Annual reports of the Dairy and Food Commissioner of Wisconsin. For the years ending June 30, 1921 and 1922, respectively.

State Dairy and Food Commissioner
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ANNUAL REPORTS

OF THE

Dairy and Food Commissioner

OF WISCONSIN

For the Years Ending June 30, 1921 and 1922, Respectively

J. Q. EMERY,
Dairy and Food Commissioner
Ex Officio
State Superintendent of Weights and Measures

Madison, Wisconsin

DAIRY AND FOOD COMMISSIONERS OF WISCONSIN

H. C. Thom.....May 29, 1889, to May 28, 1891

D. L. Harkness.....May 28, 1891, to June 11, 1894

Thomas Luchsinger.....June 27, 1894, to Feb. 7, 1895

H. C. Adams.....Feb. 7, 1895, to May 1, 1902

J. Q. Emery.....Dec. 24, 1902, to Feb. 10, 1915

Geo. J. Weigle.....Feb. 10, 1915, to Feb. 8, 1921

J. Q. Emery.....Feb. 8, 1921, to.....

ORGANIZATION OF THE COMMISSION

1920-1921

J. Q. EMERY, Dairy and Food Commissioner, *ex officio* State Superintendent of Weights and Measures (from February 8, 1921).
G. J. WEIGLE, Dairy and Food Commissioner, *ex officio* State Superintendent of Weights and Measures (to February 8, 1921).
HARRY KLUETER, Ph.G., Assistant Dairy and Food Commissioner and Chief Chemist.
RICHARD FISCHER, Ph. D., Consulting Director of Laboratory.
RALPH W. SMITH, Chief Inspector of Weights and Measures (to August 31, 1920).
GEORGE WARNER, Chief Inspector of Weights and Measures (from September 1, 1920).
M. L. WALTER, Secretary to Commissioner.
WILLIAM WINDER, Chief Cheese Division.
H. C. LARSON, Chief Butter Division (to July 3, 1920).
J. E. BOETTCHER, Chief Butter Division (from March 1, 1921).
HELEN O'CONNELL, Stenographer.
VERA HODGIN, Stenographer.
LOUENA FINDORFF, Clerk.
JOSEPHINE BECK, Clerk.
JEANETTE RICE, Clerk (from November 8, 1920).
MINERVA NORMAN, Stenographer (to November 20, 1920).
DELMA CORCORAN, Stenographer (from December 14, 1920).
RUTH FESSLER, Clerk (January 24, 1921-February 6, 1921).
IDA M. OLSON, Clerk (September 27-October 31, 1920).
I. R. HOWLETT, M.A., Assistant Chemist.
I. W. KEEBLER, B.S., Assistant Chemist (from February 7, 1921).
C. A. KROHN, Assistant Chemist (to January 31, 1921).
MARGARET I. MELAAS, M.A., Assistant Chemist.

C. J. KREMER,
W. A. VOIGT,
H. G. TOWN,
J. M. KELLIHER,
G. A. SERVIS (to August 30, 1921),
E. W. CRIPPEN,
Food Inspectors.

S. B. COOK,
R. R. CROSBY,
F. S. HANSON,
JACOB LEHNHERR,
AXEL MADSEN (to December 31, 1920),
M. T. SHERWOOD,
G. H. STUEBER,
W. A. STEWART,
L. R. STEWART,
R. B. SOUTHARD (from April 11, 1921),
JAMES VAN DUSER,
Dairy and Food Inspectors, *ex officio* Sealers of Weights and Measures.

J. E. Boettcher (to March 1, 1921),
Chauncey Beckwith,
H. L. Bornheimer (to October 16, 1920),
George D. Gilman,
R. M. Hadley (from May 11, 1921),
S. M. Peebles (from November 22, 1920),
F. E. Tappins (from July 7, 1920),
A. T. Thompson (from January 10, 1921),
W. M. Van Lone,
George Warner (to August 31, 1920),
Gordon Winder (from September 12, 1920),
Sealers of Weights and Measures.

ORGANIZATION OF THE COMMISSION

1921-1922

J. Q. Emery, Dairy and Food Commissioner, *Ex officio* State Superindent of Weights and Measures.
Harry Klueter, Ph.G., Assistant Dairy and Food Commissioner and Chief Chemist.
Richard Fischer, Ph.D., Consulting Director of Laboratory.
William Winder, Second Assistant Dairy and Food Commissioner (from August 1, 1921).
William Winder, Chief Cheese Division (to August 1, 1921).
George Warner, Chief Inspector of Weights and Measures.
M. L. Walter, Secretary to Commissioner.
J. E. Boettcher, Chief Butter Division.
Helen O'Connell, Stenographer.
Vera Hodgin, Stenographer.
Louena Findorff, Clerk.
Josephine Beck, Stenographer.
Jeanette Rice, Clerk.
Delma Corcoran, Stenographer (to September 8, 1921).
Margaret E. Cummings, Clerk (from December 1, 1921).
Alice Meidell, Stenographer (September 12-October 24, 1921).
Genevieve Milward, Stenographer (from November 21, 1921).
I. R. Howlett, M.A., Assistant Chemist.
I. W. Keebler, B.S., Assistant Chemist.
Margaret I. Melaas, M.A., Assistant Chemist (to August 15, 1921).
Henry Schuette, Ph.D., Assistant Chemist (August 17-September 17, 1921).
Hilda Wiese, M.S., Assistant Chemist (from November 14, 1921).

C. J. Kremer, Senior Food Inspector,
H. G. Town,
E. W. Crippen (to April 30, 1922),
J. M. Kelliher,
*W. A. Voigt (to February 11, 1922),
Food Inspectors.

Geo. E. Campbell (from December 12, 1921),
S. B. Cook,
R. R. Crosby,
F. S. Hanson (to September 1, 1921),
Jacob Lehnherr,
R. L. Radke (from December 12, 1921),
M. T. Sherwood (to October 15, 1921),
G. H. Stueber,
W. A. Stewart,
L. R. Stewart,
R. B. Southard,
James Van Duser,
A. R. Valleskey (from March 28, 1922),
Jos. J. Wetak (from January 1, 1922),
Dairy and Food Inspectors, *ex officio* Sealers of Weights and Measures.

C. B. ATWOOD (from September 15, 1921),
CHAUNCEY BECKWITH,
GEORGE D. GILMAN,
R. M. HADLEY,
S. M. PEEBLES (to December 31, 1921),
F. E. TAPPINS,
A. T. THOMPSON,
W. M. VAN LONE,
GORDON WINDER (to September 1, 1921, June 26-30, 1922),
Sealers of Weights and Measures.

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*Deceased.

LETTER OF TRANSMITTAL

His Excellency, John J. Blaine,

Governor of Wisconsin.

Sir:—Pursuant to the provisions of law, I have the honor herewith to submit the annual reports of the dairy and food commissioner for the years ending June 30, 1921 and 1922, respectively.

J. Q. Emery,

Dairy and Food Commissioner,

Ex Officio State Superintendent

of Weights and Measures.

REPORT OF COMMISSIONER

Scope of the Work

The office of Dairy and Food Commissioner was established by the Legislature of 1889, for the avowed purpose of furnishing the necessary power and means for suppressing the fraudulent manufacture and sale of imitation butter and cheese as well as the sale of adulterated, impure or diluted milk and the widespread and rapidly increasing adulteration of the food of the people, conditions then declared to exist and calling for correction.

Expansion

Expansion of these functions of the Dairy and Food Department has since been made at nearly every session of the Legislature. In 1911, the Dairy and Food Commissioner was made ex-officio state superintendent of weights and measures and was charged with the supervision throughout the state of the enforcement of the new vigorous weights and measures law enacted in 1911. This law vastly increased the official work of the Dairy and Food Commissioner. Among the other expansions of the original functions of the Dairy and Food Commissioner are the general law relating to adulterated drugs and foods, including drinks; the general law relating to the misbranding of foods; laws relating to the gathering and compiling of dairy statistics and promotive of the welfare of the dairy industry; laws relating to the false manipulation of the Babcock test and to unfair discrimination in the purchase of dairy products; pasteurization of by-products of creameries and cheese factories; the licensing of butter makers and cheese makers; the licensing and inspection of cheese factories, butter factories, condenseries, receiving stations, canning factories, bakeries, confectioneries, cold storage warehouses, bottling plants; laws calling for the sanitary inspection of the places where dairy and food products are manufactured for sale or sold; enforcing the special laws relating to trading stamps, linseed oil, white lead, zinc oxide and turpentine, and the sale of cold storage goods.

Wisconsin the Leading Dairy State

That Wisconsin is the leading dairy state in the Union is evidenced by the following: Wisconsin ranks first among the states of the Union in the volume of milk produced, which is 10 per cent of the total produced in the United States. Wisconsin ranks first in the total production of cheese of all kinds. Approximately two-thirds of all the cheese produced in the United States is made in Wisconsin. Wisconsin ranks first in the production of American cheese, which is

approximately three-fourths of all produced in the United States. Wisconsin ranks first in the production of Swiss, brick and Muenster cheese, and second in the production of Limburger cheese.

Wisconsin ranks second as a butter producing state, producing 11 per cent of all the creamery butter produced in the United States.

Wisconsin ranks first in the production of condensery products, producing upwards of one-fourth of the total production in the United States.

Wisconsin ranks eighth in the production of ice cream.

For the year ending June 30, 1922, Wisconsin had 2,807 licensed cheese factories, 667 licensed butter factories, 72 licensed condenseries, 675 licensed receiving stations and approximately 185,000 dairy farms.

The total value of dairy products of Wisconsin for the year ending Dec. 31, 1921, based chiefly on reports to the Dairy and Food Commissioner by manufacturers and producers and partially on conservative estimates, was $200,828,249.92.

There were 298,732,969 pounds of cheese produced in factories, other than cottage, skim milk, primost, cooked, buttermilk and cream cheese valued at $53,007,048.06. There were 4,495,963 pounds of cottage, skim milk, primost, cooked, buttermilk and cream cheese produced, valued at $214,886.10; and 308,117 pounds of cheese produced on farms, valued at $98,599.

There were 138,693,322 pounds of butter produced in factories, valued at $57,001,852.05 and 8,666,037 pounds of farm made butter valued at $4,733,556.

Upon the generally accepted theory that quality in commercial butter determines its price, the quality of Wisconsin butter outranks that of all of the states bordering on Wisconsin and the average of the entire United States as shown by the records of the Year Book of the United States Department of Agriculture. Each of the published Year Books of the United States Department of Agriculture, for the years 1910–1920, inclusive, reports Wisconsin farmers as having received at the beginning of each month of each of those years, in nearly all instances, a higher price per pound for butter than was received by the farmers of any of the states bordering on Wisconsin, and higher than the average price received by the farmers of the United States.

There were 423,100,003 pounds of condensery products consisting of evaporated, condensed, powdered, concentrated milk and evaporated cream, valued at $34,367,837.26; and 25,929,094 pounds of evaporated, concentrated, powdered and condensed skim milk and compounds, valued at $982,502.14.

The value of milk used in the manufacture of malted milk, etc., is valued at $580,967.38.

There were 5,950,556 gallons of ice cream produced, valued at $6,166,325.64.

It is estimated there were 960,621,235 pints of milk produced, used for family consumption, other than that furnished cheese factories,

butter factories, condenseries and ice cream plants, valued at $28,818,637.05.

Skim milk was produced to the estimated amount of 2,550,955,989 pounds, valued at $7,142,676.77; and whey to the estimated amount of 2,567,407,785 pounds, valued at $3,594,370.48.

The estimated amount and value of milk and cream shipped to St. Paul, Chicago, Minneapolis, Dubuque and other points outside of Wisconsin is 250,394,650 pounds, valued at $4,118,991.99.

Inspectors

Inspectors are the agents or personal representatives of the Dairy and Food Commissioner in the field. They deal directly with dealers, manufacturers and the public. They are often called on to give information and advice which they must be prepared to give in all reasonable cases. They must be capable, tactful, conscientious, industrious and courageous in the performance of their duties. They are frequently called upon to give testimony in court to sustain prosecutions for violations of law.

Dairy, Creamery and Cheese Factory Inspectors and Their Activities

The dairy, creamery and cheese factory inspectors must necessarily be skilled and experienced in the technical work of butter making and cheese making and in other phases of the dairy business. These inspectors, twelve in number, during the year ending June 30, 1922, made 3,269 inspections of cheese factories, 2,200 inspections of butter factories, 56 inspections of condenseries, 561 inspections of receiving stations, 170 inspections of city and village milk supplies, 1,337 inspections of farm dairies, and in addition responded to numerous calls for inspection and instruction relative to a great variety of subjects of which there is no formal record. Cheese factory, creamery and condensery inspections include, where necessary, inspections of milk or cream offered, cans in which the same is delivered, and investigation of any suspected unlawful practices. In these inspections, suggestive instruction is given, when needed, on the various phases of the dairy industry. This instruction is not given in a mere formal, perfunctory manner but is given in an informal, personal way when and where the conditions are found to exist that furnish a concrete need and basis for such instruction. Compliance with law and improvement of conditions are the objects sought by inspection. When suggestive instruction fails to secure compliance with the requirements of law, prosecution necessarily follows. A carefully prepared printed pamphlet, putting into preservable and usable form suggestive instruction of the kind above mentioned, is prepared and furnished by the department. It is conservative to state that many thousands upon thousands of dollars have been added to the annual income of the dairy farmers of the state by this unremitting expert service rendered from day to day for the past two

decades or more. Nor is it too much to assert that the present exalted position of Wisconsin as a dairy state is due in a very large degree to this educational work, together with the law enforcement through prosecution.

Laboratory

Properly to administer the various dairy, food and drug laws, chemical work and knowledge are fundamentally necessary. The enforcement of police powers regulating the manufacture and sale of the foods and drugs of the people of the state is an important matter having to do with public health and public welfare.

To determine whether dairy, food and drug laws have been violated, numerous samples of these commodities are collected and carefully analyzed each year. Prosecutions for violations of dairy, food and drug laws are based on these analyses; hence the necessity for careful, painstaking and accurate analytical work.

That this may be accomplished, there is maintained a well equipped laboratory at the chemistry building at the University of Wisconsin. There are employed in the laboratory well trained and skilled analytical chemists. The varieties or classes of foods have been rapidly increasing. Food interests and manufacturers have extended their activities. New products are being developed and placed on the markets. Imitations and substitutes are continually appearing, some of which are fraudulent and detrimental to public health and public welfare.

With the development of the food interests of the nation, there has been established and maintained extensive laboratories so to regulate and control their products as to make difficult the detection of fraudulent substitutions in many cases. The duties of the food control chemists have become more exacting and difficult from year to year. To illustrate, when food laws were first enacted, methods of adulteration were so crude that detection was simple. A chemist might easily analyze and pronounce twelve samples of vinegar sold as cider vinegar, adulterated, while today, due to skillful methods of adulteration, a chemist may well work a week on a single sample before it is possible to arrive at a definite conclusion as to its purity.

There were collected and submitted to the laboratory for analysis during the year ending June 30, 1922, 1,429 samples suspected of being adulterated. These samples consist of the various dairy products, foods, drugs, linseed oils, turpentines, white lead and zinc white.

That analytical work done on the samples will be competent evidence in case of prosecution, samples submitted by dairy and food inspectors to the laboratory are submitted under seal. After the analytical work is completed, the results of analysis are carefully considered to determine whether the manufacture or sale of the article of food analyzed was a violation of law. This calls for an accurate interpretation of the results of analysis, a knowledge of the law and

in addition, it is necessary that all of the evidence to be presented in the case of prosecution be carefuly gone over, putting together all the links of evidence thus collected to determine whether the chain of evidence is complete. Great care is necessary in this work for the reason that the laws to be enforced are criminal statutes and no arrests for violations of these statutes must take place without the necessary evidence to sustain a prosecution lest the dairy and food commissioner become liable for false arrests.

The dairy and food inspectors must be kept in close touch with the work of the laboratory, so that they may be informed concerning the legal status of commodities offered for sale on the market. The work of the food inspectors must be and is largely directed in the methods of collecting samples, for it can be readily seen that a good deal of knowledge and judgment is necessary in the purchasing of samples. For a food inspector to buy samples of each and every food he meets in the course of his inspection would simply fill the laboratory with useless samples and pile up and make necessary useless analytical work.

The work of the laboratory is often necessary in the enforcement of the laws relating to the licensing of cold storage warehouses, bottling plants, canning factories, condenseries and butter and cheese factories. Often analytical work is necessary to assist in arriving at a conclusion as to whether sanitary conditions exist or do not exist. To express the annual savings to the purchasing public by this line of work would require a number comprising seven figures.

Food and Drug Inspectors and Their Activities

Food and drug inspections in the field must be carried on by persons especially trained and qualified. They must be capable of understanding and applying the numerous laws in whose administration they participate. They must do educational work in the various phases of their activities, similar to the kind of work done by dairy, creamery and cheese factory inspectors hereinbefore set forth. The work of drug inspections is similar in character to that of food inspection and is done by the same inspectors.

For the year ending June 30, 1922, the five food inspectors, with several vacancies prevailing for a considerable length of time, made 5,847 inspections of meat markets and groceries, 750 inspections of the 953 licensed bakeries, 463 inspections of the 615 licensed confectioneries, 52 inspections of the 44 licensed cold storage warehouses, 174 inspections of the 235 licensed bottling plants, 213 inspections of the 131 licensed canning factories and have obtained numerous samples of foods suspected of being adulterated or misbranded and delivered the same to the chemical laboratory. Enforcement of the law relating to cold storage warehouses has required no inconsiderable portion of the time of food inspectors and the enforcement of the trading stamp law has required a still larger portion of the time of food inspectors and weights and measures inspectors. Much of the

time of the food inspectors has also been required for the inspection of special foods coming upon the market suspected of being adulterated or misbranded.

Canning factory inspection is very intensive. Especially is this true of the pea canning factory inspection. The many hundreds of thousands of dollars worth of peas are put into cans within a period of about six weeks. An hour's delay in a factory may mean hundreds of dollars of loss; hence the necessity of proper inspection to be sure that conditions in and about the factory are right at the start of the pack and so maintained. Inspection must be frequent for bad conditions may develop over night. The product handled is perishable and of such a nature that if not handled in a clean and sanitary manner will cause intolerable conditions. Inspection has a very beneficial effect on the grower of peas, the farmer, for losses to the factory are reflected in the income of the farmer.

Wisconsin's canning industry has reached gigantic proportions. This is particularly true of the pea canning industry in which Wisconsin ranks first. Wisconsin's fabulous growth in this industry is shown by the following statistics giving the number of cases of canned peas produced in the respective years, namely: 1908, 2,200,000; 1909, 1,878,000; 1910, 1,086,000; 1911, 1,520,000; 1912, 2,658,000; 1913, 3,338,000; 1914, 3,555,000; 1915, 3,469,000; 1916, 2,763,000; 1917, 3,569,185; 1918, 4,519,934; 1919, 4,317,000; 1920, 5,840,000; 1921, 4,063,000; 1922, 7,042,000.

Weights and Measures Department

Very briefly stated, the principal duties of the weights and measures department are to inspect and test all commercial weighing and measuring apparatus in use in the state; to reweigh or remeasure commodities put up for sale or sold.

The work required of an inspector or sealer of weights and measures comprises two kinds of classes, namely, light inspection and heavy inspection. The light inspection work consists in inspecting and testing scales having a weighing range from 1-10 grain to about 100 pounds capacity. These scales are found in drug stores, jewelry stores, groceries, meat markets, etc. This work also includes the inspection and testing of measures of various kinds, such as linear, used in dry goods stores, liquid, used in various establishments, and measuring pumps. For the reason, in part, that this work can be done during the inclement weather of December, January, February, March and April, when it is impracticable for much of the heavy inspection work to be done, the months above specified are chosen for the doing of this light inspection work. The heavy inspection work consists in inspecting and testing large capacity scales varying from 500 pounds to 15 tons capacity. This type of scales is found in stock yards, in coal yards, for public weighing, in elevators and other similar places. The testing of gasoline pumps is done in connection with this line of work, as it is necessary for efficient testing of these pumps to

use field standards of one and five gallon capacity, respectively, and the truck used for heavy inspection work furnishes the only practicable means of transporting these standard measures. The state has four trucks in use to carry apparatus weighing about 1,100 pounds, necessary for testing wagon, hopper and other large capacity scales.

It has been demonstrated beyond peradventure that by devoting the five months hereinbefore mentioned to light inspection work, when each inspector works alone in his own territory, and the seven remaining months of the year, when roads and weather are at their best, during the summer and fall, to heavy weight and gasoline pump inspection work, two men necessarily working together, because much of the heavy weight inspection requires two men, the work is made much more practical, effective and economical than would be the result if it were attempted to have one man do all kinds of work at all times of the year.

