

The prospective planter may use his best endeavor to obtain all information possible upon the subject of tree planting, visit the trial orchard and select only those varieties which have proved hardy, yet with all of these safeguards may fail of success on account of the tricks of the wily agent or dishonest nurseryman in substituting varieties which are indigenous to southern climes and not adapted to withstand the vigorous winters of northern Wisconsin.

To those who contemplate planting fruit trees I would recommend only such varieties for northern Wisconsin as have proved hardy and vigorous at the Wausau Orchard. Purchase of some reliable known nurserman and insist on getting the varieties ordered.

Nature is lavish in her way and responds wonderfully to intelligent care and management. From the short time this trial orchard has been planted it has already been demonstrated that a limited number of varieties of the apple, plum and cherry can be grown with as much safety as the peach is grown in Michigan. With this orchard as a guide I can see no good reason why the people of this section of the state should not enjoy an abundance of these fruits.

I firmly believe the Wausau orchard will prove a safe guide

to northern Wisconsin planters, and I trust will again establish confidence in tree planting and thus our efforts in establishing this orchard will not have been in vain.

The President—The subject is open for discussion.

Mr. Barnes—Would it not be proper to discontinue this paper, or the discussing of it, until we visit the orchard tomorrow? We will have an object lesson there before us and Mr. Kellogg will be with us I presume, and I think it will be very proper to postpone the discussion of that paper until that time.

The President—Do you make that as a motion?

Mr. Barnes—No, sir, just as a suggestion.

Dr. Loope—I would like to ask a few questions. I would like to ask if it is fruited at all?

Mr. Kellogg—Mr. President, Mr. Herbst and I were there the fore part of May, put in some cions, and the trees were just in bloom, and I could not answer the question for the reason, it showed some bloom on two or three different varieties.

Dr. Loope—Does the curculio work at it?

Mr. Herbst—On some varieties it is working; on the Desoto and on the Cheney.

Dr. Loope—Then I would like to ask from the assembly here whether the apple curculio is the same curculio that gets on the plum.

Mr. G. J. Kellogg—I understand the plum curculio and apple gouger look very much alike, and while the apple gouger stings, the curculio makes his mark and deposits his egg, that both cause the same defect upon the apple; it is done when the apple is very small and you can see the effects of it when the apples are not much larger than a pea.

Dr. Loope—I have been giving this subject some attention. In our orchard last year almost every apple was twisted and distorted with the work of the curculio.

Dr. Loope—We have made a frame and put on a sheet 16 feet across. This is put around the trees, and then we go up and jar the tree, take a big club. Of course a great many apples

drop off, but that can not be helped. The minute the curculio gets down, there it is, a little black spot; hardly notice it, but you let it lie there, and the legs sprawl out and it begins to fly.

A Member—What do you do with them?

Dr. Loope—Pinch them.

Mr. Sperback—I would like to ask the gentleman whether he ever sprays the trees and if it is beneficial?

Dr. Loope—We believe in spraying, but we can not spray the apple trees just now, because it would spoil the other crops.

Mr. Marshall—As to the plum curculio, I sprayed my trees with the arsenic and Bordeaux mixture and I do not think it has any effect on them.

Mr. Kellogg—The insect is not a leaf eater, whether it is the gouger or some other fellow. It does not eat the leaf and poison does not reach him. This catching it in the sheet I have not followed up as systematically as the Doctor is doing. I have caught it lots of times, but I never followed it up so persistently as to save the crop; if you do that, that is the only remedy and you have got to get up in the morning to do it. In the morning they do not fly away.

The President—Do you do anything with the apples that you shake off?

Dr. Loope—No, no.

Mr. Barnes—Should not those apples be destroyed, to destroy the difficulty that you are after?

Mr. Kellogg—I do not think the insect is far enough advanced in those apples that you shake off, to develop any farther.

Dr. Loope—I do not think my observation is that he does not breed from the apple at all; he breeds somewhere else, because there is not one in twenty of those apples that show anything inside, or show an insect. They breed somewhere else.

Mr. Sperback—Do I understand the gentleman that there are two different curculios, one works in the plum and the other in the apple?

The President—Yes, that is so, I think, and that the Bordeaux mixture will not stop the plum curculio.

Mr. Sperback—Then there is no benefit in spraying apple trees with the Bordeaux mixture?

The President—Not for this particular purpose. It is of benefit to spray to prevent scale and different insects that attack the foliage, but this particular insect it does not reach.

Mrs. Treleaven—I have heard Mr. Fiske say a great many times he did not think there was anything that helped this curculio except the plan that Dr. Loope suggested. I heard him speak of it a great many times and I know he jarred his trees for this insect.

Mrs. Barnes—I would like to ask what the insect is that causes the branches to look as though they were wrapped in cotton batting.

Dr. Loope—I know what Mrs. Barnes refers to. I have seen a great many people wrap their trees in cotton batting to prevent them from getting up the bark. Of course if that prevents their getting up, it will save knocking them off. But the apple curculio can fly up easily enough.

Mr. Barnes—The Doctor does not catch Mrs. Barnes's question. She refers to an ornamental tree that we have in our front yard that has been afflicted for a number of years with what appears to be and what some have said is the woolly aphis; it attaches itself to the under side of the branch, and is soft and pulpy, enclosed in a little bunch of what looks like white cotton. We have drenched it with cold water and sprayed it with the Bordeaux mixture until we have got it reduced, still it will crop out. This is not the woolly aphis, if the sample I saw at Chicago last week at the Nurserymen's convention was the woolly aphis.

The convention then adjourned for the purpose of visiting the home of Mr. Brown.

EVENING SESSION.

The President—The first thing on our program this evening is, "Horticultural Incidents, from Early Settlers," by Mr. Hoxie.

Mr. Hoxie—Ladies and Gentlemen of the Wisconsin Horticultural Society: What I will have to say this evening will not be from any written prepared paper, but more in the way of an offhand talk. Some four years ago the society appointed a man as historian. We determined if it was possible to write up the history of horticulture in the state of Wisconsin from its earliest settlement, and in fact earlier than settlement by whites, taking the history of the Indians. J. C. Plumb was the man who was appointed, and Mr. Plumb made some progress in the work, getting out circulars and collecting some information. But last winter the society appointed a committee to consider the matter of preparing the matter obtainable for publication. That committee reported favorably to the work, inasmuch as we had already undertaken it, consequently the executive board, through the president, appointed Prof. Goff of Madison and myself as historical committee to collect and prepare the matter for publication at some future time, I do not know just when. On my way here I stopped at Madison, thinking I might be able to get some reliable data to present to the society, so that we might get at somewhere near the time when we could have this work published. Mr. Thwaites, secretary of the historical society, has some matters in his charge, the superintendent of the state printing is also absent from the capitol on vacation, so that everything is blank so far as publishing the history is concerned. Suffice to say that Prof. Goff and myself, after a consultation, decided upon a plan of work, in which the first chapter of the history would be devoted to the history of the Indians planting their orchards, and to the works of the early missionaries in this line. Then we were to take the early tree growing of the pioneers, the early settlers in Wisconsin and their efforts. Then we were to have reminiscences and sketches from the old settlers, biographical sketches from deceased members of the society,

prominent workers that had started in to plant orchards forty and fifty years ago, members of the state society and local societies. Then we were to have a sketch of the work of the Wisconsin State Horticultural Society, what it has done during the past 35 years or more of its organization, which would take another chapter. Then we would have a chapter setting forth some of the historically destructive winters we have had in the state, showing the results of those winters on tree growth and perhaps incidentally the discouragements produced among the farmers as to varieties and methods.

Then we were to have the fruits originated in Wisconsin. Let me say right here that perhaps it may be new to most of you, certainly to those not members of the society, to know this fact, that Wisconsin has originated and disseminated more varieties of apples than any other state in the Union; I say this guardedly, without any exception, more varieties of good, hardy apples. I do not say every one of those are the very best when you take the Jonathan as a standard to compare, but good hardy varieties, disseminated from Maine to California. We plan to have not only the history of these fruits, who originated them and where they have been disseminated, so far as we can tell, but also a cut showing the apple just as it is, a descriptive list of all these, as also of our wild plums.

In our biographical sketches we plan to have a cut, lithograph or half tone, the best that we could get, of the members that are deceased, and possibly some of the living members, the older ones. Illinois has undertaken this work, given credit to some of the members while they are living.

Now you see all this matter which I have outlined will take some time and considerable work and cost the society and state something, and if it is of any value, or will be of any value, I hope we shall have funds to publish it before the present committee that is appointed has passed away, but if it is not so, I hope the matter which we collect will be in such shape that our successors can go on and take up the work. In starting out we found that Mr. Plumb had not had his work in shape so that it was all available; afterwards most of it came into our possession, and some that he had been collecting is available and will be used in the work.

Then another thing, in the preparation of this work it will be necessary for the society to decide, and I wish that the executive board might decide upon that, so that we shall know how much to abridge and how much to enlarge upon some points, and that is, the number of pages, or the size of this volume to be published.

After setting out the full plan of work, the question was how to get this information. We could not very well get the names of the assessors of the several townships, 1,300 townships or more in the state, but the next best thing to do was to get the names of the town clerks, and we found those in the office of the state superintendent, and the Honorable Mr. Holliday very kindly donated to us the list which he had prepared, and I mailed to the clerks of the different townships a statement of what we were to do, with a directed postal, asking him to put on that card the names of those who were interested in horticulture. So we have a list now of nearly two thousand on those postal cards of names of those whom we suppose are somewhat interested in horticulture. We would send to the first and second names on those cards, as we could not send to them all, another circular, asking them to give us facts about a list of questions that is sent out with it, so that by this method and means we have collected and accumulated quite a large amount of material which must be looked over and culled and selections made.