Apparently there is the misapprehension on the part of some people, that there are special sealers for each class of apparatus. If such people will familiarize themselves with the work of the weights and measures department, such misapprehension will be quickly dispelled. The sealers are all men capable of testing all kinds of apparatus required by law and actually do the testing of all kinds.

The gasoline measuring pumps in use in the state measured upwards of 75,000,000 gallons of gasoline last year, which cost the consumers about twenty-two millions of dollars. Sealers of weights and measures tested approximately 6,800 of these pumps and found 2,077 of them incorrect, most of them giving short measure. The inspectors corrected this short measure to a large extent by adjusting 1,073 of these incorrect pumps, condemning for repairs 920, and condemning outright 84. Estimating the correction at an average of four cubic inches on a gallon, 1,300,000 gallons of gasoline, worth $325,000, were saved to the consumers.

The importance of try-out work is apparent when consideration is given to the vast number of packages sold annually. During the past year 104,000,000 quart bottles were used for the sale of milk and 35,500,000 half pint bottles were used for the sale of cream. Upwards of 34,000,000 pounds of print butter were consumed in the state last year. The first years of inspection work in 1911 and 1912 disclosed the fact that quart milk bottles in use were often from 1 to 9 drams short and the half pint cream bottles were from 1¼ to 2 drams short. The so-called 1-pound prints of butter were from 1 to 2 ounces short. An average shortage of only 4 drams on a quart bottle of milk at 10 cents per quart represents a money value of $162,550. An average shortage of 1¼ drams on a half pint bottle of cream at 14 cents per half pint represents a money value of $97,187. An average shortage of one ounce on each print of butter at 35 cents per pound represents a money value of $743,750. The state and city weights and measures departments have saved more than the above amounts to the consumers of Wisconsin on the two products named,

because if there had been no inspection, conditions would not have remained stationary, but would have grown steadily worse since 1911 when the department was organized.

The State Department of Weights and Measures has general supervision of all city departments which are required by law to be maintained in all cities of over 5,000 popuation. In addition to this general supervision, the State Department of Weights and Measures is required by law to do all of the testing, inspection and try-out work in all territory outside of cities of over 5,000 population, and to issue regulations and prescribe tolerances for the guidance of all sealers.

Weights and Measures Inspectors and Sealers

The state weights and measures inspectors spend considerable time in working with city inspectors in securing uniform and efficient methods in the work throughout the state, also in assisting new city sealers in the beginning of their work. The standards used by the various cities must be tested by the state superintendent periodically. Violations of the milk bottle law must be reported to the state superintendent of weights and measures and he in turn cooperates with the attorney general in recovering the penalty provided against manufacturers for the manufacture and sale of incorrect milk and cream bottles.

The law makes it a duty of sealers or inspectors of weights and measures to inspect, test, try, and ascertain if they are correct, all weights, scales, beams, measures of every kind, instruments or mechanical devices for measurement, and tools, appliances or accessories connected with any or all such instruments or measurements employed in determining the size, quantity, extent, area, or measurement of commodities, things, produce, articles for distribution or consumption offered or submitted for sale, hire or award; and makes it a misdemeanor to use any weighing or measuring device in the buying or selling of any commodity or thing which had not been sealed by a sealer of weights and measures within one year.

State sealers or inspectors must be conversant with the great variety of scales and weights, or measures and measuring devices, used in factory, mill, and store, and they must be field trained before assigned to the responsibility and technical duties prescribed by law. Many patents have been taken out by manufacturers within the past twenty years on types of scales among which may be enumerated a great variety of computing scales used by grocers and at meat markets, of automatic scales used in weighing flour, grain and coal, of dial attachments to platform scales for rapid weighing in condenseries and in freight and express offices. These scales are a complicated series of levers, springs, spindles, racks and pinions, pendulums, dash-pots, bearings and pivots, a defect in any one of which or in any part of which will cause an error in weighing. To be able to locate errors the sealer or inspector must be familiar

with scale construction. The sealer must also have a knowledge of the durability, tensile strength and hardness of materials used in scale construction. Are the bearings made of cast iron, tempered steel, or chilled iron? Are the levers of sufficient weight or properly trussed to withstand the maximum load placed on the scale? The sealer must be trained in these matters before being assigned to his responsible duties.

Measuring devices are now replacing the quart and gallon measure for kerosene and gasoline, syrups and lubricating oils. Properly to inspect and ascertain defects in such pumps and measuring tanks requires technical knowledge and training. The testing of the delicate balances and weights in jewelry stores, creameries, and drug stores requires men skilled in the use of scales that record milligrams and grains in the place of pounds and tons. The testing of glass graduates in drug stores and of Babcock milk and cream test bottles used in creameries and cheese factories requires skill in the use of minims and cubic centimeters in place of the gill and the gallon. The sealer or inspector of weights and measures, to perform his duties efficiently, must be familiar with both metric and English units of weights and measures; with the mathematical principles in ratio, with the laws of physics underlying levers and springs; have some knowledge of mechanics and a knowledge of the requirements of weights and measures laws.

Since the dairy and food commissioner was made ex officio state superintendent of weights and measures, this department has unearthed more than a hundred different faulty conditions or practices for causing incorrect weighing or measuring and has reduced and is keeping this condition reduced to the lowest practicable minimum.

Merely to make first inspections and tests and to seal the appliances found correct and condemn outright or condemn for repairs the various kinds of weighing or measuring devices used in trade, and not return again for reinspection would fall far short of meeting the requirements of the weights and measures law or of being a corrective of the weights and measures evils. Follow-up or reinspection work is required to determine whether the use of condemned apparatus has been discontinued; to determine whether apparatus condemned for needed repairs has been properly adjusted, and in case it has been so adjusted, to seal the same; to determine whether commodities are being sold in quantity less than represented; and to determine if there are any violations of the law and to cause violators of the law to be prosecuted.

During the year ending June 30, 1922, the state and city sealers tested 201,381 mechanical devices for weighing or measuring. They made try-outs in 18,035 establishments, reweighing and remeasuring and inspecting 91,771 packages or commodities put up for sale or sold.

Court Cases

During the year ending June 30, 1922, there were 260 convictions for law violations.

Executive

As may readily be inferred, the time and energies of the commissioner and of the office force are heavily taxed to give direction to these numerous activities, to conduct the correspondence on the multifarious subjects constantly arising, to grant conferences to numerous manufacturers and venders of food products relative to the legal status of their goods, to give due consideration to the granting or refusing of the thousands of licenses of various kinds as well as to the suspension and revocation of the same, to shape and carry on prosecutions, to defend the validity of law in injunction proceedings and to respond to calls for addresses on many phases of the scope and work of the department, all of which are essential elements in the administration of the dairy, food, drug, weights and measures laws of the state.

The statutes calling forth all these activities are in application of the fundamental principle set forth in Section 9 of the State Constitution, viz:

"Every person is entitled to a certain remedy in the laws, for all injuries or wrongs which he may receive in his person, property, or character; he ought to obtain justice freely, and without being obliged to purchase it, completely and without denial, promptly and without delay, conformably to the laws."

The existence and activities of the dairy, food, drug, weights and measures department is *per se* a powerful force in restraint of the doing of those things which the law forbids and in causing those things to be done which the law requires.

Wisconsin Type of Cheese

It has been stated hereinbefore, that Wisconsin ranks first in the production of cheese of the "American" or Cheddar type, and that Wisconsin produces approximately three-fourths of all the cheese of that type that is produced in the United States.

Production of cheese of the Cheddar type is the outstanding feature of the colossal Wisconsin cheese industry. On this type of cheese, Wisconsin has built up her great cheese industry and her great reputation in the markets of the country. This cheese has been of close texture and of firm, meaty body and of clean flavor, and moderate moisture.

A few years ago, owing to the inroads upon the market of cheese of excessive moisture content, agitation was started for fixing a limit by act of the legislature to the moisture content of cheese. The result was a law, first enacted in 1917, limiting the moisture content of what is "known as" American or Cheddar cheese to 40 per cent. The passage of this law had the effect of calling the attention of the cheese makers of the state to the fact that moisture contributed an important part to the yield of cheese. The result was that many cheese makers who had been producing a cheese with 35

to 36 per cent moisture at once began to manufacture cheese with 40 per cent moisture. The effect therefore of this law and practice was to increase the average moisture content of Wisconsin cheese from what it had theretofore been. The effect of the operation of this law and this practice was to reduce the keeping qualities of Wisconsin cheese. This, accompanied by the slump in the market at the end of the war, brought about the agitation that resulted in an amendment in 1921 to the law limiting the moisture content of what is "known as" American or Cheddar cheese to 38 per cent.

In determining just what should be the legislative policy as to the moisture limit in cheese, it seems to me, that the judgment of men who are experts in the cheese business and who have no ulterior purpose to serve should be followed. This proposition seems to me well-nigh axiomatic. "If the blind lead the blind, both will fall into the ditch."

In a few sections of Wisconsin, the idea is being put forth, that the cheese moisture law should be so amended as not to prevent the manufacture and sale in the state, of cheese of moisture content in excess of that now permitted by law, and certain very limited fields are mentioned as affording a market; but only for a very small percentage of the immense volume of Wisconsin cheese.

It has been the belief and contention of the men who have been leaders in building up the colossal cheese industry of Wisconsin, that a low moisture cheese, firm, meaty and clean flavor is the safe type of cheese for Wisconsin. When properly made by skillful workmen from suitable raw material and fittingly aged, it meets every demand for a cheese of soft silky texture and possesses the highest storage qualities.

Would it be wise at this time, to turn our backs on the practice that has made Wisconsin's cheese industry famous, to about face in our attitude of advocating the production of cheese of highest quality by demanding raw material of the highest attainable quality, to be wrought into cheese by skillful, industrious, and painstaking workmen and advocate instead the production of an inferior product by loading it with water, for as a matter of fact, cheese lacking in the qualities of clean, pure, raw material and skillful workmanship cannot be made excellent by a mere increase of the moisture reading.

In the marketing of cheese, good keeping qualities are fundamentally essential. Especially is this true in the marketing of such a tremendous volume of cheese as is produced each year in Wisconsin.

This is a time to recall the ruinous effect of the practice of substituting foreign fats for butter fat in the manufacture of cheese and the quarter of a century required by the Wisconsin cheese industry to recover from its plunge into that deep sea of folly.

Nearly forty years ago, a Mr. Curtis was imported from New York to teach Sheboygan County cheese makers how to make soft cheese and increase the yield. He was dubbed "Wet Nurse" Curtis and it took a long time to recover from the results of that folly. Let the

Wisconsin cheese industry pause long and consider well before creating the new occupation of "Wet Nurse" for the cheese industry lest the outcome be its own undoing.

Prime Quality Essential

The per capita cheese consumption of the United States is about 3.8 pounds. To increase the use of dairy products considerable effort is being made to advertise the various dairy foods, cheese included, and it is a movement entitled to the most vigorous support; but so far as cheese is concerned, if results are to be obtained by this advertising, it must be backed up by giving the consumer something that will create a desire for more cheese. If 90 per cent of our cheese were equal in quality to that better grade made at present and representing the best ten per cent of the production, there would be no over production because the per capita consumption of cheese would double in a short time.

From the very beginning of the cheese industry, the problem has been to make a better cheese, or at least a larger percentage of the very best. The slogan of the few most interested in the industry and who have sufficient vision to see the possibilities of the future, has ever been, "What can we do to improve and uplift the standard of quality of our cheese?" Great improvement has been made. The passing of the years has left with us improvement in the processes of making. New tests have been invented. In factory machinery and utensils, the improvement has kept pace with other lines of industry.

We have made progress in improving the average quality of cheese, but when the total production in the state is considered and the small amount of really fancy cheese is compared with the large quantity of inferior grades or grades of only mediocre quality, we are forced to refrain from speaking of our progress with any degree of boastfulness; but on the contrary feel that possibly an apology would be more fitting.

Various plans for the betterment of the cheese industry have been worked out and the present time does not find us lacking in ideas and plans, that if put into force, are calculated to revolutionize our cheese industry and in particular accomplish that one thing so necessary and so desirable, *reduce the undergrades to a minimum.* The success of any of these plans depends chiefly upon the desire of those interested in the production of cheese to cooperate to their fullest extent, with the confident faith in the possibilities of the future.

Operators and owners of factories, cheese buyers and others, have at conventions and meetings of various kinds, discussed the advisability of county or district instructors and have gone on record as deciding in favor of such an arrangement. The advantages to be derived from a system of instruction, whereby a practical, skilled, tactful man could work among the organization of factories, spending a day at each factory, once a month, and aid and advise the makers

and patrons in getting a better product would be an ideal arrangement, providing there was cooperation and harmony in the work; but before such a system could succeed and improvements be secured, the desire for such instruction must be real and must prevail among those most directly interested, namely, the dairy farmer and the cheese maker. Members of the dairy and food department when acting as instructors find too little response given to advice offered and even in the case of infringement of dairy laws, where a continuance of the condition would have a contaminating effect upon the product being manufactured, it frequently becomes necessary to resort to court action before law compliance can be secured. Recently, an inspector making an inspection of the patron's milk at a cheese factory, found it necessary to inspect the stable and utensils. A milking machine was found in a very filthy condition. Instruction and advice of the instructor were not heeded for a later inspection showed no improvement. In such cases, law enforcement by court action becomes necessary. This is but one instance of a practice that is too common.

Trouble at a factory to such an extent that the buyers complain about the poor quality of the cheese and in some instances make reduction in price frequently results in a request for an inspector to help locate the trouble. In many instances, the main trouble is with the maker. He fails and neglects to give the necessary time to make the milk into a good cheese. Promises are good the day the instructor or inspector is present and if kept would result in a good article. But a surprise visit the following day by an instructor shows the day's work of the cheese maker ended at 1:00 o'clock. In many instances the impelling desire to get through early is enhanced by the fact that an automobile is standing idle until the maker can end his day's work.

In other instances, the milk being delivered by the patrons is of such a character as to make it extremely difficult to make it into good cheese. An inspection of the milk by an inspector shows very bad conditions at times. Recently an inspector found cans with bad open seams, that were impossible of thorough cleaning and would have a contaminating effect upon the milk and later the cheese. The inspector pointed out the defect in the cans to the patron and told him he should have the broken seams repaired. The sullen rejoinder from the farmer was to the effect that he would not get them fixed for he was not getting anything for his milk. Duty compelled the discard of the roll of instructor and taking up the duty of inspector and the enforcement of the law. This is a typical rather than an unusual instance.

It is conceded that the farmer is receiving a low price for cheese; but it is a blind policy on his part to ignore the advice of his cheese maker and the inspector or instructor. It does not require expert reasoning or supreme vision of the future for the dairy farmer and the cheese maker to realize what the result would be, if each and

every one would at all times do his part *as well as he knows how.* A great deal of effort is being put forth in an attempt to secure a better system of marketing, an effort worthy of those engaged in it; but the one factor absolutely necessary to the successful marketing of cheese is the production of quality goods with a minimum of inferior grades.

When under war time conditions, cheese was selling for thirty cents and above, and demand for cheese was so great that almost anything in the shape of cheese could find ready sale, when farmers' cans were old or rusty or open seamed, altogether unfit for the handling of milk, a general let-alone, free-and-go-easy, let-down-the-bars policy by all concerned in the industry prevailed. There was bolstering up with flimsiest pretexts and excuses, such as the buyers were taking all grades of cheese at the highest market prices, repairing old rusty or open seamed cans was too costly, new cans were too expensive. Lax methods became a habit, all seemingly forgetting that, "As ye sow so shall ye also reap."

The present times demand a prompt, radical and permanent change from such notions and practices. Nearly one and a half million pounds of foreign-made cheese and cheese substitutes recently imported into this country during a single month, sounds the tremendous warning to the farmer patrons of cheese factories to furnish regularly only first class milk in all respects to their cheese factories, and to see to it that conditions are such that this can be regularly done; to all Wisconsin cheese makers to devote themselves early and late, in season and out of season, to the very best of their ability to produce the highest quality of cheese of which they are capable, not forgetting that it is a part of their duty to secure a prime article of milk for manufacture into cheese and to maintain the esprit de corps of their patrons; to the operators of cheese factories that those factories are in such condition at all times that they can be kept clean and sanitary and such that a prime article of cheese can be made therein; to cheese buyers that they owe it to the producers of a prime article of cheese and to the cheese industry of the state to conduct their operations upon the basis of quality so as thereby to encourage and reward the production of cheese of superior quality.

We are struggling to extricate ourselves from the wreckage of war. The greatest need for the accomplishment of this greatly needed achievement is team work on the part of all concerned in the cheese making industry. That industry is entirely worthy of the best efforts of everyone connected with it.

This team work is indispensable to success. The degree of success must be measured by the extent of this team work. If every unit in this enterprise waits to perform its share until every other unit shall have fully performed their part, we shall never have team work. Rather let each group adopt the following as the ideal for its effort: "If any one thing means more to the success of any man

or any institution than any other one thing, it is the habit of performing more service than anyone has a reasonable right to expect or than one is actually compensated for."

Cheese of prime quality deserves a remunerative market and should readily find such a market. The producers of such cheese should on account of its merits be assured that it will demand a higher price on the market than cheese of an inferior grade. Cheese buyers are at times very kind to a cheese maker who has produced an inferior or off-grade cheese, paying for such cheese a higher price than its relative merits call for. I think that the kindness should be manifested toward the cheese maker who has produced a prime article of cheese and who thereby contributes to the welfare and success of the cheese industry rather than to the cheese maker whose product is inferior and is an injury to the cheese industry. One of the greatest needs for the continued success of the Wisconsin cheese industry is that the cheese market will be discriminating in the price paid for cheese of varying quality and by so doing make it profitable in dollars and cents for the cheese maker to produce the highest quality of cheese.

But even though this result cannot be completely attained, it is insufficient reason why the cheese maker or cheese factory operator should put up the excuse that he cannot afford to make cheese of prime quality. The real fact is the cheese maker or cheese factory operator cannot afford to make cheese of inferior quality for the practice of making cheese of inferior quality has the effect both of lessening the demand for cheese and lowering the price.

Clean Milk and Cream, Production and Care

It is deemed no exaggeration to state that the dairymen of Wisconsin, today, are producing the best cream and milk since the beginning of the factory system in the state.

Yet it would be fatal to the future of this great industry, to content ourselves with the progress already made and feel that further improvement is unnecessary. The old Roman maxim is as true today as when uttered centuries ago, "They who do not advance, recede."

If we cease in our efforts to improve, our dairy products will be surpassed in the markets of the world by those of other states and other countries.

The standard of quality of our finished dairy products must not only be maintained, but must be raised to a higher degree of excellence.

Quality in the finished dairy product demands quality in the raw product.

Bacterial Infection

When careful precautions are observed, milk freshly drawn from the cow's udder contains comparatively few, if any, bacteria. The

rate of bacterial growth in milk is dependent entirely upon the manner in which it is drawn from the cow and the care exercised in subsequent handling.

Common Sources of Bacterial Infection

1. Unclean or unhealthy condition of cows;
2. Lack of cleanliness in places where milking is done;
3. Lack of cleanliness in persons milking cows;
4. Use of utensils lacking in cleanliness;
5. Keeping milk in unclean surroundings, and failure to cool to 60 degrees Fahrenheit or lower soon after milking.

When milk comes in contact with unclean utensils such as pails, strainers, cans, etc., a very dangerous and possibly poisonous contamination takes place.

Essential Requirements for Producing Clean Milk

Healthy cows; clean cows; clean stables; clean people doing the milking in a cleanly manner.

Prompt removal of the milk from the stable after milking to avoid absorption of stable or animal odors.

Immediately cooling to 60 degrees Fahrenheit or lower and keeping at that temperature until delivered.

Plenty of wholesome feed in the form of a well balanced ration, with an absence of foods that cause the milk to be tainted, such as moldy or decayed food, rape, turnips, cabbage, leeks, onions, and other foods of like character.

Access to a plentiful supply of pure water at all times.

Strict regularity in milking.

Requirements for the Production of First Class Cream

Separator in a clean room free from stable odors or other conditions that may tend to taint the cream.

Clean separator; clean utensils; cooling cream promptly to 60 degrees or lower immediately after separating; keep cool until delivered to creamery. With these simple conditions maintained first class cream will be the result.

The Milking Machine

If not kept clean, milking machines furnish a fertile source of contamination for the warm milk. Such bacterial contamination and its later development cause milk to be tainted and unfit for table use.

Further bacterial development results in tainted and gassy curd, and inferior quality in the cheese. First class butter cannot be made from the cream of milk contaminated by the use of an unclean milking machine.