I very much regret that Prof. Goff could not be with us at this meeting, both on your account and on my own account, as he and I are working on this matter to further perfect our plans, but Prof. Goff I suppose is better engaged, as he is now enjoying a trip in the old country, which he has for many years desired to do.

(Music.)

The President—There is one thing right along the line of this history that you will pardon me for mentioning tonight; I mention it because several persons have spoken to me since I came to Wausau, with the idea that the influence of the State Horticultural Society was local, that it is confined to certain portions of

our state. Well, that is true only in a certain sense. I will admit that the influence of the society is stronger in some parts of this state than others, but I think I am safe in saying that it has an influence throughout the entire state Mr. Hoxie is too modest to mention this, but you are well aware that this state has one day in the year that is known throughout the schools as Arbor Day. Perhaps most of you are aware of the origin of the day, I doubt if all of you are. Now I do not claim that the idea of observing Arbor Day originated in Wisconsin, but I will say this, that a bill was introduced into our legislature, because the State Horticultural Society requested our legislature to pass such a bill, and that bill was drawn up by the speaker of the evening, Mr. B. S. Hoxie. (Applause.)

We will now have a paper on "Home Adornment," by Mrs. A. D. Barnes, of Waupaca.

HOME ADORNMENT.

The subject given me for this paper is "Home Adornment." It is a very broad one, but we have been kindly requested to make our papers short, so I scarcely know where to commence and shall probably not know where to end, but as I am a mere amateur in this line, perhaps I shall only be too glad to comply with their wishes. It is so often the case when people are planning their future home they think first of their house. They plan it and build it, little thinking of the surroundings and after it is ompleted they find if they had only built their house a little farther back or at one side, what a beautiful lawn they might have, but then it is too late, they have paid no attention to the art of improving the grounds at the proper time, perhaps they make an effort after the building is completed, but then it is too late to obtain good effects. When you are planning your house, also plan your surrounding grounds. What a comfort it is to have a fine large lawn, with trees, shrubs and flowers. How desirable are trees with their fresh green foliage in spring, and with refreshing shade in summer. How inviting such grounds look,

and how they are enjoyed by those that possess them. A few ornamental trees, such as the cut leaf birch, mountain ash, with their bright red berries in late summer and fall and clumps of evergreens. Some of our natives make a very pretty tree when properly trimmed, the wild sumach for instance. Those that have the oak in abundance with its broad spreading branches and dense foliage are fortunate indeed. Where we do not possess them we might choose from the following: The Box Elder, Wisconsin Willow, The Popple, not the Lombard Popple that reminds us of sentinels, that stand to guard our homes, but the Carolina Popple that grows so quickly and furnishes such an abundance of shade, with their small silvery leaves fluttering in the least breeze that blows; then there is the graceful Elm that reminds us of our old home and many others that are desirable, shrubs planted in groups are very effective. There is the Syringa, Spirea Van Monti, Flowering Almond, Snow Ball, Althea, Hydrangia and a variety of roses: of these graceful oranaments the rose is Queen, what is prettier than a blushing rose, ladened with fragrance, any of these shrubs are desirable but do not plant them in rows, they look too formal, scatter them about promiscuosly. In some shaded nook could be planted native Ferns such as the Maiden Hair, Ostrich Feather and Lady Fern with a mixture of native violets are very pleasing. There are the climbing vines for porch and arbor: The Virginian Creeper, Clematis, Dutchmans Pipe, Wisteria, Climbing Honeysuckle and a variety of climbing roses. Then a little to one hide comes our real flower garden with a hedge of Arborvita as back ground with our tall varieties of flowers next to it, such as Hollyhocks, Sunflower, Perennial Phlox, Rudebecker or Golden Glow, Dahlias and a group of Gladiolus;part way down the hedge comes a row of Paeonies, the hedge furnishing the back ground against which to display these flowers effectively. Then comes the beds of Annuals: Verbenas Nasturtium, Pansies, Petunias, Phlox Drommondii, Sweet Alysium, Pinks in variety, Mignonette, Geraniums, a nice row of Sweet Peas and many other varieties too numerous to mention. Many of these annuals may be planted in beds containning bulbs that have blossomed earlier in the season. Nothing adds to the farmer's yard more beauty,

freshness and purity than flowers, there is some one on the farm that could spare a little time to cultivate a few flowers at least. Life would be brighter and labor lighter if the yard bloomed with sweet flowers. It is not to be expected that every thing I have enumerated here is to be planted in one lawn or garden; make a selection, though the list I have given is far from being complete. Do not crowd the lawn, leave a space for a grass plot. No one can cultivate flowers without loving them, communion with flowers is refining and spiritualizing. Surely surrounding ourselves with what is pure and beautiful in their helplessness, requiring our attention, will drive out impure thoughts and base ambitions, cleanse the mind and heart, and make of them fitting co-tenants in its earthly tabernacle for an immortal soul.

The President—As Badgers we are all proud of Wausau. As I came to this city on the cars today I passed through many a place that made me feel sad when I saw how every green tree had been cut down and everything covered with sheds and litter; but when I got to Wausau I saw something a little different. Now a good example is just as contagious as a whip, and when I hear the Wisconsin Valley and Waupaca on the subject of home adornment, I feel just as sure that the little towns surrounding will follow the good example as can be. And what we like about Wausau is this, that she realizes her position as metropolis of this valley and measures up to the responsibilities that are open to her. But Wausau is not the only city in this state of which we are proud. There are other cities that get ahead of Wausau in some particulars. Now in certain directions Menominee leads Wausau, and I am sure there is no city in the state that will appreciate what Menominee is doing when they know of it, any better than Wausau will. It is with great pleasure that I introduce to you Charles Ramsdell, who is connected with the manual training school at Menominee.

PLANNING AND PLANTING HOME GROUNDS.

There are few objects in a country landscape, that give such an idea of permanence, beauty, and well to-do comfort, as a thrifty, well kept orchard. It not only does much for the pocketbook of the farmer, but adds to the appearance of the farm. A man who has a fruitful orchard does not move every six months, or go to the Klondike or Cripple Creek, whenever the fever strikes him. The beauty of an orchard at all times of the year is appreciated, more or less, by every one, and its neat and trim order gives the owner as good a name as a well kept house and lawn. And of course we all say it is more essential to the farmer's success. But "The beautiful is as useful as the useful," as the poet has it. And no one can tell how useful a beautiful lawn and home grounds are to the owner.

It is in the reach of almost every property owner to make his place a pleasant spot and add to its homelike appearance in some way or another. Just how this can be accomplished is a problem to be worked out separately. No fixed and rigid rules can be given for its doing. What would make one place might spoil another. But every one can do something towards improving the looks of the home by the use of growing plants. If one cannot afford to buy the more expensive nursery stock, there are the native plants of the woods to fall back upon. The utility of collected natives in landscape work is little appreciated. Many shrubs are classed as brush by the average person,and accordingly grubbed out as weeds. But, if notice were taken of them at various seasons and their peculiarities studied, there would be very few but what would be desirable, if used rightly.

To improve home surroundings, it is necessary at the beginning, to have a definite aim and purpose. Utility and convenience ought to have first place, then desirability. To shut out objectional views, to give shade and seclusion to the home, to soften the straight lines of the house, and make it a thing of beauty, these are some of the objects to be sought for. But the greatest difficulty to the average owner, is to know what to do

and how to do it. This requires much thought and use of good judgment on his part.

First of all, comes the selection of the house site. It should not be close to the street, to avoid dust and noise. If the grounds are of large extent, a central location is desirable. On small lots, however, the general building line on the street, governs its distance from it. The barn and outbuildings are usually convenientt to the entrance at the back or side of the house, in a position not conspicuous to the passerby. The buildings should be set according to the street grade, just a little above to obtain good drainage, and still not too high to avoid expensive grading and steep entrances.

When the house site is located and the buildings erected, then arrangement needs attention. A ground plan or sketch of the place is oftentimes a help, as many details are overlooked without it, and then a record may be kept.

On most home places, the simplest is best. That means as large a lawn as possible, gently sloping away from the house in all directions, especially towards the street. The soil should be as good as possible, and if standing water is present, drains are necessary. Of course, in finishing a level, even surface is desirable. But if the grounds are more extensive, or more varied in character, different treatment is necessary. Any natural features should be taken advantage of. A natural ledge, a tree-covered knoll, a little valley, filled with woodland plants, a small brook, or pond, would add much to looks and interest. Then too, it is more economical, as grading is expensive. In fact, there are few natural features that cannot be utilized in some way or other. Of course, this does not mean, leaving a wet bog or, ragged pile of boulders, but simply using the materials at hand. Many times expensive construction work is thus avoided. The mistake is often made in obtaining the monotonous even surface of a park, where an interesting variety in lawn and meadow, hill and dale, is possible.

The entrances, both walks and drives, should be on as easy grades as possible throughout their length. Flat roads do not drain well, while steep ones mean hard hauling, so both extremes should be avoided. A road, dropping five feet in a hundred of

its length, is usually as steep as practicabe. Walks can be made steeper than this if needful. They should be arranged so as not to cross the lawn if possible, at least if the lawn is large. Therefore they should be at its side or back. Generally, on small places, a straight walk direct to the door is best. But on more extensive grounds, a curved drive or walk is often desirable to avoid a large tree, a ledge, or natural obstruction or to obtain a more level entrance. Usually a curving drive around a hill is better than a straight one over it. But aimless curves are to be avoided. If there are teams kept on the place, a turn or loop is necessary near the barn. This would be included in the back or working portion of the grounds.