Cleaning the Milking Machine

Immediately after milking has been completed, the machine should be rinsed with cold or luke warm water drawn through the tubes

and teat cups by the vacuum. By occasionally pulling the teat cups out of the water and immersing them, the stream of water is broken and better rinsing accomplished. After rinsing is completed, the same process should be repeated, using hot soda solution and washing the teat cups and tubes with a suitable brush. All parts should then be rinsed, drawing clean water through by vacuum.

Sterilizing Milking Machine Parts

After washing has been completed, tubes and teat cups should be detached and placed in a tank or tub of clean water. The water should then be heated to 170° F. Heating may be done by placing the tub on a stove or by introducing steam from a boiler. Such sterilization by heat of milking machine parts has been found by the United States Department of Agriculture to be the most effective.

Reasonably effective sterilization of milking machine parts is also secured by the proper use of chlorine solutions in lieu of heat sterilization.

A solution of lime water and salt is also a very serviceable sterilizing agent in lieu of either of the above.

Such sterilizing by heat of milking machine parts is the most effective. The fact that the salt and lime solution may be used as the sterilizing agent and the solution in which to keep the teat cups and tubes between milking, commends this solution as a convenience to the busy dairyman.

Each of the methods of sterilizing milking machine parts, will, if properly and regularly used, give satisfactory results. Milking machine parts left in the solution between milking should be rinsed with clean cold water before using.

Milk and cream are by their nature so very susceptible to contamination that they must be constantly guarded by the most scrupulous care.

Premier Wisconsin Butter

It has been elsewhere stated, that upon the generally accepted theory, that quality in butter determines its price, the quality of Wisconsin butter outranks that of all of the states bordering on Wisconsin and the average of the entire United States as shown by the records of the Year Book of the United States Department of Agriculture. Each of the eleven published Year Books of the United States Department of Agriculture, 1910–1920 inclusive, reports Wisconsin farmers as having received at the beginning of each month of each of these years, in nearly all instances, a higher price per pound for butter than was received by the farmers in any of the other states bordering on Wisconsin and higher than the average price received by the farmers of the United States. The following statistics from the United States Department of Agriculture are submitted in confirmation of that statement.

AVERAGE PRICE RECEIVED FOR BUTTER BY FARMERS ON THE FIRST OF EACH MONTH

From the Yearbooks of the U. S. Department of Agriculture

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(1910)												
Illinois	28	27	26	25	24	23	22	23	24	25	26	27
Michigan	29	28	26	26	26	24	23	23	26	27	28	28
Wisconsin	32	31	29	29	29	27	27	27	28	29	29	30
Minnesota	31	29	28	27	27	26	25	26	27	28	28	29
Iowa	30	29	28	27	26	24	24	25	26	26	27	27
United States	28.7	27.9	26.3	25.8	25.5	24.1	23.3	23.8	25.2	26.2	27.1	27.8
(1911)												
Illinois	27	22	21	22	21	19	20	22	23	23	25	27
Michigan	28	24	22	22	20	19	19	20	22	23	25	28
Wisconsin	30	27	24	24	22	21	22	23	25	25	28	31
Minnesota	29	24	22	23	21	20	20	22	24	24	27	30
Iowa	27	22	21	21	20	19	19	22	23	24	25	28
United States	27.8	24.1	22.7	22.6	21.4	20.3	20.4	21.7	23.1	23.8	25.2	27.4
(1912)												
Illinois	27	28	26	25	25	24	24	23	24	26	26	28
Michigan	30	31	28	27	27	25	23	23	24	25	27	29
Wisconsin	33	34	28	28	29	26	25	25	26	27	28	31
Minnesota	31	32	29	27	27	27	24	24	25	26	28	30
Iowa	29	30	27	26	26	25	24	24	24	25	27	29
United States	28.1	29.0	27.2	26.1	26.0	24.8	23.4	23.7	24.2	25.6	26.9	28.8
(1913)												
Illinois	28	27	27	27	26	25	25	25	26	27	27	29
Michigan	30	29	28	29	28	26	24	25	25	28	28	30
Wisconsin	32	32	32	31	30	27	27	26	27	30	30	31
Minnesota	31	30	30	30	29	28	25	25	26	28	29	31
Iowa	29	28	28	29	28	26	25	25	26	27	28	29
United States	28.4	27.6	27.5	27.6	27.0	25.5	24.7	24.9	25.9	27.5	28.2	29.2
(1914)												
Illinois	28	29	26	25	24	23	23	26	27	27	27	28
Michigan	30	29	28	26	25	22	22	24	26	27	28	29
Wisconsin	33	30	29	27	25	25	25	27	29	30	30	31
Minnesota	31	30	27	25	24	24	23	24	27	27	28	31
Iowa	29	29	25	24	24	24	24	25	26	27	27	28
United States	29.2	27.4	26.0	24.9	23.8	22.8	22.9	23.7	25.3	26.0	26.3	28.4
(1915)												
Illinois	28	27	26	25	25	25	24	24	24	24	26	28
Michigan	30	29	28	26	26	24	23	23	24	24	26	27
Wisconsin	31	31	30	28	29	27	27	27	25	26	28	30
Minnesota	31	31	28	26	27	26	25	26	25	26	27	29
Iowa	29	29	28	26	26	25	25	24	25	25	26	27
United States	28.7	27.9	26.8	25.8	25.7	24.8	24.2	24.2	24.5	25.3	26.4	27.6
(1916)												
Illinois	28	27	27	28	27	26	26	26	28	29	30	34
Michigan	28	28	27	28	28	26	25	26	28	30	32	36
Wisconsin	33	31	31	33	32	30	28	28	30	32	35	40
Minnesota	30	30	29	29	31	29	28	27	29	30	33	37
Iowa	28	29	27	29	29	27	26	27	28	30	32	36
United States	28.3	27.6	27.1	27.6	27.9	26.5	25.7	26.1	27.4	29.0	31.1	34.4
(1917)												
Illinois	34	32	33	32	35	34	33	34	35	38	40	40
Michigan	36	35	35	35	37	36	33	34	38	40	42	44
Wisconsin	38	38	40	39	41	40	37	38	40	43	43	44
Minnesota	36	38	38	37	40	38	35	37	39	41	44	43
Iowa	35	35	36	35	38	37	34	35	37	40	43	44
United States	34.0	33.5	34.1	33.5	36.1	35.0	33.5	34.0	36.1	38.9	40.9	41.9
(1918)												
Illinois	42	44	43	39	38	37	37	38	41	48	49	53
Michigan	44	46	45	41	40	38	39	40	42	50	52	55
Wisconsin	47	49	47	43	42	41	42	44	44	55	56	58
Minnesota	45	45	47	41	40	40	40	41	42	52	54	58
Iowa	43	46	44	41	40	39	40	41	41	51	53	55
United States	43.1	43.7	43.4	40.7	39.9	38.6	38.2	39.7	41.4	47.2	49.7	52.7

AVERAGE PRICE RECEIVED FOR BUTTER BY FARMERS ON THE FIRST OF EACH MONTH—Continued

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(1919)												
Illinois	54	48	41	47	49	48	47	48	49	51	54	59
Michigan	58	51	44	50	54	50	48	50	52	54	59	63
Wisconsin	65	54	50	56	59	56	54	53	54	57	63	67
Minnesota	62	51	45	52	57	54	51	52	52	54	61	66
Iowa	60	51	44	49	54	52	48	51	51	53	58	63
United States	54.9	49.6	43.8	47.6	50.3	49.1	47.2	48.2	49.7	51 5	56.0	60.0
(1920)												
Illinois	59	58	53	56	55	53	52	53	54	55	53	53
Michigan	65	61	59	57	59	53	52	52	54	55	54	56
Wisconsin	67	63	60	63	63	58	57	56	56	57	57	58
Minnesota	67	61	59	58	62	57	54	56	54	56	56	57
Iowa	64	59	58	57	57	54	52	53	52	54	54	55
United States	61.3	57.8	55.9	56.1	57.6	53.5	51.6	52.0	52.3	54.1	54.3	54.7

It will be seen that in 117 of the 132 months reported, Wisconsin farmers received at the beginning of each month a higher price per pound for butter than did the farmers of any state bordering on Wisconsin and higher than the average received by the farmers of the United States.

In only 12 of the 132 months was the price received for butter by the farmers of one other state bordering on Wisconsin equal to the price of Wisconsin butter and in only three months was the price of butter for another state higher than for Wisconsin.

To maintain this leading rank in the quality of butter in the markets of the country will itself be no small achievement. Without strenuous efforts at improvement in all phases of the butter industry we may not hope to succeed, but the high aspirations and cooperative efforts of the organized butter makers of Wisconsin offer high hope for the future Wisconsin butter industry.

"Filled Milk" Legislation

The Wisconsin Legislature of 1921 in response to a greatly aroused public opinion and a demand, enacted a law, the essential feature of which is to prohibit the manufacture or sale in Wisconsin of an article of food produced by adding vegetable fats or oils to condensed skim milk. The validity of the law was challenged, resulting in long drawn out and vigorously contested litigation. The whole matter involves questions of the constitutional right of the state, public policy and widespread public interest. The following decision of the Supreme Court of Wisconsin by Mr. Justice Crownhart, briefly, pertinently and authentically sets forth the facts and the law in the case and is presented in full.

State 3

January Term, 1922.

STATE OF WISCONSIN,
IN SUPREME COURT.

State of Wisconsin Upon the Relation of Carnation Milk Products Company, a Corporation, and The Hebe Company, a Corporation,

Plaintiffs,

vs.

J. Q. Emery as Dairy and Food Commissioner of the State of Wisconsin,

Defendant.

An action under the original jurisdiction of this court, upon the relation of the plaintiffs corporations to enjoin the defendants from enforcing the provisions of Chapter 409, of the Laws of 1921, this state, as against the plaintiffs, so far as the same applies to the manufacture and sale by the plaintiffs of the product known as "Hebe."

Upon the filing of the complaint, an answer was served, raising certain issues of fact, which were referred to a referee for his findings. Chapter 409, in so far as it affects the plaintiffs, is as follows:

"2. It shall be unlawful for any person, firm or corporation, by himself, his servant or agent, or as the servant or agent of another, to manufacture, sell or exchange, or have in possession with intent to sell or exchange, any milk, cream, skim milk, buttermilk, condensed or evaporated milk, powdered milk, condensed skim milk, or any of the fluid derivatives of any of them to which has been added any fat or oil other than milk fat, either under the name of said products or articles or the derivatives thereof or under any fictitious or trade name whatsoever."

The plaintiffs manufacture and have in their possession for sale, Hebe, which is a compound composed chiefly of milk from which the butterfat has been extracted and cocoanut oil injected in place of the butterfat.

Plaintiffs contend that this provision of law as applied to their business is in contravention to the Fourteenth Amendment to the Constitution of the United States, and similar provisions of the state constitution, and to the commerce clause of the federal constitution.

Hebe is manufactured by the Carnation Milk Products Company in Wisconsin, and its entire product sold to The Hebe Company. The Hebe Company sells the compound to jobbers and wholesalers only. The compound contains 92.2 per cent skimmed milk or buttermilk, and 7.8 per cent of cocoanut oil similarly evaporated as condensed milk. It is similar in taste, odor, appearance, consistency and manner of packing to evaporated milk. The butterfat extracted from the milk is much more expensive than the cocoanut oil injected into the milk to take the place of the butterfat. Hebe can therefore be sold, and is sold, to wholesalers and retailers cheaper than the genuine evaporated or condensed milk.

The compound has been manufactured in the state for the last five years, while condensed or evaporated milk has been manufactured

and on the market for the last twenty-five or thirty years. The compound is not deleterious in itself, but is not of the same quality or food value as the genuine evaporated milk. It is lacking in a certain chemical substance known as vitamines A, which are essential elements of a proper dietary. These vitamines may be supplied by other foods. It is admitted that the compound is not a proper substitute for the genuine for infants.

Hebe has been extensively advertised as a substitute for milk, through the press and magazines, and by means of cook books prepared by The Hebe Company. It has been advertised in the newspapers of Wisconsin as "milk," "milk compound" and "compound of milk." It has been sold by retailers in Wisconsin as "milk" or "evaporated milk."

There have also been advertised and sold four other similar compounds in the state of Wisconsin, either as "milk" or "compound of milk." These compounds are also shipped out of the state and advertised and sold in other states as substitutes for evaporated milk.

In some cases the compounds are sold by the retailers at the same price as the genuine evaporated milk. The compounds have been variously labeled at different times to indicate that they were more or less equivalent to or better than the genuine evaporated milk. At the time of the commencement of this action, Hebe was labeled: "A COMPOUND OF EVAPORATED SKIMMED MILK AND VEGETABLE FAT. Contains 7.8% Vegetable Fat, 25.5% Total Solids." On the margin of the label was printed: "FOR COOKING AND BAKING—Do Not Use in Place of Milk for Infants."

The Carnation Milk Products Company has an investment in its plants in Wisconsin of about $650,000, and of this about $50,000 in its plants is used for the manufacture of Hebe.

I.

CROWNHART, J. It is but trite to say that the constitution of our state is the supreme law. Therein will be found the powers of the executive, legislative and judicial branches of government, each supreme in its field but coordinate in their sources of powers and the exercise thereof.

The greatest deference must be paid by each department to the other acting within the scope of its powers. Any usurpation of power by one department at the expense of another is a wrong against the people who adopted the constitution as their charter of liberties and rights.

To the legislature was given the power to enact laws not in contravention to the constitution. A law so enacted becomes the public policy of the state. *Borgnis v. Falk Company*, 147 Wis., p. 351.

Before a statute can be said to be unconstitutional the statute must lack in public purpose "*so clear and palpable as to be perceptible to the mind at first blush*," so said the great Chief Justice Dixon, who sat in the constitutional convention and helped frame the charter of our state. *Brodhead v. Milwaukee*, 19 Wis., p. 686. "We must bear in mind," said Chief Justice Winslow, "the well established principle that

it (the statute) must be sustained unless it is clear beyond reasonable question that it violates some constitutional limitation or prohibition." *Borgnis v. Falk Company*, 147 Wis., p. 348. "The rule of all courts," said Justice Bardeen, "is that a statute will be declared unconstitutional only when it is shown beyond reasonable doubt that it conflicts with the fundamental law. It is equally true that the courts will seek every reasonable mode of reconciliation of the statute with the constitution, and it is only when reconciliation has been found impossible that it will be declared void." *State ex rel Hicks v. Stevens*, 112 Wis., p. 172. Said Mr. Justice Dodge: "We must and do concede to the legislative branch of the government the fullest exercise of discretion within the realm of reason, and, if a public purpose can be conceived which might rationally be deemed to justify the act, the court cannot further weigh the adequacy of the need or the wisdom of the method." *State ex rel Zillmer v. Kreutzberg*, 114 Wis., p. 549. The courts will presume in favor of the constitutionality of the acts in a case of doubt and sustain them. *State ex rel Brayton v. Merriman*, 6 Wis. 14; *Smith v. Mariner*, 5 Wis. 541; *In re Oliver*, 17 Wis. 681; *State ex rel Kellogg v. Currens*, 111 Wis. 431; *Northwestern National Bank of Superior v. City of Superior*, 103 Wis. 43.

The United States Supreme Court has declared equally emphatically in favor of sustaining acts of Congress and the statutes of states. *Price v. Illinois*, 238 U. S. 446; *Rast v. Van Deman & L. Co.*, 240 U. S., p. 357; *Hebe Co. v. Shaw*, 248 U. S., p. 303.

Cooley on Constitutional Limitations, page 238, says:

"The rule of law upon this subject appears to be, that, except where the constitution has imposed limits upon the legislative power, it must be considered as practically absolute, whether it operate according to natural justice or not in any particular case. The courts are not the guardians of the rights of the people of the state, except as those rights are secured by some constitutional provision which comes within the judicial cognizance. The protection against unwise or oppressive legislation, within constitutional bounds, is by an appeal to the justice and patriotism of the representatives of the people. If this fail, the people in their sovereign capacity can correct the evil; but courts cannot assume their rights. The judiciary can only arrest the execution of a statute when it conflicts with the constitution. It cannot run a race of opinions upon points of right, reason, and expediency with the law-making power. Any legislative act which does not encroach upon the powers apportioned to the other departments of the government, being prima facie valid, must be enforced, unless restrictions upon the legislative authority can be pointed out in the constitution, and the case shown to come within them."

Again, on page 239:

"Nor are the courts at liberty to declare an act void, because in their opinion it is opposed to a spirit supposed to pervade the constitution, but not expressed in words."

II.

The act sought to be avoided was passed in the exercise of the police power of the state.

The police power covers all matters having a reasonable relation to the protection of the public health, safety or welfare, *McLean v. Arkansas*, 211 U. S. 539.

As applied to food, this authority extends to requiring a fixed minimum amount of nutritional elements. *Hutchinson Ice Cream Company v. Iowa*, 242 U. S. 153; *Hebe Company v. Shaw*, 248 U. S. 297.

The police power also has an especially appropriate field of action in the prevention of fraud and deception. *Hall v. Geiger-Jones Company*, 242 U. S. 539.

It may be legitimately exercised against even the occasional fraud not inherent in the business or product, and a *fortiori* against the fraud that is inherent in it. *Merrick v. Halsey Company*, 242 U. S. 568.

It extends farther, and embraces the right to prohibit all things which constitute obstacles to a greater public welfare *(Rast v. Van Deman & Lewis*, 240 U. S. 342) and to do whatever will promote the general convenience or the general prosperity *(Bacon v. Walker*, 204 U. S. 311), including even such matters as the preservation of the reputation of a great industry of the state against injury in markets outside of the state. *(Slight v. Kirkwood*, 237 U. S. 52).

Given a legitimate subject for the exercise of the police power, it is for the legislature to adopt such measures as it may deem necessary to make its action effective, so long as they have reasonable relation to that end. *(Purity Extract Co. v. Lynch*, 226 U. S. 192.)

The measures which the legislature may adopt for such purpose may be either regulatory or prohibitory, whichever the legislature deems the more effective method of accomplishing the result *(Silz v. Hesterberg*, 211 U. S. 31), and they may be either in the form of general directions or of detailed measures against a particular article *(Price v. Illinois*, 238 U. S. 448).

Accordingly, the authority of the legislature to prohibit an article is not affected by the fact that the article may be truthfully labeled *(Hebe Co. v. Shaw*, 248 U. S. 297) or that the law will result in destroying the value of property devoted to the manufacture of such article *(Mugler v. Kansas*, 123 U. S. 623).

"At an early day it (the police power) was held to embrace every law or statute which concerns the whole or any part of the people, whether it related to their rights or duties, whether it respected them as men or citizens of the state, whether in their public or private relations, whether it related to the rights of persons or property of the public or any individual within the state. *New York v. Miln*, 11 Pet. 102, 139. The police power, in its broadest sense, includes all legislation and almost every function of civil government. *Barbier v. Connolly*, 113 U. S. 27. It is not subject to definite limitations, but is coextensive with the necessities of the case and the safeguards of public interest. *Camfield v. United States*, 167 U. S. 518, 524. It embraces regulations designed to promote public convenience or the general prosperity or welfare, as well as those specifically intended to promote the public safety or the public health. *Chicago, B. & Q. R. Co. v. Illinois*, 200 U. S. 561, 592. In one of the latest utterances of this court upon the subject, it was said: 'Whether it is a valid exercise of the police power is the question in the case, and that power we have defined, as far as it is capable of being defined by general words, a number of times. It is not susceptible of circumstantial precision. It ex-

tends, we have said, not only to regulations which promote the public health, morals and safety but to those which promote the public convenience or the general prosperity. . . . And, further, 'It is the most essential of powers, at times the most insistent, and always one of the least limitable of the powers of government,' *Eubank v. Richmond*, 226 U. S. 137." *Sligh v. Kirkwood*, 237 U. S., p. 59.

It is competent for the legislature to exercise all legislative power not forbidden by the constitution or delegated to the general government, or prohibited by the constitution of the United States. *Bushnell v. Beloit*, 10 Wis. 195.

Mr. Justice Timlin said: "We must start with the axiom that the legislature has all legislative power not withheld or limited by the constitution of the state or the exercise of which is not prohibited by the federal constitution." *Nitka v. W. U. Tel. Co.*, 149 Wis. 110.

The police power of a state is as broad and as plenary as the taxing power. *Bittenhaus v. Johnston*, 92 Wis. 588.

The police power is a broad and comprehensive power, by which the rights of an individual, both as to his liberty and his enjoyment of property, may be curtailed in the interest of the public welfare, but it is not easy of accurate definition. *Huber v. Merkel*, 117 Wis., p. 366.