The next thing to decide is the subdivision of the grounds. The extent and place required for the lawn, for both the flower and vegetable gardens, and for the working portion of the grounds, that is the storage and laundry yards, all, these need due amount of thought and judgment. The lawn, as a rule, is around the front and sides of the house toward the street. If it is the custom in the neighborhood to remove the front fences, then this lawn will be continuous along the street fronts. It should be as free from walks, drives, single shrubs, and showy flower beds as possible for a broad expanse of turf to give an idea of size and breadth. While the lawn ought to be as large as possible, still its size ought not to make its care a burden. On the farm, division fences or hedges are often desirable to keep animals off it. If the lawn in front is of good size, a small lawn at the side, usually between the houses, may be screened off by a hedge or shrubbery for a family lawn, a sort of outdoor parlor, if you choose. This is divided from the front or public lawn by shrubs or lattices to give seclusion from the passerby on the street. Here one may be as much in the privacy of home as in the house, and still be out of doors. This is only necessary in thickly settled communities. It should also be separate from the back yard.

Both flower and vegetable gardens should be convenient to the house, in a place free from shade, and still not exposed to the cold wind or burning sun. Oftentimes they may be included in the family lawn. Here should be the showy flowering plants.

It is best to confine foliage beds, or highly colored flowers to this garden to avoid patches of color on the lawn, which attract attention from the lawn itself, the trees, or general appearance of the home. In the flower garden one expects these showy plants and here they are not out of place. Both gardens should be somewhat shut off from the public way to exclude animals and the small boy looking for fruit. Of necessity, the working portion, or back yard, should be in the rear. This includes the laundry yard near the kitchen or laundry, and the storage yard near the cellar, or if for tools near the garden. Usually a hedge or some shubbery is needed to divide the back yard from the front or lawn portions.

While this applies mostly to small grounds in the village or city, much of it is applicable to the home grounds on the farm. in the country wish to see all there is going on, and rightly too, Here of course no seclusion is necessary. In fact, most people for their life is at best an isolated one. Therefore no family lawn or outdoor parlor if you so choose to call it, is needed. A level lawn or meadow in front of the house with barn and outbuildings at the back or side as much out of sight as possible, is the simplest arrangement. The planting should be low around the house so as not to obstruct the view, and trees on the lawn and road for shade. Then the barn and sheds may be screened from view by belts of trees or shrubs. These will also serve for windbreaks and shelter from storms. One advantage the farmer has over his city cousin, is the short distance to places where desirable plants are plenty.

When the grounds have been subdivided properly, then the details of planting may be worked out. Please understand that while it is cheaper to carry it out all at once, oftentimes it may be done from year to year as means will allow. Interest in the work is thus kept up and one is stimulated to further efforts. The same general scheme should be followed from year to year to its accomplishment. In locating plantations, each one should have its special use. To shut out objectionable views, to divide the front and back yards, to soften the harsh stiff lines of the house, to give seclusion to the home, these are some of their uses. Place no trees, shrubs, or vines without an object in view. A

lawn dotted with plants, aimlessly placed, loses half its value and its broad expanse of green turf. Panting at the base and sides of the house is usually all that is necessary on the lawn. The importance of planting against the base of buildings, or along blank walls to relieve the bare effect, is often overlooked.

In making plantations, the ground should be thoroughly prepared as for a garden or orchard. When spaded up, well pulverized and enriched by fertilizer, it is ready for the plants. Shrubs do not grow well in sod. The plants should be placed in masses, so that, at their full size and maturity, the tops will just touch. Weeds are thus shaded out and cultivation is unnecessary. The beds are usually irregular in outline. As some kinds are more broad spreading than others, the edge next to the lawn must of necessity be irregular. The effect obtained from a mass of planting is more apparent than of single specimens. In the natural landscape, the foliage is in broad masses, and the plants in generous numbers to give this effect. This is what the landscape gardener strives to obtain. Nature never makes a straight formal hedgerow. But sometimes a straight regular hedge has its uses as well. When used, the more regular and even it is the better it looks. The proper distance apart depends on the kind used and size at maturity. A continuous line of foliage is desirable. When an immediate effect is wanted, the shrubs may be planted closer, and then thinned out as necessary.

The care of these beds after planting is simple. The weeds kept down until shaded out, the surface mulched with leaves or light covering, the edges cut to keep the grass from spreading, this is all necessary. When a shrub outgrows its place, do not cut it back, but remove it and substitute a smaller kind. Even if no care is taken after planting, hardy shrubs will care for themselves more or less. But it should be remembered that the results will be slower. The same holds true in regard to the soil. The conditions should be as nearly like those of their natural location as possible.

The kinds used depend on conditions, desirability and reason for use. It is better to use a large number of a good kind, rather than a few of many kinds, in order to obtain wholesale rates. At first, few varieties should be used, then other kinds

put in from year to year for variety. A study of the descriptive catalogues of the standard nurseries, and books by standard horticultural authors will tell what is desirable. Then if the means of the owner will permit, the use of nursery stock is advisable. But if one cannot afford the more expensive nursery stock, then the hardier natives can be used. And oftentimes they are more desirable than the ornamentals obtainable. In using wild plants, their natural conditions should be studied and followed as closely as possible. The plants of the wood are often improved by cultivation as the fruits and berries of the garden have been.

When a place is to be improved by planting, the vegetation growing on it should be noted and left untouched for a time. After careful observation, the undesirable ones can be taken out and others added. Many beautiful trees and shrubs are removed by the grader in obtaining a level surface. I heard of a case once, where the owner "brushed," as he called it, a beautiful little valley full of native plants, then called in a andscape gardener for advice to improve it, and was much surprised to find that he advised the use of the very same kinds that the owner had so industriously grubbed out. By all means, have your beautiful and rare plants from other lands, but don't overlook those near at home, and thereby destroy the natural beauties of your place. There's a happy medium between a wild tangle of brush and weeds and a nursery collection of rare and often tender plants.

In collecting natives, a good sized rootball should be dug with as many roots as possible. Care ought to be taken to prevent drying. Planting is done as soon as possible or the roots covered with soil until convenient. They should be moved when not in growth. Those standing in the open, give the best results. Unless conditions are unusually favorable, full grown specimens should not be moved.

Oftentimes annuals can be used to give variety, where the beds are broader and more open. Even then the ones able to stand shade only should be used. These may be grown year by year from seed in hotbeds or frames and transplanted.

While most of this paper treats of planning new grounds, it will apply as well to those already established. Plants already on the ground may be used. Transplanting, dividing, and

separating, will often increase the stock in hand. The lawn is leveled and seed thrown in or the old sod renewed by fertilizer and cutting. Many people do not realize how much cutting will do to grass. A case of this kind once came to my notice, where a summer cottage was built on an old rough run-out pasture, and by nothing, but cutting, the owner obtained as fine and even lawn as there was in the vicinity. The shrubs should be taken off the lawn, grouped and other plantations put in, where needed. Unless the trees are too thick, or crooked, they should be left alone. It is best to go slowly about cutting down a tree and then only with the best of reasons. Oftentimes the work of forty years is undone in half an hour.

In regard to the cost of plants, the standard horticultural papers should be consulted. Collected plants can be obtained for about five dollars a hundred from those who do collecting as a business. Nursery plants cost about twelve dollars a hundred, that is the ordinary nursery stock. Nursery agents usually charge more than the company, for their prices include commission. However, plants from a nursery are usually better rooted, more symmetrical and hardier. If large quantities are used, then better rates may be obtained. Of course, if the owner does his own collecting then the cost of teaming and labor is all. At the same time, the plants collected by him will be much larger than those bought of plant collectors who are in this business. One has the pleasure then of seeing the results of his own work.

If one sees his neighbor improving his place, then one is, or ought to be, ashamed of his own cluttered back yard, and straightway clean it. Then if the neighbor succeeds with his plants and improvements, then he himself feels more inclined to do something about his own place. Thus, whole neighborhoods may be improved and values thereby much increased. In "union there is strength," in numbers at least. So while one place improved means much, a neighborhood improved means more. We are all glad to see that the ladies of Wausau have organized a village improvement society and we all sincerely trust that it succeeds as it deserves. As order is Nature's first law, keeping everything neat and clean is the first step ahead. They have already taken that step and let us hope that they will

include the beautifying of each and every home place and thereby every neighborhood. As the ladies see more of the home, it is only fair that they should have it beautiful to look upon. Therefore if they are interested in making it beautiful, it will be. Their influence in the making of the home is far reaching. So in the next ten years we expect to see Wausau one of the most beautiful cities in Wisconsin.

The National Cash Register Co., of Dayton, O., has been very successful in a movement of this kind. They have reformed the entire side of the city, where their factory is located, from a city tenement district to a neigborhood of pretty little homes, and needless to say, a liberal use of plants has contributed a great deal to it. A similar movement has been started in the city of Menomonie of this state by Sen. Stout of the Knapp, Stout Lumber Co. Advice is given each property owner as to improvements in any way possible. Then materials can be procured in wholesale quantities, so lower prices are obtained. The citizens have shown a commendable interest and many have taken advantage of the offer in one way or another. Here it is hoped that example will do much and another season many more will co-operate. But where the citizens themselves start a movement of this kind, it means much more. For this reason, I look for great results in this city of Wausau, already so beautiful.