As was said by Mr. Justice Dodge: "By a long line of decisions and consensus therein by the people of the various states, it has become settled that thereby all powers of a legislative character ordinarily enjoyed by sovereign governments became vested in the state legislature, except so far as restrained expressly or by substantially necessary implication elsewhere in the constitution." *State ex rel Zillmer v. Kreutzberg*, 114 Wis., p. 532.

III.

HISTORY OF LEGISLATION RELATING TO FILLED MILK

We submit a history of legislation relating to filled milk. It has been held that where the objection to the constitutionality of a statute turns on the question as to its reasonableness under the police power, such history may be very persuasive. Certainly on the question of whether it is a debatable subject, it is pertinent to know that the matter has been generally debated. *Adams v. Milwaukee*, 144 Wis. 371; *Purity Extract Co. v. Lynch*, 226 U. S., p. 204; *Muller v. Oregon*, 208 U. S. 412.

As was said in the latter case: "When a question of fact is debated and debatable, and the extent to which a special constitutional limitation goes is affected by the truth in respect to that fact, a widespread and long continued belief concerning it is worthy of consideration."

It was said by Mr. Justice Holmes, in *Noble State Bank v. Haskell*, 219 U. S. 104, speaking of the police power of a state: "It may be put forth in aid of what is sanctioned by usage, or held by the prevailing morality, or strong and preponderant opinion to be greatly and immediately necessary to the public welfare." And it has been well said, what we know as men we cannot ignore as judges; that is, we will consider matters of common knowledge without proof.

The laws prohibiting filled milk, now in force, are of three general types:

1. Laws which directly prohibit the manufacture and sale of filled milk. Of this type are the laws of New Jersey, New York and Wisconsin.

2. Laws which prescribe standards for condensed or evaporated milk which have the effect of prohibiting the manufacture and sale of filled milk. Of this type are the laws of Colorado, Connecticut, Florida, Maryland and Ohio.

3. Laws which permit filled milk to be sold as "imitation milk" under restrictions to prevent fraud. These restrictions are so severe as to be practically prohibitive. These are the laws of California, Oregon and Utah.

The Bureau of Animal Industry of the U. S. Department of Agriculture, in a bulletin on "Legal Standards for Dairy Products," issued in 1919 as a typewritten bulletin, lists thirty-one states as having standards for condensed or evaporated milk, which were adopted either by an act of the legislature or by some administrative body under legislative authority, which prescribe the percentage of solids and butterfats. These states are Arizona, California, Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New York, North Carolina, North Dakota, Ohio, Oregon, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, Wisconsin, Wyoming. In addition to the states listed in this bulletin, Connecticut and Florida have laws prescribing standards for condensed milk.

Congress has before it a prohibitory bill which has passed the House 250 to 40.

HISTORY OF BILL IN OUR LEGISLATURE

The legislative records show that the bill was thoroughly considered before committees of each house; that substitute amendments were offered for regulation in each house, which were defeated by large majorities; that the bill came up in each house by special order, which denotes special consideration.

The bill was passed in the assembly by a vote of 67 to 10, and in the senate by a vote of 28 to 0.

The bill was signed by the governor, who himself is a lawyer and has been attorney general of the state. The legislative members and the governor are bound by the same oath to support the constitution as are the members of this court. Their well considered action should have great weight according to judicial authority.

It will be seen that the compounds have been considered inimical to the public welfare by a large portion of the people of this country. We must conclude that there must have been some reasonable basis to induce legislation of this kind by so many different bodies.

IV.

We now come to a recognized judicial authority on the subject, which finally settles the question so far as the federal constitution is concerned.

The "Hebe" Company shipped some of its product manufactured in Wisconsin into Ohio for sale in that state. The sale being forbidden in that state by statute, the question of the validity of the statute was raised in the United States District Court for Ohio, and passed upon by three judges sitting at the trial. The statute was upheld. The "Hebe" Company then took the case to the United States Supreme Court, and there the statute was again upheld. In the United States Supreme Court the contention was made, as here, that the statute was in contravention to the Fourteenth Amendment. As there is no corresponding provision in our state constitution that goes so far to sustain the rights of property as the Fourteenth Amendment of the federal constitution, that decision is decisive of the case here if it is followed. While this court has the right to differ from the Supreme Court of the United States on this question, it will not do so on the construction of the federal constitution. Of the twelve federal judges passing on the subject, three supreme judges dissented, but not upon the validity of the statute but on its construction as to whether it applied to the case before them.

The United States Supreme Court, in *Hebe Co. v. Shaw*, 248 U. S., p. 303, said:

"The purposes to secure a certain minimum of nutritive elements and to prevent fraud may be carried out in this way even though condensed skimmed milk and Hebe both should be admitted to be wholesome. The power of the legislature 'is not to be denied simply because some innocent articles or transactions may be found within the prescribed class. The inquiry must be whether, considering the end in view, the statute passes the bounds of reason and assumes the character of a merely arbitrary fiat.' *Purity Extract & Tonic Co. v. Lynch*, 226 U. S., p. 204. If the character or effect of the article as intended to be used 'be debatable, the legislature is entitled to its own judgment, and that judgment is not to be superseded by the verdict of a jury,' or, we may add, by the personal opinion of judges, 'upon the issue which the legislature has decided.' *Price v. Illinois*, 238 U. S., p. 452; *Rast v. Van Deman & L. Co.*, 240 U. S. 342. The answer to the inquiry is that the provisions are of a kind familiar to legislation and often sustained, and that it is impossible for this court to say that they might not be believed to be necessary in order to accomplish the desired ends."

As was said by Mr. Justice Dodge:

"The reasons for a given statute are for the legislature, if there are any which can fairly have weight. They are not for the courts. The latter have no control over the validity of a law unless they can say with substantial certainty that no argument or consideration of public policy exists which could have weight with any reasonable and honest man. If any such argument or reason can be suggested, its weight or sufficiency is not debatable in the courts. The existence of legitimate and adequate reasons for any law should not lightly be denied. Human minds differ, and what may seem inadequate or irrelevant to one may seem cogent to another. One is not justified, therefore, in assum-

ing that all who differ from him are unreasonable or are not acting in good faith. It is from such considerations as these that the courts have laid down for themselves the rule that only in a clear case—clear beyond reasonable doubt—will they venture to assert that a law is without reason to support either its purpose or the classification it may make." *The State ex rel Kellogg v. Currents and others*, 111 Wis., p. 439.

V.

The findings of the referee are not conclusive on the court. They may be considered only to refresh the memory of the court as to matters of which the court will consider as common knowledge and of which it takes judicial notice, or for the purpose of bringing to the attention of the court scientific facts which would otherwise devolve upon the court undue labor.

If there is any reasonable basis upon which the legislation may constitutionally rest, the court must assume that the legislature had such fact in mind and passed the act pursuant thereto. The court cannot try the legislature and reverse its decision as to the facts. All facts necessary to sustain the act must be taken as conclusively found by the legislature, if any such facts may be reasonably conceived in the mind of the court. *6 R. C. L., sections 101 to 116, inclusive, and cases there cited.*

The compounds manufactured and sold by the plaintiffs and other companies are in exact imitation of the genuine evaporated milk. They are produced and sold by the manufacturer cheaper than the genuine. They are not of equal food as the genuine. They may be sold, however, and are susceptible of being sold to the public for the genuine at the same price. They are therefore capable of being used for fraudulent purposes and to deceive purchasers. The temptation of retail dealers is to sell the cheaper article in place of the more expensive article to increase their profits. If used as a substitute for milk, the public health may be impaired, not because the compounds are in themselves deleterious, but because they lack in certain food elements essential to a well balanced dietary. It was competent, therefore, for the legislature to find that the manufacture and sale of the compounds in question were conducive to fraud and deception, and likely to be injurious to the public health. Having so found, as we must conclude it did, it is not for this court to set its judgment against that of the legislature.

VI.

By reference to the federal census of 1920, we find that Wisconsin ranks first among all the states of the union in total value of dairy products from its farms. It had 2,763,488 dairy cattle in that year, an average of more than ten to the farm. It held first rank in milk production, producing 858,258,521 gallons, valued at over 230 millions of dollars. It produced more cheese than any other state, the value of which amounted to $91,462,878. It ranked second in amount of butter produced. It ranked first in the manufacture of condensed milk. It ranked second in milk powders produced. In 1920, 64.9 per cent of

the nation's cheese was produced in this state, and 26.6 per cent of her condensed milk, 24 per cent of her milk powders, and 11.4 per cent of the nation's butter were produced here. Nor is this all. The great dairy industry of this state is reflected in the high average production of agriculture crops of many varieties. The fertilizers from the dairy industry enrich the soil, so that of the north central states, Wisconsin was first in ten years' average yield per acre in wheat and potatoes, second in barley and hay, and third in corn, oats and rye.

The reputation of Wisconsin for the purity and excellence of her dairy products stands high in the markets of the country, and the prices she obtains therefor are equally well sustained.

The constitution of our state was ordained, among other things, to promote the general welfare. Thus it might well be that the legislation in issue could be upheld to protect the reputation of the state for its dairy products in the markets of the country from adulteration and misleading representations. The advertisements of cocoanut oil compounds have been skillfully prepared to give the impression that the compounds are equal, if not better, than the genuine dairy product. For instance, a full-page advertisement in the Chicago Tribune contains a typical gem of the advertiser's art:

"Nutro is a delicious and nutritious new milk product. It is prepared in the rich dairying districts of Wisconsin and Indiana, and made of pure, fresh cow's milk with the animal fats extracted and essential food values replaced by a refined, rich, sweet, purely vegetable cocoanut fat.

"Nutro is pure, delicious, wholesome. It is prepared in model condenseries from pure cow's milk evaporated to double strength, with the animal fats extracted and then enriched with sweet, edible, highly refined cocoanut fat."

Comment is unnecessary, other than to say that other advertisements are equally well calculated to convey the idea to the public that pure, fresh cow's milk from Wisconsin has been enriched and improved by the injection of sweet, edible, highly refined cocoanut fat.

The state is not without power to protect its industries in its markets in this and other states, according to a decision of the Supreme Court of the United States upholding a statute of Florida designed to protect its fruit trade. We quote from *Sligh v. Kirkwood*, 237 U. S., p. 61:

"We may take judicial notice of the fact that the raising of citrus fruits is one of the great industries of the state of Florida. It was competent for the legislature to find that it was essential for the success of that industry that its reputation be preserved in other states wherein such fruits find their most extensive market. The shipment of fruits so immature as to be unfit for consumption, and consequently injurious to the health of the purchaser, would not be otherwise than a serious injury to the local trade, and would certainly affect the successful conduct of such business within the state. The protection of the state's reputation in foreign markets, with the consequent beneficial effect upon a great home industry, may have been within the legislative intent, and it certainly could not be said that this legislation has no reasonable relation to the accomplishment of that purpose."

Nothing will destroy the reputation of the state in this industry more completely than to allow the manufacture of a cheap and inferior article to be advertised and sold in the markets of the world as and for the genuine article made in Wisconsin.

The principle of allowing these compounds to be manufactured and sold, followed to its logical conclusion, will lead from "filled" milk to "filled" butter, from "filled" butter to "filled" cheese, and finally we may have the "synthetic" cow taking the place of the domestic animal of the farm. Vegetable fats, cheap, but lacking in essential elements of vigorous life, will take the place of butterfats of demonstrable higher food value. A great industry of a great state will decline, a victim of "national advertising" of cheap and deceptive substitutes.

It follows that the act challenged by this action is constitutional and within the police power of the legislature.

By the Court.—The action is dismissed.

National and State Jurisdiction Pertaining to Dairy and Food Legislation

Much light and authoritative statement on this important subject have been given in the foregoing decision. In recent years contests have been frequent, involving the constitutionality of state food laws in their relation to the National food law. Decisions of the United States supreme court and of the state supreme court, involving these questions are therefore matters of highest importance to the public, to the administrators of dairy and food laws, to manufacturers and purveyors of dairy and food products. The fact is that in the exercise of constitutional legislative power, the state legislature in the field of its own jurisdiction is as supreme as is the congress of the United States in the exercise of its constitutional power in the field of its jurisdiction. This proposition has been fully sustained by the supreme court of the United States in numerous decisions, especially in *Savage v. Jones*, 225 U. S., *McDermott v. State of Wisconsin*, and *Weigle v. Curtice Brothers Company*.

In the case of *Savage v. Jones*, the question of the right of the legislature of Indiana to require specified labeling on certain stock foods shipped into Indiana in interstate commerce was the issue. I present this matter because the claim has been set up in certain quarters, that the state has no authority to enact laws requiring any other labeling than that used in interstate commerce, on food products, which food products have been shipped into that state in interstate commerce. In *Savage v. Jones*, the right of the state to enact reasonable law in this respect was most clearly and emphatically maintained by the United States supreme court and was in effect as follows as set forth in the syllabus:

"Where an act of congress relating to a subject on which the state may act also, limits its prohibitions, it leaves the subject open to state regulation as to the prohibitions which are unenumerated.

"The state of Indiana regulating the sale, and requiring formula of ingredients of concentrated commercial stock food is a proper and

reasonable exercise of legislative police authority for the protection of the people of the state. The act is not unconstitutional as depriving a vendor of such food who lives in another state and ships it therefrom to Indiana, either as a regulation of, or burden upon, interstate commerce, as depriving any vendor thereof of his property without due process of law, or as a revenue measure beyond the power of the state, nor does the requirement for publishing the ingredients conflict in any manner with the food and drug act of 1906."

In that decision the United States supreme court stated:

"The intent to supersede the exercise by the state of its police power as to matters not covered by the Federal legislature is not to be inferred from a mere fact that congress has seen fit to circumscribe its regulation and to occupy a limited field. In other words, such intent is not to be implied unless the act of congress fairly interpreted, is in actual conflict with the law of the state."

In the case of *George McDermott vs. State of Wisconsin*, referring to the National Food and Drugs Act the United States supreme court said:

"The object of the statute is to prevent the misuse of the facilities of interstate commerce in conveying to and placing before the consumer misbranded and adulterated articles or medicine or food, and in order that its protection may be afforded to those who are intended to receive its benefits the brands regulated must be upon the packages intended to reach the purchaser. * * * While these regulations are within the power of congress, *it by no means follows that the state is not permitted to make regulations with a view to the protection of its people against fraud or imposition by impure food or drugs.* This subject was fully considered by this court in *Savage vs. Jones*, 225 U. S. 501, in which the power of the state to make regulations concerning the same subject-matter, reasonable in their terms and not in conflict with the acts of congress, was recognized and stated, and certain regulations of the state of Indiana were held not to be inconsistent with the Food and Drugs Act of Congress."

Maintaining that in food law legislation, effective protection of the consuming public against the harmful consequences of adulteration and fraud is the paramount issue, Wisconsin has persistently refused to surrender her constitutional birthright and follow that ignis fatuus, that will-o'-the-wisp, "uniformity."

Among the more conspicuous Wisconsin food laws prohibiting the sale of certain articles of food which are not prescribed by the National food law, is the law forbidding the sale of articles of food containing benzoate of soda; the sale of articles of food containing saccharin; the sale of any canned fruits, vegetables, meats, fish or shell fish containing any artificial coloring or any bleaching compound or any chemical preservative; any foods that are colored and flavored in imitation of the genuine color and flavor of another article; the sale of flour that has been artificially bleached; the sale of oleomargarine which shall be in imitation of yellow butter; the manufacture and sale of cheese containing more than 38 per cent moisture; a similar law relating to the sale of butter containing less than 80 per cent of butter fat; the sale of filled cheese; and the recent law

enacted by the Wisconsin legislature which forbids the sale of condensed skim milk vegetable fat compounds and which law has been sustained by the Wisconsin supreme court and admittedly no appeal from this decision is to be taken to the higher courts.

In the case *Weigle vs. Curtice Brothers Company*, 248 United States, in which the defendant disavowed any contention that the state laws affected or purported to affect sales by the importer in the unbroken wooden packages containing the bottles, the decree treated that subject as taken out of the case.

"But the bill went further and setting up a decision incorporated in a regulation under the act if each container should be plainly labeled, contended that under the Food and Drugs Act and the commerce clause of the constitution, the Wisconsin law was invalid even as applied to domestic retail trade in single bottles or the contents of single bottles of the plaintiffs' goods."

The United States supreme court disposed of this contention in the following vigorous language which fully and conclusively sustains all the contentions I have made in this paper as to the constitutional rights of the states in food law legislation:

"The Food and Drugs Act indicates its intent to respect the recognized line of distinction between domestic and interstate commerce too clearly to need argument or an examination of its language. It naturally would, as the distinction is constitutional. The fact that a food or drug might be condemned by congress if it passed from state to state, does not carry an immunity of foods or drugs, making the same passage that it does not condemn. Neither the silence of congress nor the decisions of officers of the United States have any authority beyond the domain established by the Constitution. When objects of commerce get within the sphere of state legislation the state may exercise its independent judgment and prohibit what congress did not see fit to forbid. When they get within that sphere is determined as we have said, by the old long-established criteria. The Food and Drugs Act does not interfere with state regulation of selling at retail. Such regulation is not an attempt to supplement the action of congress in interstate commerce but the exercise of an authority outside of that commerce that always has remained in the states."

Detailed information pertaining to various activities of the department are to be found in the reports of Harry Klueter, assistant commissioner and chief chemist; William Winder, second assistant commissioner, chief of the cheese division; J. E. Boettcher, chief of the butter division; C. J. Kremer, senior food inspector; and George Warner, chief inspector of weights and measures, published in the pages following.

J. Q. Emery,
Dairy & Food Commissioner,
Ex Officio State Superintendent
of Weights and Measures.

Extension of Cold Storage Periods

By authority conferred upon the dairy and food commissioner by section 1684w—8, the periods of cold storage for the year ending June 30, 1921, were extended thirty days to the following named establishments:

Date of Extension 1921	Establishment	Kind of Food
April 8,	Arthur Commission Co., 424-425 Popular St., Milwaukee	Veal
April 19,	The Wright Bakery, Marshfield	Frozen Eggs

An extension of thirty days for the year ending June 30, 1922, was granted to each of the following establishments:

Date of Extension 1921	Establishment	Kind of Food
July 19,	St. Mary's Hospital, 448 Lake Drive, Milwaukee	Butter
Oct. 11,	Plankinton Packing Co., Milwaukee	Meat
Oct. 15,	Booth Fisheries Co., Green Bay	Fish
Jan. 11,	Jos. P. Kalt, 128 Grand Ave., Milwaukee	Meat

REPORT BY MONTHS OF FOODS IN COLD STORAGE FROM JULY, 1920, TO JULY, 1921

(The amounts given represent pounds except in the case of eggs it represents dozens)

Articles	July	August	September	October	November	December	January	February	March	April	May	June
Meats:												
Beef (all kinds)	307,228	247,912	195,443	451,849	1,111,354	1,286,809	1,243,534	1,302,103	1,027,128½	663,191½	590,884½	331,586
Veal	89,760	72,123	45,130	46,748	51,829	67,510	59,162	35,182	39,960	56,973	51,013	46,149
Mutton and Lamb	38,765	29,357	46,136	64,444	77,966	99,279	87,405	82,345	69,061	59,896	29,639	32,118
Pork (all kinds)	729,053	461,379	299,737	208,421	416,668	634,259	927,892	1,402,638	1,323,150	1,216,541	1,407,166	1,310,086
Lard	224,638	49,143	18,018	56,580	6,536	47,006	97,251	240,476	474,976	412,081	208,435	833,506
Fish	274,148	262,755	546,783	732,941	2,157,640	2,137,064	1,737,433	916,211	485,494	178,408	240,443	415,106
Poultry	104,290	85,734	98,242	153,771	411,385	622,119	618,662	536,619	424,141	267,726	171,620½	110,265
Game	17,759	17,759	17,818	18,282	19,221	57,477	48,678	34,511	24,625	17,411	17,167	17,167
Eggs, in shell	3,310,650	3,382,866	3,137,130	2,609,040	1,258,217	278,001	35,885	28,150	346,320	1,988,957	3,676,127	4,384,157
Eggs, out of shell	80,144	106,932	86,793	66,673	62,284	55,344	73,842	39,784	36,073	32,957	172,737	269,726
Butter	1,451,021	1,421,100	1,169,867	926,658	673,596½	512,849	296,064	94,966	105,564	56,090	330,469	1,422,288
Oleomargarine	4,720	3,402	5,598	5,763	5,194	4,967	2,282	2,350	1,830	2,046	1,453	779

REPORT BY MONTHS OF FOODS IN COLD STORAGE FROM JULY, 1921, TO JULY, 1922

(The amounts given represent pounds except in the case of eggs it represents dozens)

Articles	July	August	September	October	November	December	January	February	March	April	May	June
Meats:												
Beef (all kinds)	331,985	294,517	217,634	416,293	988,252	1,254,846	1,216,597	1,263,935	1,214,438	1,108,699	1,025,577	796,641
Veal	44,793	230,023	31,602	39,385	51,862	55,277	62,906	78,690	84,336	67,230	57,137	77,425
Mutton and Lamb	32,612	29,988	28,978	36,432	27,366	30,270	17,615	14,476	16,311	13,003	11,333	15,057
Pork (all kinds)	1,103,052	1,062,385	842,073	258,883	212,073	298,193	358,846	444,373	512,337	581,817	636,625	734,982
Lard	881,939	515,602	593,202	635,202	454,359	35,526	196,875	217,125	337,264	234,709	90,245	216,926
Fish	261,805	446,790	268,840	409,528	885,662	1,265,671	930,746	556,852	117,518	86,099	123,236	356,057
Poultry	61,846½	56,740½	107,174½	182,418½	481,540½	568,129	548,868	489,850½	377,492¼	254,842¼	178,735	103,109½
Game	17,149	17,182	17,314	16,697	16,454	7,307	15,237	25,140	20,733	20,368	20,428	20,586
Eggs, in shell	4,438,118	4,740,317	3,658,997	2,826,590	1,280,275	309,688	74,220	1,620	187,685	1,810,861	4,385,202	6,151,400
Eggs, out of shell	119,754	162,586	117,076	84,151	100,281	66,693	44,818	33,061	27,046	42,974	152,064	186,945
Butter	1,562,372	1,312,403	899,183½	655,500½	482,047	358,737	277,600	147,579	23,629	9,181	280,293	937,331
Oleomargarine	545	341	876	840	1,215	1,613	1,370	1,270	1,640	436	826	482

CONVICTIONS

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1920				
July 7	H. S. Bennett, Clayton	Manufacturing and selling cheese containing more than 40% moisture	C. A. Taylor, Barron	$25 and costs.
July 9	Max P. E. Radloff, Hustisford	Operating a cheese factory in an unsanitary condition	Judge Licht, Beaver Dam	Fine suspended on payment of costs
July 14	Andrew Rendmeister, Jct. City, R. 2	Using an unclean, filthy, obnoxious milking machine	W. H. Getts, Grand Rapids	$25 and costs
July 15	R. R. McCarthy, Oshkosh	For the selling of cream in the city of Oshkosh below standard	Judge A. W. Goss, Oshkosh	$25 and costs
July 17	J. F. Wilferd, Baldwin	Manufactured and prepared food for sale under unsanitary conditions	A. R. Kibby, New Richmond	$25 and costs
July 21	W. M. Essex, Yuba, R. F. D	Maintaining and operating a cheese facotry in an unsanitary condition	S. G. Curtis, Richland Ctr	$25 and costs
July 27	L. S. Ryan, Blanchardville	Failure to wash and return empty ice cream cans in specified time	C. Vickers, Sr., Blanchardville	$25 and costs
July 27	A. Wolpert, Racine	Selling "Carolene" as milk	E. R. Burgess, Racine	Suspended upon payment of costs
July 28	Harry K. Timm, Green Bay	Making skim cheese in the form of American cheese	N. J. Monahan, Green Bay	$50 and costs
July 30	Ast Bros., Dodgeville	Maintaining and operating a cheese factory and keeping utensils in an unsanitary condition	T. H. Arthur, Dodgeville	$25 and costs
July 30	Mt. Vernon Ch. Co., Rewey, R. 1	Maintaining and operating a cheese factory in an unsanitary condition	T. H. Arthur, Dodgeville	$25 and costs
July 30	M. F. Krohn, R. 6, Campbellsport	Operating a cheese factory in an unsanitary condition	W. Justin, Fond du Lac	$25 and costs
Aug. 2	Valentine Arndt, Thorp	Selling milk in dirty open seamed cans	L. J. Snyder, Thorp	$25 and costs
Aug. 2	John Heiman, R. 2, Thorp	Selling milk in cans which were open seamed	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Miss Kocher, R. 1, Thorp	Selling milk in dirty open seamed cans	L. J. Snyder, Thorp	$25 and costs
Aug. 2	George Smith, Thorp	Selling milk which was unsanitary	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Frank Schultz, R. 2, Thorp	Selling milk in dirty open seamed cans	L. J. Snyder, Thorp	$25 and costs
Aug. 2	John Jowski, Thorp	Selling milk which was unsanitary	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Fred Dreisen, Thorp	Selling milk in dirty open seamed cans	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Oscar Mertins, Thorp	Selling milk in cans which were dirty and open seamed	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Wm. Piper, Thorp	Selling unsanitary milk	L. J. Snyder, Thorp	$25 and costs
Aug. 2	William Wilhelm, Thorp	Selling milk in cans, covers of which were dirty and open seamed	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Joe Boryczicz, Thorp	Selling milk which was unsanitary	L. J. Snyder, Thorp	$25 and costs
Aug. 2	Peter Papiernek, R. 4, Thorp	Selling milk in dirty cans	L. J. Snyder, Thorp	$25 and costs
Aug. 2	George Biddle, Thorp	Selling milk in dirty open seamed cans	L. J. Snyder, Thorp	$25 and costs
Aug. 6	Wm. F. Noulin, R. 2, Marathon City	Overreading Babcock test in determining per cent of fat in milk	Louis Machette, Wausau	$25 and costs
Aug. 7	Pete Wurzer, Tester, Elton Hdw. Co., Elton	Overreading Babcock test in determining per cent fat in cream	Arthur Goodrich, Antigo	$25 and costs

Aug. 7	R. H. Talford, Thorp	Selling milk in dirty open seamed cans	L. J. Snyder, Thorp	$25 and costs
Aug. 9	Del. Woodruff, Loganville	Delivering adulterated milk to a cheese factory	W. McCorkle, Richland Ctr	$25 and costs
Aug. 11	B. A. Gromoll, Plymouth	Delivering unsanitary milk to a cheese factory, said milk also drawn from diseased cows	D. Mahlsted, Plymouth Judge Garvin, Ashland	$25 and costs $25 and costs
Aug. 11	Christ Petersen, Nash	Did sell and offer for sale adulterated cream	R. C. Fairbanks, Fond du Lac	$25 and costs
Aug. 14	W. A. Fink, Oakfield	For the using of a milking machine in an unsanitary condition	Henry Casson, Madison	$25 and costs
Aug. 20	Eggiman Bros., Mt. Horeb	Allowing their cheese factory to be operated in an unsanitary and filthy condition	Henry Casson, Madison	$25 and costs
Aug. 20	Robert Schaller, Riley	Maintaining his cheese factory in an unsanitary condition	Henry Casson, Madison	$25 and costs
Aug. 20	Gottlieb Gammeter, Mt. Horeb	Maintaining his cheese factory and utensils in an unsanitary condition	J. A. Donlevy, Oconto	$25 and costs
Aug. 23	Arnold H. Kempen, R. 3, Coleman	Unsanitary and dirty utensils in cheese factory at Klondike	R. C. Fairbank, Fond du Lac R. E. Andrews, Marshfield	$25 and costs $25 and costs
Aug. 24	Thomas Williams, Eldorado	For delivering milk to the cheese factory in unsanitary milk cans	Matt Ransch, Neenah J. Martin, Darlington	$25 and costs $25 and costs
Aug. 24	Herman O. Zich, Lindsey	Operating an unsanitary cheese factory	J. Martin, Darlington	$25 and costs
Aug. 26	Frank Petersen, Allenville	For operating an unsanitary milking machine	Henry Casson, Madison	$25 and costs
Sept. 1	F. P. Haim, Belmont	Adulterated milk	J. A. Donlevy, Oconto	$25 and costs
Sept. 1	K. Kamerude, Darlington	Unsanitary milk, dirty utensils, filthy barn	C. A. Boorman, Wisconsin Rapids	$25 and costs
Sept. 1	Herman Kammer, Blanchardville, R. 3	Maintaining his cheese factory in an unsanitary condition	J. E. Thomas, Waukesha	$25 and costs
Sept. 3	Frank De Cleene, R. 2, Coleman	Operating cheese factory without a license	John H. Jenkins, Athens	$25 and costs
Sept. 3	Henry T. Huebner, Pittsville	Maintaining premises and utensils in an unsanitary condition	Aug. C. Hoppmann, Madison E. R. Gurges, Racine	$25 and costs $25 and costs
Sept. 11	Al. Schiller, Henks Mineral Spring Co., Waukesha	Using saccharine in soda water and ginger ale	J. E. Thomas, Waukesha	$25 and costs
Sept. 13	Henry Rux, Athens	Maintaining premises and utensils in an unsanitary condition	Chas. S. Hayden, West Bend Ferd N. Schmutzler, Watertown	$25 and costs $25 and costs
Sept. 16	Werner Scheidegger, Mt. Horeb	Maintaining his separator pipeline in a filthy condition and supply tank not protected	Ferd N. Schmutzler, Watertown	$50 and costs
Sept. 21	A. Mazurine, Racine	Selling ice cream containing less than 14% milk fat	D. Mahlsted, Plymouth D. Mahlsted, Plymouth	$25 and costs $25 and costs
Sept. 21	Chas. Daebel, Almanaris Mineral Spr. Co., Waukesha	Using saccharine in soda water and ginger ale	Geo. Page, Milwaukee	$25 and costs
Sept. 22	J. J. Matenaer, R. 3, West Bend	Sale of adulterated milk, said milk containing less than 8.5 per cent of solids, not fat	H. J. Tulley, Kenosha E. Sourherring, Mayville	$25 and costs $50 and costs
Sept. 22	R. O. Wegge, R. 3, Watertown	Operating an unsanitary milking machine	T. F. Volk, Plymouth	$25 and costs
Sept. 22	Frank Plasil, R. 3, Watertown	For keeping his dairy barn in a very unsanitary condition		
Sept. 22	Hugo Kaufman, R. F. D., Plymouth	Manufacturing adulterated cheese too high in moisture		
Sept. 22	W. O. Stanton, R.F.D. Sheboygan Falls	Manufacturing adulterated cheese too high in moisture		
Sept. 30	Ben Swahofer, West Allis	Selling soda water containing saccharine		
Oct. 1	H. J. Comlon, Kenosha	Selling ice cream containing less than 14% milk fat		
Oct. 1	Peter Beck, Lomira	Operating milking machine in unsanitary condition		
Oct. 2	R. D. Berkett, Oostburg	Offering for sale adulterated cheese		

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1920				
Oct. 5	Bernard Freeze, R. 3, Thorp	Selling milk in very dirty and open seamed cans	L. J. Snyder, Thorp	$25 and costs
Oct. 5	Mike Ravorda, Antigo	Selling adulterated milk	Arthur Goodrich, Antigo	$25 and costs
Oct. 5	Chas. Steinfest, Antigo	Selling adulterated milk	Arthur Goodrich, Antigo	$25 and costs
Oct. 5	James Benson, Monroe	Selling honey in package form, name, address and net contents not stated	W. T. Saucerman, Monroe	Suspended on payment of costs
Oct. 6	Julius Halle, R. 5, Greenwood	For selling unsanitary milk	Oscar Schoengarth, Neillsville	$25 and costs
Oct. 6	W. A. Dreibelbis, Monroe	Selling honey in package form net contents not stated	W. T. Saucerman, Monroe	Suspended on payment of costs
Oct. 6	I. Tochtermann, Monroe	Selling honey in package form which was not labeled	W. T. Saucermann, Monroe	Suspended on payment of costs
Oct. 9	A. Oertel, New Lisbon	Conducting an unsanitary meat market	J. H. Marsh, New Lisbon	$25 and costs
Oct. 9	Charlie Haut, R. 2, Plymouth	Delivering adulterated milk to a cheese factory, watered milk	D. Mahlsted, Plymouth	$25 and costs
Oct. 9	F. H. Riley, New Richmond	Maintaining utensils for handling milk in an unsanitary condition	A. R. Kibby, New Richmond	$25 and costs
Oct. 12	Vandy W. Pipal, Blue River	Maintaining and operating a cheese factory and utensils in an unsanitary condition	Wm. K. Payne, Boscobel	$25 and costs
Oct. 15	Dan Fries, R. F. D., Juda	Adulteration of milk	W. T. Saucerman, Monroe	Suspended upon payment of costs
Oct. 20	Blumenfeld & Feinberg, Baraboo	Exposing bakery goods to dust, flies and other contamination	H. L. Halstead, Baraboo	$20 and costs
Oct. 21	B. Lazzeroni, Lake Geneva	Failure to properly wash and return ice cream cans	R. D. Short, Lake Geneva	$25 and costs
Oct. 25	Gust Firchow, Andrus	Acting as butter maker without first obtaining a license	Henry Vold, Balsam Lake	$25 and costs
Oct. 27	Geo. Geyer & Geo. Walker, Cuba City	Maintaining and operating a cheese factory in an unsanitary condition	A. B. Andrews, Cuba City	$25 and costs
Oct. 27	Christ Bolche, R. 1, Woodman	Engaging in the manufacture of cheese as cheese maker without a license	C. W. Burrow, Lancaster	$25 and costs
Oct. 27	Fred Doubleday, Janesville	Adulteration of milk	H. L. Maxfield, Janesville	$25 and costs
Oct. 29	Eldridge Stanton & Fred Jentz, R. 6, Platteville	Maintaining and operating a cheese factory without a license so to do	C. W. Burrows, Lancaster	$25 and costs
Oct. 29	C. E. Brownell & C. E. Becker, Stitzer	Maintaining and operating a cheese factory in an unsanitary condition	C. W. Burrows, Lancaster	$25 and costs
Oct. 29	Fred Kessler, Janesville	Adulteration of milk	H. L. Maxfield, Janesville	$50 and costs
Oct. 30	Arthur P. Isaac, Fond du Lac, R. 7	Maintaining his cheese factory utensils in an unsanitary condition	R. C. Fairbanks, Fond du Lac	$25 and costs
Nov. 3	A. Schils, Pt. Washington	Making and selling soda water containing saccharine	N. H. Roden, Pt. Washington	$25 and costs
Nov. 5	Henry J. Kohlmann, R. 1, Calvary	Maintaining his cheese factory in an unsanitary condition	R. C. Fairbank, Fond du Lac	$25 and costs

Nov. 5	Havey Bros., Rosendale	Premises filthy from open cesspool 3 steps from intake and factory door, food not protected from flies and noxious odors	R. C. Fairbank, Fond du Lac	$35 and costs
Nov. 6	Fred Greve, Thorp	Selling cheese containing more than 40% of moisture	Frank Fernstahl, Colby	$25 and costs
Nov. 10	C. Wessel, R. F. D., Monroe	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Nov. 12	L. Hartwig, Janesville	Adulterated milk	H. L. Maxfield, Janesville	$25 and costs
Nov. 23	John Rufner, Hartford	Manufacturing for sale adulterated cheese, high moisture brick cheese	C. S. Hayden, West Bend	$25 and costs
Nov. 23	Gottfried Bachman, R. 1, Oshkosh	Maintaining his cheese factory utensils in an unsanitary condition	A. H. Goss, Oshkosh	$25 and costs
Nov. 23	J. J. Hickey, Rhinelander	For maintaining his premises and utensils in an unsanitary condition	F. C. Smith, Rhinelander	Costs of trial imposed
Nov. 23	Jim Reed, Rhinelander	For maintaining premises and utensils in an unsanitary condition	F. C. Smith, Rhinelander	Costs of trial imposed
Nov. 23	Dalton & Leary, Janesville	Returning ice cream cans to manufacturer dirty	H. L. Maxfield, Janesville	$25
Nov. 23	Grebe & Newman, Janesville	Returning ice cream cans dirty	H. L. Maxfield, Janesville	$25
Nov. 24	Wm. Lenz, Janesville	Returning ice cream cans to manufacturer dirty	H. L. Maxfield, Janesville	$25
Nov. 24	James Papalexis, Janesville	Returning ice cream cans to manufacturer dirty	H. L. Maxfield, Janesville	$25
Nov. 24	Allis Razook, Janesville	Returning ice cream cans to manufacturer dirty	H. L. Maxfield, Janesville	$25
Nov. 29	John H. Shew, Princeton	Selling misbranded articles of food	H. E. Megow, Princeton	$25 and costs
Nov. 30	Sparta Bottling Works, Sparta	Use of saccharine in manufacture of pop	C. T. Lamson, Sparta	$25 and costs
Nov. 30	A. Heilmann, Tomah	Exposing bakery goods to contamination	C. T. Lamson, Sparta	$25 and costs
Nov 30	Geo. B. Miller, R. F. D., Hubertus	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	Jos. Markel, R. F. D., So. Germantown	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	John Roskopf, R. 1, So. Germantown	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	Herbert J. Krenser Jr., R. 1, Menomonee Falls	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	Henry Schilling, R. 2, Menomonee Falls	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	Henry J. Hauser, R. 1, So. Germantown	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	Jake Schmitt, R. 2, Menomonee Falls	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	Fine remitted on payment of costs
Nov. 30	Wm. Liebau, R. 2, Menomonee Falls	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	John Krenser, R.F.D., So. Germantown	For having in possession and offering for sale unsanitary milk	James E. Thomas, Waukesha	$25 and costs
Nov. 30	Flambau Ch. Co., Holcomb	For selling or offering for sale adulterated cheese	G. W. Williams, Ladysmith	$25 and costs
Dec. 1	Gottfried Bachman, R. 1, Oshkosh	Manufacturing for sale adulterated American cheese with 44.55% moisture	A. H. Goss, Oshkosh	$25 and costs
Dec. 2	Ed. Easler, R. F. D., Monroe	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Dec. 2	A. W. Guetzkow, Sauk City	Use of benzoate of soda in pop	Adolph Ambro, Baraboo	$25 and costs

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1920				
Dec. 2	F. G. Kessler, Baraboo	Use of saccharine in pop	Adolph Ambro, Baraboo	$25 and costs
Dec. 3	J. Kaufman, Madison	Selling storage eggs for fresh eggs	A. C. Hoppman, Madison	Suspended on payment of costs
Dec. 3	F. Sette, Iron Ridge	Operating his cheese factory in an unsanitary and unfit condition	C. S. Hayden, West Bend	$50 and costs
Dec. 6	Jos. Kastner, Milwaukee	Keeping food in cold storage for a period of more than 12 months without a permit	Geo. E. Page, Milwaukee	$25 and costs
Dec. 7	Wm. Wunnicke, Tavera	Falsely manipulating the Babcock test at a creamery	S. G. Curtis, Richland Ctr.	$25 and costs
Dec. 8	Rhinelander Cry. & Prod. Co., Rhinelander	Selling adulterated butter	C. F. Smith, Rhinelander	$35 and costs
Dec. 8	Rhinelander Cry. & Prod. Co., Rhinelander	For selling adulterated butter	C. F. Smith, Rhinelander	$35 and costs
Dec. 10	Max Gronik, Milwaukee, Badger State Creamery	Keeping liquid eggs and whey butter in cold storage for more than 12 months without permit	Geo. E. Page, Milwaukee	$500 and costs
Dec. 10	Martin L. Falk, R. 1, Black Creek	Operating a cheese factory in an unsanitary condition	A. M. Spencer, Appleton	$50 and costs
Dec. 13	Clark McCutcheon, Spring Green	Manufacturing for sale or exchange an adulterated article of food, to-wit American cheese	H. C. Purdy, Spring Green	$25 and costs
Dec. 15	Rhinelander Cry .Co., Rhinelander	Manufacturing adulterated butter	C. F. Smith, Rhinelander	$35 and costs
Dec. 15	W. F. Siepert, Montello	Conducting an unsanitary meat market	F. J. Walsh, Montello	$25 and costs
Dec. 20	George German, Campbellsport	Manufacture of high moisture cheese	R. C. Fairbank, Fond du Lac	$25 and costs
Dec. 21	Ed. Bartelt, R. 3, West Bend	Manufacture of high moisture cheese	C. S. Hayden, West Bend	$25 and costs
Dec. 21	Wm. De Munck, R. 1, Calvary	Manufacture of high moisture American cheese	R. C. Fairbank, Fond du Lac	$25 and costs
Dec. 21	B. M. Codman, Sparta	Misbranding and adulterating vanilla	C. L. Lamson, Sparta	$25 and costs
Dec. 22	Edward Marsicek, Kewaunee	Unsanitary cheese factory and utensils	Anton Schauer, Kewaunee	$25 and costs
Dec. 22	E. J. Roll, Mayville	Manufacture of high moisture brick cheese	J. D. Lyons, Beaver Dam	$25 and costs
1921				
Jan. 3	Chester Peterson, Blue River	Manufacturing cheese containing more than 40% of moisture	S. G. Curtis, Richland Ctr.	$25 and costs
Jan. 5	Herman Koepsel, Mayville	Manufacture of high moisture brick cheese	J. D. Lyons, Beaver Dam	$25 and costs
Jan. 6	Joseph A. Bauer, Spring Green	Manufacturing cheese containing more than 40% moisture	Adolph Andro, Baraboo	$25 and costs
Jan. 10	Christian Schlicke, Burnett	For the manufacture of adulterated cheese	J. D. Lyons, Beaver Dam	Suspended on payment of costs
Jan. 13	Andrew Floo, Eland	Selling adulterated milk	H. O. Buth, Shawano	$25 and costs
Jan. 13	Mike Hulehan, Eland	Selling adulterated milk	H. O. Buth, Shawano	$25 and costs
Jan. 14	M. J. Power Company, Madison	Operating a cold storage without a license and not properly marking eggs in storage	A. C. Hoppman, Madison	$50 and costs
Jan. 15	Henry Maedke, Algoma	High moisture cheese	Joseph Muenck, Algoma	$25 and costs
Jan. 19	William Fredrich, Watertown	For sale of cream containing less than 18% fat	Fred Schuntzler, Watertown	$25 and costs