The value of improving home grounds is in many directions. It inspires a love for the beautiful in Nature. Neatness and order are taught the children. It leads one to be more out of doors and to do more outdoor work. It makes a knowledge of horticulture and gardening more popular and widespread. Pride in the appearance of the home is more noticeable. And one may be sure if the home and its grounds are neatly kept, there one will find a love for it, a pride in it, and its influence on its inmates, of value not to be estimated. And as home means so much to every one, then it makes life easier and more worth living.

The President—As you undoubtedly all have noticed, our program is not complete. It needs the influence of trees and flowers to make it complete. That we do not have this is no one's fault. Miss Borrow was taken sick this morning, and the doctors told her that she must not present the paper tonight, but we hope to have it printed in the proceedings of our society.

Mr. Kreutzer here made the announcement that carriages would be in waiting at the Bellis House at 10 the next morning to convey the visiting members out to the trial orchard.

Adjourned.

WHAT HORTICULTURE CAN DO FOR NORTHERN WISCONSIN.

T. E. Loope, Eureka.

Northern Wisconsin has always been under a ban horticulturally, and even now most horticulturists very gravely doubt any material success in that line. To be sure small fruits are grown successfully in many parts and a few favored localities have succeeded with orchards. To the average man who has bought and planted trees the outcome has not generally been satisfactory. The reasons for this state of affairs are numerous. The rigorous climate greatly limits horticultural possibilities. The introduction of varieties, hardy in the east, but lacking sufficient vitality for our climate, has been a great factor in the failures. Poor judgment in selection of varieties and the glib tongue of the tree agent who often misrepresents to the unsophisticated buyer for the purpose of swelling his sales and reaping the benefit therefrom, is responsible for much of the trouble. The gorgeous colored plate book catches the eye of the purchaser and he buys because the picture is ruddy and large.

We have learned some of the limitations to success. We have found that some varieties root kill, some are liable to blight, some are shy bearers, while others bear profusely and die early. Then the question of favorable situation and soil has not been fully understood by the mass of those who tried to raise fruit. To most people the only thing necessary to be done was to buy and set out the trees and let nature do the rest, basing their greatest hope on Providence, not realizing that unless in line with intelligence and effort Providence works disaster oftentimes. Northern Wisconsin has such a multitude of failures charged against her and so few successes to her credit, that were it not for unlimited and buoyant principle not yet properly named but sometimes called Hope, tempered with faith but more than them both, we would have thrown up the sponge long ago.

As it is we accept defeat with the greatest equanimity and

marshal our demoralized and scattered forces and with bands playing the Dead March and drums muffled — with banners tattered and begrimed — with halting step, move up with broken front against the dastard enemy flushed with victory expecting them to turn and fly for their lives. Such is the undaunted courage of the horticulturist, and such supreme gall deserves a better fate. We cherish another probable illusion. This is that some future horticultural historian will point out our heroic endeavors and dilate on the impetus we have given towards accomplishing the brilliant results that will come at last. Will it come, you ask? No thoroughbred horticulturist asks that question — they know it will come.

With the state society and its many intelligent persistent workers rests the solution of the problem of ultimate horticultural success in Wisconsin, and especially the northern portion of the state whose possibilities are largely unknown but where effort may achieve success. It is their province to invade its untried domain and illumine all its broad expanse of territory with the light of experimental knowledge. This line of work must be exact and comprehensive. The climate, conditions of soil, location and adaptability must be carefully considered. Selection of tried varieties without regard to pre-conceived notions must follow and workers of good horse sense and correct habits of observation be brought into our ranks from all sections and given to the public in no uncertain terms.

The state society should stand for the whole state, and not for sections and with the increase of responsibility and labor we should have auxiliary societies in each section all working under the parent society and bringing in results each year to make a grand whole. The combined knowledge would make you a power for good in the state, and the increasing interest and membership will operate to give you increased appropriations to carry forward the beneficient work, and the people of the state who partake of the fruits of your investigations will rise up and call you blessed.

What can horticulture do for northern Wisconsin? It is a hard question to the average man, but to the horticulturist who can see rain in every little cloud when he needs rain, or sunny

weather above the "low hung clouds that drop their garnered fullness down," when he wants fair weather it is a dead easy question. Horticulture can give you strawberries larger than G. J. Kellogg's or M. V. Sperback's and infinitely more luscious because you grow them. It can grow good apples "out of sight" of Baldwin, Spy or Seeknofurther. It can give you all fruits in season. It can beautify your homes and make your lawns and parks a dream of the Garden of Eden. It will cause you to make daily pilgrimages among your shrubs and flowers that will help to drive away the worry and carking cares of the outside world, and it will elevate and inspire your inner self, and lift your soul above to the contemplation of the great creative power that gives such beautiful and beneficent gifts. It will make the children exclaim with pleasure at sight and taste, and that pays for all.

MISSION OF TRIAL ORCHARDS, WHAT THEY TEACH AND WHO ARE BENEFITED BY THEM.