Jan.	19	Wm. Fassbender, Richfield	For having in possession with intent to sell cheese containing more than 42% moisture	C. S. Hayden, West Bend	$25 and costs
				Henry McBain, Eau Claire	$25 and costs
Jan.	20	S. B. Gooder, Eau Claire	Sale of unsanitary milk (milk from dirty cans)		
Jan.	21	Blodgett & Sons Co., Marshfield	Operating a cold storage without a license and not properly marking goods therein		$1000 and costs
Jan.	25	N. P. Strobel, Campbellsport	For the manufacture and sale of cheese containing more than 40% of moisture	R. C. Fairbanks, Fond du Lac	$25 and costs
				Geo. W. Page, Milwaukee	$25 and costs
Jan.	25	Joseph Kody, So. Milwaukee	For the sale of adulterated milk	H. L. Halstead, Baraboo	$25 and costs
Jan.	27	Ray Montanye, Baraboo	Selling adulterated milk		
Jan.	27	Carl Radtke, Stratford	Maintaining premises and utensils of cheese factory in an unsanitary condition	Louis Marchetti, Wausau	$25 and costs
				F. W. Jenkins, Chippewa Falls	$25 and costs
Jan.	27	S. G. Smith, Chippewa Falls	Did sell and offer for sale unsanitary milk	Aug. Backus, Milwaukee	Suspended upon payment of costs
Jan.	28	Jos. Kastner, Milwaukee	Keeping food in cold storage more than one year	Louis Marchetti, Wausau	$25 and costs
Jan.	28	Anton Procheron, Wausau	Selling adulterated milk		
Jan.	28	Arthur Braash, Oshkosh	Manufacture for sale cheese containing more than 40% of moisture	A. H. Goss, Oshkosh	$25 and costs
Feb.	1	Henry Bolli, Beaver Dam	Manufacture of high moisture cheese containing more than 42%	W. M. Clifford, Juneau	$25 and costs
				F. S. Parker, Superior	$25 and costs
Feb.	1	Louis Hansen, Superior	Selling and offering for sale adulterated cream	F. S. Parker, Superior	$25 and costs
Feb.	2	J. C. Levings, Superior	Did sell and offer for sale adulterated cream	F. S. Parker, Superior	$25 and costs
Feb.	2	C. C. Simons, Superior	Did sell and offer for sale adulterated cream	Chas. F. Smith, Rhinelander	$25 and costs
Feb.	2	Norman Sargent, Rhinelander	Selling unsanitary milk	Chas. F. Smith, Rhinelander	$75 and costs
Feb.	2	J. J. Hickey, Rhinelander	Selling adulterated milk	F. S. Parker, Superior	$25 and costs
Feb.	3	Christian P. Christiansen, Superior	Did sell and offer for sale adulterated butter	F. S. Parker, Superior	$25 and costs
Feb.	3	Ed. O. Hoven, Superior	Did sell and offer for sale adulterated cream		
Feb.	4	John Saunders, Superior	Did by himself, his servant or agent sell adulterated milk	F. S. Parker, Superior	$25 and costs
Feb.	7	Alex Dahlin, Wentworth	Did by himself, his servant or agent sell adulterated milk	F. S. Parker, Superior	$25 and costs
				Roger Ryan, Shell Lake	$25 and costs
Feb.	9	Henry Donnatell, Spooner	Did sell and offer for sale adulterated cream	F. S. Parker, Superior	$25 and costs
Feb.	9	Chas. Russel, Superior	Did sell and offer for sale adulterated cream	Roger Ryan, Shell Lake	$25 and costs
Feb.	9	Henry Donnatell, Spooner	Did sell and offer for sale unsanitary milk and cream	R. E. Mitchel, Portage	$25 and costs
Feb.	9	S. M. Wahl, Columbus	Manufacturing and selling adulterated butter		
Feb.	15	H. E. Briggs, Lone Rock	Failure to return ice cream cans to manufacturer within 72 hours	H. B. Shannon, Lone Rock	$25 and costs
				F. W. Jenkins, Chippewa Falls	$25 and costs
Feb.	18	B. Lavalle, Chippewa Falls	For selling adulterated cream		
Feb.	21	Jos. Smith, Milwaukee	Selling and offering for sale adulterated food (rotten eggs)	Geo. E. Page, Milwaukee	$100 and costs
				Griff Thomas, Hurley	Judgment stayed
Feb.	26	A. J. Becker, Hurley	For selling adulterated cream		
Feb.	28	Joseph Habermacher, Fisk	For the manufacture of American cheese containing more than 40% moisture	Fred Beglinger, Oshkosh	$25 and costs
Feb.	28	Walter Shambau, Two Rivers	Short weight on package of beans represented 9 lbs. was only 8 lbs.	A. H. Schmidt, Two Rivers	$10 and costs
Mar.	1	Erwin Lickinger, Whitelaw	Selling 44 lb. 10 oz. of pork and representing it as 47 lbs.	A. H. Schmidt, Manitowoc	$10 and costs
Mar.	1	Frank Bauer, R. 1, Kewaunee	Selling 14 lbs. of meat and representing it as 15 lbs.	A. H. Schmidt, Manitowoc	$10 and costs

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1921				
Mar. 7	Jos. Model, Milwaukee	Delivering adulterated food (rotten eggs)	Geo. E. Page, Milwaukee	$50 and costs
Mar. 11	Ole. Wahl, Superior	Did as agent or servant manufacture and sell adulterated butter, below legal standard in fat	F. S. Parker, Superior	$25 and costs
Mar. 15	David Gobeli, Bruce	Offering for sale brick cheese containing more than 42% moisture	G. H. Williams, Ladysmith	$25 and costs
Mar. 15	Paul A. Yeager, Ladysmith	Offering for sale American cheese containing more than 40% moisture	G. H. Williams, Ladysmith	$25 and costs
Mar. 17	Fairmont Cry., Green Bay	Not properly marking butter and eggs with dates of cold storage	N. Monahan, Green Bay	$175.
Mar. 22	Max Gronik, Milwaukee	Transferring cold storage goods from one whse. to another without permit	Aug. Backus, Milwaukee	$750 and costs
Mar. 23	R. A. Converse, Sparta	Selling short weight on coal	C. E. Lamson, Sparta	$25 and costs
Mar. 23	Jos. Smith, Milwaukee	Selling adulterated food, rotten eggs	Aug. Backus, Milwaukee	$150 and costs
Mar. 23	Jos. Zeifert, R. 2, Oconto	Selling unsanitary milk	J. A. Donlevy, Oconto	$25 and costs
Mar. 28	B. W. Thew, Oshkosh	For sale of adulterated cream	A. H. Goss, Oshkosh	$25 and costs
Mar. 28	M. M. Chase, Oshkosh	For the sale of adulterated cream	A. H. Goss, Oshkosh	$25 and costs
Mar. 28	D. R. Van Buren, Oshkosh	For the sale of adulterated cream	A. H. Goss, Oshkosh	$50 and costs
Mar. 30	Frank Leonard, Oshkosh	For the sale of milk handled in unsanitary utensils	A. H. Goss, Oshkosh	$25 and costs
Mar. 30	H. W. Hauser, La Crosse	Sale of adulterated cream	John Brindley, La Crosse	$25 and costs
Mar. 30	Theo. Neis, Beaver Dam	Sale of adulterated milk containing less than 3% of fat	W. M. Clifford, Juneau	$25 and costs
Apr. 1	Louis Schroeder, Merrill	Selling milk which was adulterated in that it was skimmed	M. C. Porter, Merrill	$25 and costs
Apr. 1	Wm. Demmin, R. 7, Merrill	Selling milk which was adulterated in that it was watered	M. C. Porter, Merrill	$25 and costs
Apr. 6	R. W. Robeson, Stanley	Having in possession unclean ice cream cans over time limit	F. W. Jenkins, Chippewa Falls	$25 and costs. Fine remitted by court, costs paid
Apr. 8	V. D. Merriman, Owen	For having in possession unclean ice cream cans over time limit	O. W. Schoengarth, Neillsville	$25 and costs
Apr. 11	Frank Sobeck, Fall River	Offering for sale unsanitary milk	Robert Mitchell, Portage	$25 and costs
Apr. 13	W. Edwards, Fall River	Offering for sale unsanitary milk	Robert Mitchell, Portage	$25 and costs
Apr. 14	Edward F. Moe, Superior	Manufacturing and selling adulterated butter below legal standard in butter fat	F. S. Parker, Superior	$25 and costs
Apr. 15	Robert Braun, Monroe	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Apr. 18	A. W. Zilmer, Monroe	Exposing pastry and other bakery products to dust, dirt and contamination	W. T. Saucerman, Monroe	$20 and costs
Apr. 20	Fred C. Justman, Wisconsin Rapids	Selling American cheese containing more than 40% moisture	C. A. Boerman, Wisconsin Rapids	$25 and costs

Apr. 21	Berthiume Bros., Superior	Offering for sale adulterated butter	F. S. Parker, Superior	$25 and costs
Apr. 26	John Attenberger, Fond du Lac	For the sale of milk in filthy milk cans	R. C. Fairbank, Fond du Lac	Fine remitted paid costs $5.00
Apr. 26	Geo. Scott, Fond du Lac	For the sale of milk in filthy cans	R. C. Fairbank, Fond du Lac	Just costs $5.00
Apr. 28	Chas. Trudean, Oconto	Operating meat market under unsanitary conditions	J. A. Donlevy, Oconto	$25 and costs
Apr. 29	G. A. Mueller, Marinette	Operating a bakery under unsanitary conditions	F. N. Bernardi, Marinette	$20 and costs
Apr. 29	Dan Ennis, Beloit	Manufacturing food under unsanitary conditions	J. B. Clark, Beloit	$100 and costs
Apr. 30	A. F. Schwahn & Sons Co., Eau Claire	Keeping food in cold storage for more than one year without permit	Geo. E. Page, Milwaukee	$100 and costs
Apr. 30	Paul Ashman, R. 3, Appleton	Sale of adulterated milk	Albert M. Spencer, Appleton	$5 and costs
May 2	Ben Lepien, Hartford	Sale of adulterated milk	C. S. Hayden, West Bend	$25 and costs
May 4	Dan Holton, Portage	Selling adulterated ice cream	F. W. Kiefer, Portage	$25 and costs
May 4	J. A. Wolfram, Watertown	Selling adulterated milk	M. H. Clifford, Juneau	$25 and costs
May 5	Mike Simon, Fond du Lac	Selling milk in unsanitary cans	R. C. Fairbank, Fond du Lac	Just costs $7.25
May 5	Rudolph Rusch, R. 4, Granton	Manufacture for sale American cheese with more than 40% of moisture	O. W. Schoengarth, Neillsville	Costs $14.40
May 9	Nottlemann Bros., Oshkosh	Sale of adulterated cream	A. H. Goss, Oshkosh	$50 and costs
May 10	Stanley W. Koten, Shawano	Overreading Babcock test in determining the per cent of butter fat in milk	H. O. Buth, Shawano	$25 and costs
May 16	Fisher Fish Co., Green Bay	For selling adulterated fish	N. J. Monahan, Green Bay	$25 and costs. Fine remitted, paid only costs
May 17	Julius Lange, Owen	Making cheese without first obtaining a license	Frank Firnstahl, Colby	$25 and costs
May 18	Fred Greve, Thorp	Selling cheese containing more than 40% of moisture	Frank Firnstahl, Colby	$50 and costs
May 21	G. C. Meyer, Stratford	Selling cheese containing more than 40% of moisture	Louis Marchetti, Wausau	$25 and costs
May 25	F. E. Green, Ft. Atkinson	Selling less than represented to-wit 3480 lbs. of coke and representing it as 4270 lbs.	Giles Hibbard, Ft. Atkinson	Payment of costs $10.30 and refund Mr. Pottinger for full amount of shortage.
June 2	Fred Muhs, Sheboygan	Not operating a bakery in compliance with law	H. O. Buth, Shawano	$25 and costs
June 2	Walter Suehring, R. 3, Tigerton	Making or acting as cheese maker without a permit or license	H. O. Buth, Shawano	$25 and costs
June 10	Jacob Hamm, R. 1, Curtiss	Manufacturing for sale and selling American cheese containing more than 38% moisture	M. W. Ryan, Medford	$25 and costs
June 11	Henry Aschenbrenner, Stratford	Selling adulterated milk in that it was skimmed	Louis Marchetti, Wausau	$25 and costs
June 13	Victor Dahl, Plymouth	Using false measuring device which had been condemned for repairs	Adam Trester, Sheboygan	$5 and costs
June 16	Chas. Doepke, Waterloo	Manufacturing for sale cheese containing more than the permitted amount of moisture	Fred Schmutzler, Watertown	$25 and costs
June 18	John Lee, R. 3, Denmark	Selling adulterated milk	N. J. Monahan, Green Bay	$25 and costs
June 20	Peter Reinke, Elmwood	Selling adulterated grape juice containing sulphur dioxide	Judge Schuler, Elmwood	$25 and costs
June 21	J. P. Ammerman, West Lima	Operating a cheese factory without a license	S. G. Curtis, Richland Center	$25 and costs
June 24	Fred Lemberd, Glenbeulah	Maintaining his milking machine and dairy in an unsanitary condition	Anton Trester, Sheboygan	$25 and costs
June 24	Fred Quinn, Plymouth	Manufacturing food for man under unsanitary condition	Anton Trester, Sheboygan	$25 and costs
June 24	Chas. Lindner, Platteville	Selling cheese with more than 38% moisture	C. W. Burrows, Lancaster	$25 and costs

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1921				
June 29	C. E. Brewer, Blue River	Maintaining cheese factory utensils in an unsanitary condition	S. G. Curtis, Richland Center	$25 and costs
July 1	G. C. Sampe, Curtiss	Manufacturing for sale, offering for sale and selling adulterated cheese, to-wit cheese containing more than 40% of moisture	James O'Neill, Neillsville	$25 and costs
July 1	D. E. Norleen, Abbotsford	Manufacturing for sale and selling adulterated cheese, towit cheese containing more than 40% of moisture	James O'Neill, Neillsville	$25 and costs
July 5	Ludwig Kuhn, Neillsville	Manufacturing and selling adulterated cheese, towit cheese containing more than 40% moisture	R. E. Andrews, Marshfield	$25 and costs
July 9	Aug. Keitel, Fredonia	Using false apparatus, towit stock scale that had been condemned	A. H. Kuhl, Pt. Washington	$25 and costs
July 12	Jacob Rothenbuehler, Prairie Farm	Manufacturing for sale and selling cheese containing more than 38% moisture	C. A. Taylor, Barron	$25 and costs
July 15	Fred Giese, R. 1, Seymour	Making cheese without license	N. J. Monahan, Green Bay	$25 and costs
July 15	Louis Giese, R. 8, Green Bay	Premises and utensils unsanitary	N. J. Monahan, Green Bay	$25 and costs
July 19	Central Lunch, Janesville	Selling adulterated milk less than 3%	H. S. Maxfield, Janesville	$25 and costs
July 26	Henry Kunze, R. 2, Wausau	Delivering milk in dirty cans	Louis Marchetti, Wausau	$25 and costs
July 26	Matt Lattyak, R. 2, Wausau	Delivering milk in dirty cans	Louis Marchetti, Wausau	$25 and costs
July 26	A. Beilke, R. 2, Wausau	Delivering unsanitary and dirty milk	Louis Marchetti, Wausau	$25 and costs
July 26	Carl Hahn, R. 2, Wausau	Delivering milk in dirty cans	Louis Marchetti, Wausau	$25 and costs
July 26	Paul Dumdie, R. 2, Wausau	Delivering milk in dirty cans	Louis Marchetti, Wausau	$25 and costs
July 28	Julius Erdman, Clintonville	Delivering milk in dirty and open seamed cans	J. W. Patterson, Clintonville	$25 and costs
July 28	Ferd Larson, Clintonville	Delivering milk in dirty and open seamed cans	J. W. Patterson, Clintonville	$25 and costs
Aug. 4	Fred Guillaume, Edgar	Delivering adulterated milk to the Cloverleaf Cheese Factory, towit milk below standard in milk fat	Louis Marchetti, Wausau	$25 and costs
Aug. 15	A. J. McVoy, R. 1, Eland	Offering for sale milk transported in dirty, unsanitary cans	Louis Marchetti, Wausau	$25 and costs
Aug. 15	Wm. C. Plueger, R. 1, Eland	Offering for sale milk transported in dirty cans	Louis Marchetti, Wausau	$25 and costs
Aug. 16	J. Schueltz, Neillsville	Delivering unsanitary milk to a cheese factory, towit milk delivered in unclean cans	James O'Neill, Neillsville	$25 and costs
Aug. 17	Henry Bolli, R. 1, Beaver Dam	Manufacturing cheese with unsanitary utensils	E. A. Clifford, Juneau	$25 and costs
Aug. 17	Jos. Baiebe, Lomira	Delivering and offering for sale to a cheese factory adulterated milk	Chas. Lentz, Mayville	$25 and costs
Aug. 23	Edw. Marsicek, Kewaunee	Unsanitary premises and utensils	L. R. La Plant, Kewaunee	$50 and costs
Aug. 24	Jac. Thielman, Chilton	Unsanitary utensils	Geo. D. Breed, Chilton	$25 and costs
Aug. 24	Ralph Randall, Highland	Premises and utensils maintained in unsanitary condition	J. V. Rogers	$25 and costs

Aug. 26	W. E. Franket, Manitowoc	Unlabeled candy—without manufacturers' name or the net weight	A. H. Schmidt, Manitowoc	Fine remitted costs paid
Aug. 26	Bert Mitchell, R. 1, Troy Center	Sale of adulterated milk	A. R. Jollery, Whitewater	$25 and costs
Aug. 28	Chas. Schwanke, Chilton	Maintaining his factory and utensils in an unsanitary condition	Geo. D. Breed, Chilton	$25 and costs
Aug. 29	Elvin T. Winkel, Sheboygan Falls	Maintaining his milking machine and milk house in an unsanitary condition	Harry Wolters, Sheboygan	$25 and costs
Aug. 29	Mathew Winkle, Elkhart Lake	Maintaining his cheese factory in an unsanitary condition	Harry Wolters, Sheboygan	$25 and costs
Aug. 29	Edw. P. Pohl, Elkhart Lake	Maintaining his cheese factory and utensils in an unsanitary condition	Harry Wolters, Sheboygan	$25 and costs
Aug. 30	Chas. J. Schwanke, R. 6, Chilton	Unsanitary premises and utensils	Geo. D. Breed, Chilton	$25 and costs
Sept. 2	T. M. Olson, Strum	Selling milk from cow having running sore	Frank M. Larson, Whitehall	$25 and costs
Sept. 3	Sig Stevenson, R. 8, Merrill	Delivering milk in dirty cans	M. C. Porter, Merrill	Sentence suspended, costs paid
Sept. 3	E. R. Guth, R. 6, Merrill	Maintaining cheese factory and premises in unclean filthy condition	M. C. Porter, Merrill	$25 and costs
Sept. 3	Erwin Gratzmacher, R. 6, Merrill	Delivering milk in dirty and open seamed cans	M. C. Porter, Merrill	Sentence suspended, costs paid
Sept. 6	H. R. Wilhelmsen, Sparta	Sale of unsanitary food	C. T. Lamson, Sparta	$25 and costs
Sept. 13	Wm. A. Buerger, Wisconsin Rapids	Unsanitary conditions in grocery store	W. H. Getts, Wisconsin Rapids	$25 and costs
Sept. 13	H. A. Kufahl, Marathon	Maintaining utensils used in handling by products of milk in unclean and unsanitary condition	Louis Marchetti, Wausau	$25 and costs
Sept. 13	Fred Lemke, Marathon	Maintaining premises and utensils of cheese factory used in handling milk, in unsanitary condition	Louis Marchetti, Wausau	$25 and costs
Sept. 13	R. W. Olson, Browntown	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs. Entered plea of nolo contendere
Sept. 15	Jos. Reif & Arth Spitz, Milwaukee	Selling misbranded articles of food, candy boxes no marked with net contents	Geo. E. Page, Milwaukee	$25 and costs
Sept. 19	Geo. W. Gjermundson, Tigerton	Maintaining premises and utensils in an unclean and unsanitary condition	H. O. Buth, Shawano	$25 and costs
Sept. 19	T. J. Gjermundson, Shepley	Maintaining premises and utensils in an unsanitary condition	H. O. Buth, Shawano	$25 and costs
Sept. 20	Syl. Fredricks, Woodworth	Manufacturing butter with unsanitary utensils	James E. Tully, Kenosha	$25 and costs
Sept. 20	Mike Possley, Fredonia	Offering for sale adulterated cheese	A. H. Kuhl, Pt. Washington	$25 and costs
Sept. 20	Aloys Riendl, Tigerton	Maintaining his cheese factory in an unsanitary condition	Henry Nedden, Tigerton	$25 and costs
Sept. 21	B. Ruschka, R. 1, Neosha	Offering for sale unsanitary milk	Chas. Lentz, Mayville	$25 and costs
Sept. 24	Hans Manser, Clintonville	Selling milk in dirty, rusty and open seamed cans	J. W. Patterson, Clintonville	$25 and costs
Sept. 24	Chas. Yeager, Clintonville	Selling milk in dirty, rusty and open seamed cans	J. W. Patterson, Clintonville	$25 and costs
Sept. 24	Louis Lichtenberg, Clintonville	Selling milk in dirty, rusty and open seamed cans	J. W. Patterson, Clintonville	$25 and costs
Sept. 24	John Hoffman, Clintonville	Selling milk in dirty, rusty and open seamed cans	J. W. Patterson, Clintonville	$25 and costs
Sept. 26	Reinhold Draheim, R. 3, Waupaca	Maintaining utensils and premises in an unsanitary condition for producing milk	J. W. Patterson, Clintonville	$25 and costs
Sept. 27	John Sauter, Brodhead	Adulteration of milk	M. B. Scott, Waupaca	$25 and costs
Sept. 30	Wm. Worthman, La Crosse	Sale of watered milk	W. T. Saucerman, Monroe	$25 and costs
Oct. 5	D. & L. Sweet Shop, Janesville	Selling adulterated milk less than 3% of milk fat	John Brindley, La Crosse	$25 and costs.
				Entered plea of nolo contendere

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1921				
Oct. 5	Albert Schneiter, Cambria	Maintaining his factory and utensils in an unsanitary condition	Fred Engelbracht, Jr., Berlin	$25 and costs
Oct. 10	F. C. Burroughs, Wilmot	Manufacturing butter with unsanitary utensils	Jas. E. Tully, Kenosha	$25 and costs
Oct. 11	Henry Noll, Brodhead	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Oct. 11	Aug. Neuneman, Brodhead	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Oct. 11	Art Mavens, Brodhead	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Oct. 15	Yahr & Lange Drug Co., Milwaukee	Selling canning compound containing boric acid	Geo. E. Page, Milwaukee	$50 and costs
Oct. 15	Fred Pollnow, Neillsville	Selling adulterated cheese, that is cheese containing more than 38% moisture	R. E. Andrew, Neillsville	$25 and costs
Oct. 22	H. Lenehan, Reeseville	Delivering unsanitary milk to a cheese factory	E. A. Clifford, Juneau	$25 and costs
Oct. 28	Wm. Lucht, Spencer	Manufacturing and selling adulterated American cheese, towit cheese containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
Oct. 28	John Froehlich, Marshfield	Manufacturing and selling adulterated cheese, towit cheese containing more than 38% moisture	R. E. Andrews, Marshfield	$25 and costs
Oct. 29	Fred Ogi, Junction City	Maintaining cheese factory utensils in unclean, filthy and noxious condition	G. Parks, Stevens Pt	$25 and costs
Oct. 29	Elmer W. Georges, Neillsville	Manufacturing and selling adulterated cheese, towit American cheese containing more than 38% moisture	R. E. Andrews, Marshfield	$25 and costs
Nov. 3	Lawrence Eggers, Rosendale	Manufacturing for sale American cheese containing more than 38% of moisture	H. M. Fellenz, Fond du Lac	$25 and costs
Nov. 3	Albert M. Kohlmann, Fond du Lac	Manufacturing for sale American cheese containing more than 38% of moisture	H. M. Fellenz, Fond du Lac	$25 and costs
Nov. 8	Spence McCord Drug Co., La Crosse	Selling canning compound containing boric acid	J. Brindley, La Crosse	$25 and costs
Nov. 8	Sisson, Seielstad, Haugen,Co., LaCrosse	Selling canning compound containing boric acid	J. Brindley, La Crosse	$25 and costs
Nov. 8	La Crosse Drug Co., La Crosse	Selling canning compound containing boric acid	J. Brindley, La Crosse	$25 and costs
Nov. 8	Earnest Kaufmann, Fond du Lac	Manufacturing American cheese containing more than 38% of moisture	H. M. Fellenz, Fond du Lac	$25 and costs
Nov. 8	J. W. Trojan, W. Bloomfield	Selling cheese containing more than 38% of moisture	Albert M. Spencer, Appleton	$25 and costs
Nov. 9	Clarence Mann, Baileys Harbor	Maintaining premises and utensils in an unsanitary condition	Richard Neolk, Baileys Harbor	$25 and costs
Nov. 12	Jos. Tindra, R. 3, Sawyer	Using equipment not sealed within a year and delivering short measure	H. H. Reynolds, Sturgeon Bay	$5 and costs
Nov. 16	Carl C. Hanson, Dorchester	Manufacturing cheese as a cheese maker without having a permit or license	Louis Marchetti, Wausau	Sentence suspended, costs paid
Nov. 25	E. J. Adams, Vesper	Manufacturing and selling adulterated Cheddar cheese containing more than 38% of moisture	Louis Marchetti, Wausau	$25 and costs

Nov. 25	A. E. Lau, Brillion	Manufacturing for sale American cheese containing more than 38% of moisture	Geo. D. Breed, Chilton — $25 and costs
Nov. 25	Edward Michels, Brillion	Manufacturing American cheese containing more than 38% of moisture	Geo. D. Breed, Chilton — $25 and costs
Nov. 26	Jos. Schefsick, Dorchester	Selling Cheddar cheese containing more than 38% of moisture	R. E. Andrew, Marshfield — $25 and costs
Nov. 26	Leonard Heibel, Withee	Selling Cheddar cheese containing more than 38% of moisture	R. E. Andrew, Marshfield — $25 and costs
Nov. 29	A. H. Bley, Belgium	Manufacturing adulterated cheese	A. H. Kuhl, Pt. Washington — $25 and costs
Dec. 7	Campia Ch. & Btr, Co., Rice Lake	Selling Cheddar cheese containing more than 38% of moisture	R. E. Andews, Marshfield — $25 and costs
Dec. 9	Ring Coop. Ch. & Btr. Co., Pickets	Maintaining utensils in an unsanitary condition	H. H. Goss, Oshkosh — $25 and costs
Dec. 10	Rudolph Stock, Colby	Selling American cheese containing more than 38% of moisture	R. E. Andrews, Marshfield — $25 and costs
Dec. 12	G. G. Krueger, New Holstein	Manufacturing American cheese containing more than 38% of moisture	Geo. D. Breed, Chilton — $25 and costs
Dec. 14	Edgar Becker, Campbellsport	Manufacturing American cheese containing more than 38% of moisture	H. M. Fellenz, Fond du Lac — $25 and costs
Dec. 14	Alfred Antoni, Belgium	Manufacturing adulterated cheese	A. H. Kuhl, Pt. Washington — $25 and costs
Dec. 15	John Bernstein, Rhinelander	Selling adulterated milk that was below the legal standard for butter fat	H. L. Reeves, Rhinelander — $25 and costs
Dec. 15	Jos. Bradley, R. 3, Fredonia	Selling adulterated milk to a condensary	Chas. Hyden, West Bend — $25 and costs
Dec. 15	Clarence Olson, Colby	Selling American cheese containing more than 38% of moisture	James O'Neill, Neillsville — $25 and costs
Dec. 15	Louis Schorer, Curtiss	Selling American cheese containing more than 38% of moisture	James O'Neill, Neillsville — $25 and costs
Dec. 15	John Tesmer, Colby	Selling American cheese containing more than 38% of moisture	James O'Neill, Neillsville — $25 and costs
Dec. 15	Albert Bahn, Colby	Selling American cheese containing more than 38% of moisture	James O'Neill, Neillsville — $25 and costs
Dec. 15	Wm. Laabs, Greenwood	Selling American cheese containing more than 38% of moisture	James O'Neill, Neillsville — $25 and costs
Dec. 16	Geo. Fleischman, Templeton	Manufacturing adulterated cheese	J. E. Thomas, Waukesha — $25 and costs
Dec. 16	Geo. Hunke, Greenwood	Selling brick cheese containing more than 42% of moisture	R. E. Andrews, Marshfield — $25 and costs
Dec. 17	D. L. Donovan, Random Lake	Manufacturing and selling American cheese containmore than 38% of moisture	Adam Trester, Sheboygan — $25 and costs
Dec. 19	Woodland Dairy Co., Unity	Selling cheese containing more than 38% of moisture	R. E. Andrews, Marshfield — $25 and costs
Dec. 21	H. J. Mechelke, Birnamwood	Selling American cheese containing more than 38% of moisture	H. O. Buth, Shawano — $25 and costs
Dec. 21	R. O. Freund, Hilbert	Manufacturing for sale American cheese containing more than 38% of moisture	Geo. D. Breed, Chilton — $25 and costs
Dec. 22	Bernard Draeger, Hortonville	Manufacturing American cheese containing more than 38% of moisture	Albert M. Stencer, Appleton — $25 and costs
Dec. 23	John Van Buskirk, Oconomowoc	Manufacturing and offering for sale adulterated cheese	Fred Schmetzler, Watertown — $25 and costs

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1921				
Dec. 23	W. Frederick, Watertown	Selling adulterated milk less than 3% butter fat	A. Cavanaugh, Watertown	$25 and costs
Dec. 23	W. Vehlow, Watertown	Selling cream below standard in fat	A. Cavanaugh, Watertown	$25 and costs
Dec. 25	E. C. Woepse, Belgium	Manufacturing for sale American cheese containing more than 38% moisture	A. H. Kuhl, Pt. Washington	$25 and costs
Dec. 26	August Larson, Nichols	Manufacturing American cheese containing more than 38% moisture	Albert M. Spencer, Appleton	$25 and costs
Dec. 28	J. J. Hickey, Rhinelander	Selling adulterated milk that was below the legal standard for butter fat	H. L. Reeves, Rhinelander	$25 and costs
Dec. 28	John Dougherty, Avoca	Manufacturing American cheese containing more than 38% of moisture	T. H. Arthur, Dodgeville	$25 and costs
Dec. 28	David Struensee, Allenville	Manufacturing for sale American cheese containing more than 38% of moisture	H. H. Goss, Oshkosh	$25 and costs
Dec. 28	E. Nettleton, Stevens Pt	Selling and delivering adulterated milk, towit milk from which part of fat was removed	G. Parks, Stevens Point	$25 and costs
Dec. 30	A. J. Reiss, Cascade	Manufacturing for sale American cheese containing more than 38% of moisture	Adam Trester, Sheboygan	$25 and costs
Dec. 31	Gear & Son, Menasha	Selling adulterated milk	H. H. Goss, Oshkosh	$50 and costs
1922				
Jan. 3	Otto Fick, Campbellsport	Manufacturing for sale American cheese containing more than 38% of moisture	H. M. Fellenz, Fond du Lac	$25 and costs
Jan. 3	Oswald Reitz, Fond du Lac	Manufacturing for sale American cheese containing more than 38% moisture	H. M. Fellenz, Fond du Lac	$25 and costs
Jan. 4	A. R. Shomshak, Clayton	Manufacturing for sale cheese containing more than 38% of moisture	T. B. Kinsley, Barron	$25 and costs
Jan. 4	H. J. Kohlmann, Calvary	Manufacturing for sale cheese containing more than 38% of moisture	H. M. Fellenz, Fond du Lac	$25 and costs
Jan. 5	Earnest Tracy, Plymouth	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan. 5	W. A. Scott, Waldo	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan. 6	John Gosse, Sheboygan	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan. 6	E. H. Fischer, Random Lake	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan. 6	John Steckart Sons Co., De Pere	Misbranding of pail lard	N. J. Monahan, Green Bay	$25 and costs
Jan. 6	Richard Birkett, Oostburg	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs

Jan.	6	August Dedow, R. 2, Sheboygan	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan.	6	Walter Seefeldt, Plymouth	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan.	6	J. J. Mason & Co., Sparta	Exposing for sale a lesser quantity of sugar than is represented	C. T. Lamson, Sparta	$5 and costs
Jan.	7	John Boehnlein, Auburndale	Selling American cheese containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
Jan.	7	Chas. Humphrey, Random Lake	Manufacturig for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan.	7	James Lord, Oostburg	Manufacturing for sale American cheese containing more than 38% of moisture	Harry Wolters, Sheboygan	$25 and costs
Jan.	7	John Habhegger Co., Watertown	Selling adulterated cheese	E. A. Clifford, Juneau	$25 and costs
Jan.	10	Carl Zuberbuhler, Iron Ridge	Manufacturing adulterated cheese	Chas. Lentz, Mayville	$25 and costs
Jan.	10	F. Behnke, Hartford	Selling unsanitary milk to a cheese factory	Chas. Lentz, Mayville	$25 and costs
Jan.	10	C. Roemer, Hartford	Selling unsanitary milk to a cheese factory	Chas. Lentz, Mayville	$25 and costs
Jan.	14	Rhinelander Cry. & Prod. Co., Rhinelander	Selling butter that was below the legal standard for butter fat	H. L. Reeves, Rhinelander	$25 and costs
Jan.	16	Gunz-Durler Co. Inc., Oshkosh	Selling candy without bearing net weight thereon	A. M. Spencer, Appleton	$25 and costs
Jan.	17	R. J. Ellis, Packwaukee	Selling adulterated watered milk	John A. Metzler, Montello	$25 and costs
Jan.	21	Sherley Harrison, Waukesha	Selling adulterated cream	James E. Thomas, Waukesha	$25 and costs
Jan.	24	A. B. Loerke, So. Kaukauna	Selling a lesser quantity of lard than was represented	A. M. Spencer, Appleton	$1 and costs
Jan.	25	Edwin Meyer, Owen	Manufacturing and selling American cheese containing more than 38% of moisture	Crosby, Neillsville	$25 and costs
Jan.	26	Geo. Zeigler Candy Co., Milwaukee	Misbranding, net weight not on box and net weight and manufacturers' name and address not on wrapper	A. M. Spencer, Appleton	$25 and costs
Jan.	26	E. Drissen, Kaukauna	Selling a lesser quantity of lard than it was represented to be	A. M. Spencer, Appleton	$1 and costs
Jan.	26	Bayergeons Meat Market, Kaukauna	Selling a lesser quantity of lard than it was represented to be	A. M. Spencer, Appleton	$1 and costs
Jan.	26	E. Klarer, So. Kaukauna	Selling a lesser quantity of lard than was represented	A. M. Spencer, Appleton	$1 and costs
Jan.	27	Fred Toelle, Arpin	Manufacturing adulterated American cheese, containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
Feb.	1	Palace of Sweets, Inc., Appleton	Selling packages of candy not bearing the name of manufacturer and net weight or contents	A. M. Spencer, Appleton	Fine suspended
Feb.	2	A. Wuilleumier, Monticello	Adulteration of milk	W. T. Saucerman, Monroe	$25 and costs
Feb.	3	Jerome Skerhutt, Cedarburg	Selling adulterated butter	A. H. Kuhl, Pt. Washington	$25 and costs
Feb.	7	Sam Jarvis, Burlington	Selling contaminated, unwholesome candy	E. R. Burgess, Racine	$25 and costs
Feb.	7	Fred Bennett, Stratford	Selling American cheese containing more than 38% moisture	R. E. Andrews, Marshfield	$25 and costs
Feb.	7	Forest Snowden, Black River Falls	Selling less than the quantity represented	P. J. Van Scoick, Black River Falls	$25 and costs
Feb.	9	C. C. Simons, Superior	Selling adulterated cream	F. S. Parker, Superior	$25 and costs
Feb.	9	Arthur Nelson, Superior	Selling adulterated cream	F. S. Parker, Superior	$25 and costs
Feb.	10	Wm. Meyer, R. 2, West Salem	Using a false measuring device in the selling of gasoline	John Brindley, La Crosse	$15 and costs
Feb.	10	Alfred Marvin, Fond du Lac	Operating an unsanitary meat market	H. M. Fellenz, Fond du Lac	$25 and costs

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1922				
Feb. 15	Wm. Fisher, Wisconsin Rapids	Sellling adulterated butter, towit butter containing less than 80% of milk fat	W. H. Getts, Wisconsin Rapids	$25 and costs
Feb. 17	Wm. Edler, R. 1, Sheboygan	Selling adulterated milk	J. C. Meyer, Sheboygan	$25 and costs
Feb. 17	Leo Koser, Menasha	Operating a bakery under unsanitary conditions	A. H. Goss, Oshkosh	$25 and costs
Feb. 17	G. A. Lehnherr, Belleville	Selling artificially bleached flour	A. C. Hoppmann, Madison	$25 and costs
Feb. 21	Gus Loek, Wauzeka	Selling a lesser quantity of pepper and raisins than represented	E. D. Tichenor, Prairie du Chien	$40 and costs ($20 on each of two counts)
Feb. 21	Gus Loek, Wauzeka	Selling a lesser quantity of pepper, raisins and sugar than he represented them to be	E. D. Tichenor, Prairie du Chien	$20.00 ($10 on each count)
Feb. 28	John Fleischman, Templeton	Selling adulterated cheese	Geo. E. Page, Milwaukee	$25 and costs
Feb. 28	Joe Woshinak, Pulaski	Selling adulterated cheese	J. L. Monahan, Green Bay	$25 and costs
Mar. 1	N. J. Moon, Jr., Oshkosh	Selling adulterated cream	H. H. Goss, Oshkosh	$25 and costs
Mar. 2	F. A. Fifer, Oxford	Using a condemned scale	J. A. Metzler, Montello	$10
Mar. 2	John McDonald	Selling adulterated cream	A. H. Schmidt, Manitowoc	$25 and costs
Mar. 2	J. A. Wood, Appleton	Manufacturing food for man from unsanitary milk.	A. M. Spencer, Appleton	$25 and costs. Appealed
Mar. 3	Arthur A. Miller, Cumberland	Selling cheese containing more than 38% of moisture	T. B. Kinsley, Barron	$25 and costs
Mar. 4	Geo. Ficher, R. 2, Marathon	Selling American cheese containing more than 38% of moisture	Louis Marchetti, Wausau	$25 and costs
Mar. 7	Herman Bublitz, R. 3, Birnamwood	Selling adulterated milk, in that it was skimmed	H. O. Buth, Shawano	$25
Mar. 9	H. B. Stanz Ch. Co., Milwaukee	Having in possession adulterated cheese	G. E. Page, Milwaukee	Paid costs
Mar. 11	Mrs. Aug. Tasche, R. 1, Wausau	Selling adulterated milk	Louis Marchetti, Wausau	$25 and costs
Mar. 11	Henry Murett, Wausau	Selling adulterated cream in that it was below 18% in butter fat	Louis Marchetti, Wausau	$25 and costs
Mar. 11	James W. Matek, Antigo	Selling American cheese containing more than 38% moisture	J. W. Parsons, Antigo	Fine suspended upon payment of costs
Mar. 13	Wm. Frisch, Antigo	Selling unsanitary milk	J. W. Parsons, Antigo	Fine suspended upon payment of costs
Mar. 13	Joe Holup, Antigo	Selling milk in dirty, rusty and open seamed cans	J. W. Parsons, Antigo	Fine suspended upon payment of costs
Mar. 13	W. L. Palzek, Antigo	Selling American cheese containing more than 38% of moisture	J. W. Parsons, Antigo	Fine suspended upon payment of costs
Mar. 14	Edwin Bruss, R. 2, Kaukauna	Selling adulterated milk	A. M. Spencer, Appleton	$25 and costs
Mar. 16	Lucien P. Delahart, De Pere	Selling adulterated cream	J. L. Monahan, Green Bay	$25 and costs. (Entered plea of nolo contendere)