A. J. Philips, West Salem, Wis.

This has been quite a study of mine and during that part of my life that has been devoted to orcharding I have many times wished I had been favored with a chance to visit a good well conducted trial orchard before I embarked in the business. It would have saved me money and time. Trial orchards are known by different names, at Madison as Experiment Station, the same at St. Anthony Park, at Owatonna as the Minnesota Tree Station, at Ithaca and Weyauwega as Trial Acres. All private orchards are trial orchards to the extent that they are planted and managed I mean particularly, in the north all experiments are really trials.

Their mission is to benefit those in whose interest they are conducted. If paid for by the state then the tax payers of the commonwealth should be benefited. If paid for by individuals then they should be benefited, and the benefits in both cases will

be in proportion to the number who visit those orchards, or who read and heed the reports of the work being done and the results being reached in them; now for a trial orchard to be beneficial, several things must be observed. First, the work of making trials must be done for a specified purpose and by a person competent to do the work. Second, a competent person should be in charge to explain the work to those who come to make inquiries, and as this number is necessarily small there should be regular detailed reports made several times in each year. This gives our Experiment Stations or the Minnesota Tree Station an advantage, as a competent person is always on hand to give information at those places. The reports I have mentioned should be published in a paper in the state having a wide circulation among farmers. Even then but few will ever know much about them. One would think when looking over Prof. Goff's class in horticulture in the winter that young men interested in horticulture and trial orchards are plenty, but such is not the case. They are scattered over too wide an area and many of them make a specialty of some other branch.

As a rule, horticulturists do not visit trial orchards both public and private enough, we know too little of what other public benefactors are doing. I was impressed forcibly with this when looking over the late S. I. Freeborn and Peter M. Gideon's work, after they had departed. Many valuable trials and much valuable work for improvement in horticulture stopped right there for want of a person familiar with it to carry it on.

No one can form an idea of the vast amount of valuable work that Mr. C. G. Patten of Iowa is doing unless they visit and inspect his premises, there is no cessation in this work of trial orchards, it is continuous, there are so many changes in soil and climate. After so many years of painstaking work that Uncle Dartt has done for his state I asked him last fall if he had produced anything that for an all around apple and tree was ahead of the Wealthy, he could not name one. I asked for the most promising new apple and tree, he said Phoenix No. 50, named for our veteran who has given his life in the labor of trial orchards. This of course aroused my curiosity and I secured cions for a trial at home and as is unusual I made one hundred root

grafts besides top working it some, though he pronounced it good I must give it a trial on my grounds and it should be tried at Wausau.

I find one of the main failures of trial orchards accomplishing their intended missions is the fact that tree planters do not put themselves in touch with them and try and learn what to plant, but give their order to the first smoothed tongued agent that calls on them, and then say you can not grow apples here. It makes one discouraged.

Last fall I heard of a man five miles from my trial orchard who was going to plant 500 trees, I called on him, found him elated over some very fine N. W. Greening and Wisconsin Russett apples he had in his cellar, they were beautiful in February, I told him something about varieties and also told him that Wisconsin Russett trees were scarce as they had not been propagated much. I gave him the name of one man who I thought could furnish them. But he paid but little attention to the varieties I had found profitable but before spring bought from an agent of a southern nursery his quota of trees at fifteen dollars per hundred, and th eman who helped set them said he was satisfied from their appearance that they came from several different nurseries, now the mission of no trial orchard can reach a man. In his five hundred trees he has not a single Wealthy. In conclusion I will say a few words about our Wisconsin trial orchard here. I proposed this meeting in the thrifty city of Wausau, so that our members might see what had been done and perhaps get some new ideas themselves. I had hoped that Mr. Single, being young, would learn the business so he could care for it and soon be able to impart instruction and information to others, but a change of ownership took him away. The new owner, Mr. Kreutzer, is very much interested in the orchard and while he can not afford to leave a lucrative law practice to care for it and give visitors information why and how certain things are being done, still I had hopes if he kept the farm that he might employ one of the short course graduates to care for and manage it and report results for the public. He could superintend the farm at the same time, and if the right man he could benefit himself and be a blessing to the northern part of Wiscon-

sin. Our trial orchard committee are good and competent men, but each have other duties that employ their time and at best can only make it a flying visit.

Our secretary though well trained in small fruit culture is new at the business of orchard experiments and is employed at other business. The plan I have suggested to carry out the mission of this orchard will cost something, but to accomplish its mission for the state and secure state aid it must be made of value and to get a man who has made himself competent under successful teachers or educated himself at home he is entitled to liberal pay. Why, suitable reports of this work are valuable and the public are willing to pay for them. I do hope a policy will be enacted that will accomplish the mission of this orchard in a way that those who proposed, selected, planted and have so far cared for it will in after years be proud of it and that Mr. Kreutzer will be so gratified that he has secured a farm with so valuable an appendage that he will refuse to sell it and keep it for his children and grand-children to gather fruit from.