Mar. 16	Alex Champeau, R. 8, Green Bay	Selling adulterated cream	J. L. Monahan, Green Bay	$25 and costs. (Entered plea of nolo contendere)
Mar. 16	Brown County Milk Exchange	Selling adulterated milk	J. L. Monahan, Green Bay	$25 and costs. (Entered plea of nolo contendere)
Mar. 16	Wm. Woodke, West De Pere	Selling adulterated milk	J. L. Monahan, Green Bay	$25 and costs. (Entered plea of nolo contendere)
Mar. 17	Walter Volk, Marshfield	Selling American cheese containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
Mar. 20	Peter Testine, Wausau	Selling adulterated cream	Louis Marchetti, Wausau	$25 and costs
Mar. 21	Conrad Jakobi, Dorchester	Selling American cheese containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
Mar. 22	Louis Rudersdorf, Platteville	Manufacturing American cheese containing over 38% of moisture	C. W. Burrows, Lancaster	$25 and costs
Mar. 24	Ervin Schlieve, Milwaukee	Exchanging and returning bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 25	W. P. Lecher, Fredonia	Manufacturing adulterated cheese	A. H. Kuhl, Pt. Wsahington	$25 and costs
Mar. 25	Walter Graeven, Milwaukee	Exchanging bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 27	Fred Storm, Appleton	Selling milk in unsanitary cans	Albert M. Spencer, Appleton	Fine remitted upon paument of costs
Mar. 27	Wm. Barker, Appleton	Selling milk in open seamed cans	Albert M. Spencer, Appleton	Fine remitted upon payment of costs
Mar. 27	L. H. Kann, Milwaukee	Returning and exchanging bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 28	Rudolph Breder, Milwaukee	Exchanging bread in a grocery store	Geo. E. Page, Milwaukee	$5 and costs
Mar. 28	Antoine Diesinger, Milwaukee	Exchanging bread in a grocery store	Geo. E. Page, Milwaukee	$5 and costs
Mar. 28	Frank Dullak, Milwaukee	Returning and exchanging bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 28	M. Babush, Milwaukee	Returning and exchanging bread	Geo E. Page, Milwaukee	$5 and costs
Mar. 28	A. Goldwasser, Milwaukee	Returning and exchanging bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 28	Ruben Sluski, Milwaukee	Returning and exchanging bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 28	Sam Gagnon, 508 Main St., Green Bay	Selling canned fruit without labeling the name and address of manufacturer	N. J. Monahan, Green Bay	$25 and costs
Mar. 28	F. Rayfieldt, Appleton	Selling milk in open seamed cans	Albert N. Spencer, Appleton	Fine remitted upon payment of costs
Mar. 28	Fred Maas, Appleton	Selling milk in open seamed cans	Albert N. Spencer, Appleton	Fine remitted upon payment of costs
Mar. 28	Leo Buehler, Milwaukee	Exchanging bread	Geo. E. Page, Milwaukee	$5 and costs
Mar. 29	W. Hurtgen, Oconomowoc	Selling adulterated butter	Newton Evens, Oconomowoc	$25 and costs
Mar. 29	G. H. Kothlow, Edgerton	Making false determinations with Babcock test	Harry L. Maxfield, Janesville	$100 and costs
Mar. 30	Robert Callies, Milwaukee	Exchanging bread in a grocery store	Geo. E. Page, Milwaukee	$5 and costs
Mar. 30	M. Little, Beaver Dam	Manufacturing butter with unsanitary utensils	J. Lyons, Beaver Dam	$25 and costs
Mar. 30	Allen Byres, Oconomowoc	Offering for sale unsanitary milk	Newton Evens, Oconomowoc	$25 and costs
Mar. 31	John Jens Jensen, R. 1, Sawyer	Offering for sale milk from unsanitary conditions	Henry Reynolds, Sturgeon Bay	$25 and costs
Mar. 31	Peter Thill, Clayton	Manufacturing brick cheese containing more than the legal amount of moisture	C. A. Taylor, Barron	$25 and costs
April 7	Otto Umland, Antigo	Selling American cheese containing more than 38% moisture	Geo. S. Mosier, Birnamwood	$25 and costs
April 7	Sheboygan Falls Creamery Co., Sheboygan Falls	Cheese not labeled as to manufacturer's name or address and short weight	Geo. Breed, Chilton	$25 and costs

CONVICTIONS—Continued

Date	Defendant	Cause of Action	Trial Judge	Fine or Forfeiture
1922				
April 7	P. H. Simenson, Salesman for Standard Ch. Co., Stanley	Selling cheese containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
April 7	Fred Umland, Sr., R. 1, Birnamwood	Selling American cheese containing more than 38% of moisture	Geo. S. Mosier, Birnamwood	$25 and costs
April 8	Keilsmeier Co., Wausau	Selling butter containing less than 80% of butter fat	A. H. Reid, Wausau	$25 and costs
April 12	Laurence Schommer, Kaukauna	Manufacturing and offering for sale adulterated cheese	N. J. Monahan, Green Bay	$25 and costs
April 12	W. J. Bye, Eau Claire	Selling adulterated cream	Henry McBain, Eau Claire	Fine remitted upon payment of costs
April 12	J. M. Dodmead, Eau Claire	Selling adulterated cream	Henry McBain, Eau Claire	$25 and costs
April 13	Robert A. Johnston Co., Milwaukee	Candy in package form not bearing net weight	N. J. Monahan, Green Bay	$25 and costs
April 13	Gazette Candy Co., Green Bay	Candy in package form not bearing manufacturers' name and address	N. J. Mohanan, Green Bay	$25 and costs
April 15	A. W. Bruss, Colby	Selling American cheese containing more than 38% of moisture	R. E. Andrews, Marshfield	$25 and costs
April 17	G. H. Kothlow, Edgerton	Selling butter containing less than 80% of milk fat	H. L. Maxfield, Janesville	$25 and costs. Entered plea of nolo contendere
April 18	Albert Liese, Berlin	Selling adulterated milk	Fred Englebrocht, Berlin	$25 and costs
April 18	Ernst Stucke, Hartford	Manufacturing adulterated cheese	Chas. Lentz, Mayville	$25 and costs
April 18	Fred Schneeberger, Hartford	Manufacturing adulterated cheese	Chas. Lentz, Mayville	$25 and costs
April 18	Wm. Pammesberger & Walter Selleyer, 508 Atwood Ave., Madison	Manufacturing and preparing food for sale, under unsanitary conditions	Henry Casson, Madison	$100 and costs
April 18	Henry Grabb, Elkhart Lake	Selling adulterated cheese	N. J. Monahan, Green Bay	$25 and costs
April 22	Carl Peters, Shawano	Selling American cheese containing more than 38% of moisture	H. O. Buth, Shawano	$25 and costs
April 22	Louis Schorer, Curtiss	Selling American cheese containing more than 38% of moisture	Crosby, Neillsville	$25 and costs
April 22	Gust C. Sampe, Curtiss	Manufacturing American cheese containing more than 38% of moisture	Crosby, Neillsville	$25 and costs
April 22	F. Oliva, 745 W. Washington Ave., Madison	Storing and preparing food for sale under unsanitary conditions	A. C. Hoppman, Madison	$50 and costs
April 25	Frank Osborn, No. Fond du Lac	Maintaining his premises and utensils in an unclean, filthy and noxious condition	N. J. Fellenz, Fond du Lac	$25 and costs
April 25	Laurence Schommer, Kaukauna	Selling adulterated cheese	Albert M. Spencer, Appleton	$25 and costs
April 26	Paul Schroeder, Dodgeville	Manufacturing American cheese containing more than 38% of moisture	R. H. Harris, Mineral Point	$25 and costs
April 26	Wm. Vander Kamp, Green Leaf	Offering for sale unsanitary milk	N. J. Monahan, Green Bay	$25 and costs
April 28	Perry Johnson, Comstock	Manufacturing for sale American cheese containing more than 38% of moisture	Henry Vold, Balsam Lake	$25 and costs

April 28	August Ipsen, Cobb	Manufacturing American cheese containing more than 38% of moisture	R. H. Harris, Mineral Point	$25 and costs
May 5	B. H. Ter Beest, Madison	Selling cheese containing less fat than provided by law	A. C Hoppman, Madison	$50 and costs
May 8	H. W. Davidson, Balsam Lake	Exposed for sale food not securely protected from filth, dust and other contamination	Henry Vold, Balsam Lake	$10 and costs
May 15	Louis Wainer, New London	Using false and unsealed weight in buying live stock at Sugar Bush	A. M. Spencer, Appleton	$25 and costs
May 16	Louis Blordorn, R. 1, Reedsville	Delivering adulterated milk to a cheese factory	Albert H. Schmidt, Manitowoc	$25 and costs
May 16	Frank Polifka, R. 1, Whitelaw	Delivering adulterated milk to a cheese factory	Albert H. Schmidt, Manitowoc	$25 and costs
May 19	Paul Luecke, Sheboygan	Maintaining his factory and utensils in an unsanitary condition	Harry Wolters, Sheboygan	$50 and costs
May 26	Earl Turian, R. 3, Pulaski	Operating an unsanitary cheese factory	H. O. Buth, Shawano	$25 and costs
May 26	Rudolph Tabbert, R. 3, Birnamwood	Selling adulterated milk, in that it was skimmed	Louis Marchetti, Wausau	One fine of $25 was placed on both Rudolph and Frank Tabbert
May 26	Frank Tabbert, R. 3, Birnamwood	Selling adulterated milk, in that it was skimmed	Louis Marchetti, Wausau	One fine of $25 was placed on both Rudolph and Frank Tabbert
May 26	Wm. Funkel, R. 1, Timothy	Manufacturing cheese, that is American containing more than 38% of moisture	Albert H. Schmidt, Manitowoc	$25 and costs
May 27	Green Bay Fish Co., Green Bay	Violation of cold storage law, fish in storage, not marked with the date placed therein	N. J. Monahan, Green Bay	$25 and costs
May 29	W. E. Poppendorf, Sister Bay	Manufacturing for sale adulterated cheese	H. H. Reynolds, Sturgeon Bay	$25 and costs
June 5	Fred Brewer, Linden	Using an incorrect scale in the sale of fish on the streets of Fennimore	C. W. Burrows, Lancaster	$10 and costs
June 5	Thomas Dunn, Rockville	Using an illegal scale in the selling of fish on the streets of Fennimore	C. W. Burrows, Lancaster	$15 and costs
June 9	Lynn Falcon, Eau Claire	Selling adulterated cream	Henry McBain, Eau Claire	$25 and costs
June 20	Omro Coop. Btr. & Ch. Co., Omro	Selling adulterated butter	H. H. Goss, Oshkosh	$25 and costs
June 21	American Candy Co., Milwaukee	Baking orders for delivery and misbranding of candy	C. H. Speck, Prairie du Chien	$50 and costs. Entered plea of nolo contendere (two counts)
June 21	John Zulnranie, Clayton	Offering for sale and selling adulterated milk to a cheese factory	T. B. Kinsley, Barron	$25 and costs
June 21	Joe Barberick, Clayton	Offering for sale and selling adulterated milk to a cheese factory	T. B. Kinsley, Barron	$25 and costs
June 22	Nels Petersen, Barron	Selling and offering for sale unsanitary cream	T. B. Kinsley, Barron	$25 and costs
June 26	Carvers Ice Cream Co., Oshkosh	Selling adulterated butter	H. H. Goss, Oshkosh	$25 and costs
June 27	G. W. Jagon, Mayville	Offering for sale, adulterated milk, to a cheese factory	Chas. Lentz, Mayville	$25 and costs
June 30	Frank Robaydek, R. 3, Pulaski	Maintaining utensils and premises of a cheese factory in an unsanitary condition	H. O. Buth, Shawano	$25 and costs
June 30	John Murphy, De Pere	Offering milk from unsanitary utensils for sale	N. J. Monahan, Green Bay	$25 and costs

DISBURSEMENTS

For Year Ending June 30, 1921

Emery, J. Q., commissioner, salary	$1,583.31
Weigle, G. J., commissioner	2,033.31
Klueter, Harry, assistant commissioner and chief chemist	3,153.61
Walter, M. L., secretary to commissioner	1,784.36
Beck, Josephine, filing clerk	1,012.63
Beckwith, Chauncey, inspector, salary and expense	3,399.10
Boettcher, J. E., inspector, salary and expense	2,803.15
Bornheimer, H. L., inspector, salary and expense	842.38
Cook, S. B., inspector, salary and expense	2,993.17
Crosby, R. R., inspector, salary and expense	3,047.17
Crippen, E. W., inspector, salary and expense	2,963.52
Corcoran, Delma, stenographer	493.54
Fischer, Richard, consulting director of laboratory	600.00
Findorff, Louena, stenographer and bookkeeper	1,164.98
Fessler, Ruth, clerk	43.06
Gilman, Geo. D., inspector, salary and expense	2,989.04
Howlett, I. R., assistant chemist, salary and expense	2,121.79
Hodgin, Vera, stenographer	1,074.28
Hanson, F. S., inspector, salary and expense	3,180.57
Hadley, R. M., inspector, salary and expense	281.56
Krohn, C. A., assistant chemist, salary and expense	1,264.36
Kremer, C. J., inspector, salary and expense	2,547.01
Kelliher, J. M., inspector, salary and expense	2,649.60
Keebler, I. W., assistant chemist, salary and expense	683.56
Larson, H. C., chief of butter division, salary and expense	418.54
Lehnherr, Jacob, inspector, salary and expense	2,795.46
Melaas, M. I., assistant chemist, salary and expense	1,641.37
Madsen, Axel, inspector, salary and expense	1,839.37
Norman, Minerva, stenographer	366.05
O'Connell, Helen, stenographer	1,349.80
Olson, I. M., clerk	96.33
Peebles, S. M., inspector, salary and expense	1,940.56
Rice, Jeanette, assistant clerk	577.50
Smith, R. M., chief inspector weights and measures	415.34
Sherwood, M. T., inspector, salary and expense	2,574.29
Stueber, G. H., inspector, salary and expense	3,258.51
Stewart, W. A., inspector, salary and expense	2,991.08
Stewart, L. R., inspector, salary and expense	2,837.67
Servis, G. A., inspector, salary and expense	956.43
Southard, R. B., inspector, salary and expense	123.63
Town, H. G., inspector, salary and expense	2,946.45
Tappins, F. E., inspector, salary and expense	2,970.38
Thompson, A. T., inspector, salary and expense	1,572.01
Van Duser, James, inspector, salary and expense	2,581.38
Van Lone, W. M., inspector, salary and expense	3,459.58
Voigt, W. A., inspector, salary and expense	2,484.68
Winder, Wm., chief of cheese division, salary and expense	3,503.19
Warner, George, inspector, salary and expense	3,096.48
Winder, Gordon, inspector, salary and expense	2,252.39
Association of Official Agricultural Chemists, dues	5.00
Association of American Dairy, Food and Drug Officials, dues	10.00
Insurance Fund, Treasurer, premium	52.86
Refunds	332.35
Printing Board	2,280.83
Superintendent of Public Property, supplies	7,149.15
Totals	$103,587.72

DISBURSEMENTS

For Year Ending June 30, 1922

Emery, J. Q., commissioner, salary and expense	$4,021.48
Klueter, Harry, assistant commissioner and chief chemist, salary and expense	3,406.41
Walter, M. L., secretary to commissioner, salary and expense	1,910.08
Atwood, C. B., inspector, salary and expense	2,171.76
Beck, Josephine, clerk	1,088.94
Boettcher, J. E., inspector, salary and expense	3,160.44
Beckwith, Chauncey, inspector, salary and expense	2,770.95
Corcoran, Delma, stenographer	167.19
Cook, S. B., inspector, salary and expense	2,611.81
Crosby, R. R., inspector, salary and expense	3,029.03
Crippen, E. W., inspector, salary and expense	2,711.00
Cummings, Margaret, clerk	468.75
Campbell, Geo. E., inspector, salary and expense	1,525.45
Engineering Department, services	69.55
Fischer, Richard, consulting director of laboratory	600.00
Findorff, Louena, clerk	1,269.66
Gilman, Geo. D., inspector, salary and expense	2,880.88
Hodgin, Vera, stenographer, salary and expense	1,152.11
Howlett, I. R., assistant chemist, salary and expense	2,344.30
Hanson, F. S., inspector, salary and expense	705.98
Hadley, R. M., inspector, salary and expense	2,922.51
Keebler, I. W., assistant chemist, salary and expense	2,133.22
Kremer, C. J., inspector, salary and expense	3,000.71
Kelliher, J. M., inspector, salary and expense	2,724.68
Lehnherr, Jacob, inspector, salary and expense	2,441.62
Melaas, M. I., assistant chemist	212.49
Meidell, Alice, stenographer	113.88
Milward, Genevieve, stenographer	600.00
O'Connell, Helen, stenographer, salary and expense	1,390.84
Peebles, S. M., inspector, salary and expense	1,410.88
Rice, Jeanette, clerk, salary and expense	971.31
Radke, R. L., inspector, salary and expense	1,616.16
Sherwood, M. T., inspector, salary and expense	920.28
Stueber, G. H., inspector, salary and expense	3,018.31
Stewart, W. A , inspector, salary and expense	2,836.99
Stewart, L. R., inspector, salary and expense	2,732.54
Southard, R. B., inspector, salary and expense	2,693.81
Schuette, H. A., assistant chemist	139.75
Tappins, F. E., inspector, salary and expense	2,950.34
Thompson, A. T., inspector, salary and expense	3,188.54
Town, H. G., inspector, salary and expense	2,530.63
Van Duser, James, inspector, salary and expense	2,468.37
Van Lone, W. M., inspector, salary and expense	3,093.15
Voigt, W. A., inspector, salary and expense	1,898.69
Valleskey, A. R., inspector, salary and expense	561.76
Winder, William, second assistant commissioner, salary and expense	3,497.62
Warner, George, chief inspector of weights and measures, salary and expense	2,682.18
Winder, George, inspector, salary and expense	1,004.68
Wiese, Hilda, assistant chemist, salary and expense	1,090.38
Wetak, J. J., inspector, salary and expense	1,317.86
Wegner, Charles, drayage	1.00
McManners & Gruber, repairs	14.35
Printing Board	1,998.65
Superintendent Public Property, supplies	11,340.46
Schoelkopf, L. F., supplies	3.50
State Insurance Fund	65.60
Refunds	637.00
Totals	$110,290.51

REPORT OF HARRY KLUETER

Chief Chemist and Assistant Commissioner 1920-1921

HON. J. Q. EMERY,
Dairy and Food Commissioner.

Dear Sir: I take pleasure in submitting, herewith, a report of the work of the chemical laboratory and as Assistant Dairy and Food Commissioner for the year ending June 30, 1921.

Not infrequently in public have I heard you refer to the importance of the laboratory of your department, the necessity for only the best and most accurate equipment, the employment of only well trained and skillful chemists and the necessity for the most careful and painstaking work. It has been my purpose to conduct the laboratory to meet the high ideals expressed by you. Every member of the force there employed is intensely interested in the work and I know that the rendering only of services of the highest degree of excellence satisfies those employed. It is with a sincere feeling of responsibility that the work is there undertaken and performed.

One thousand four hundred twenty-seven samples of foods, drugs, paints, linseed oils and turpentine have been analyzed, tabulated and are included in this annual report. This vast amount of analytical work affords an opportunity for study of the food conditions as they existed in the markets of Wisconsin for the past year. It is to be borne in mind that the food inspectors are trained in the purchase of samples and therefore purchase and submit only such samples as they have good reason to believe are adulterated or misbranded. For that reason the analytical work on the samples submitted does not show the condition of the markets except as to adulterated foods. Thousands of samples of food are examined by our inspectors in the stores, meat markets, food factories and other places engaged in the manufacture or sale of foods for misbranding and evidences of unsanitary methods of preparation or storage.

Beverages

There were examined during the year two hundred twenty-six samples of beverages, thirty-five of which were bought as grape juice or grape cider. Twenty-two of the thirty-five samples of grape juice or grape cider were found to have been treated with sulphur dioxide. These samples of grape juice were white grape juice of the Catawba type. These products were treated with sulphur dioxide for two purposes, namely, the preservative effect and the clarification of the product. Sulphurous acid is a powerful chemical preservative, its presence in food is specifically prohibited by a special law dealing with the sale of foods containing chemical preservatives. The

thirteen samples found to be standard were free from sulphurous acid. Grape juice, like all other fruit juice, if improperly prepared and handled, is a perishable article of food. It has been demonstrated, however, time and time again, that it is possible to so prepare and handle grape juice that the use of chemical preservatives is unnecessary. I have had occasion to talk to a number of merchants concerning the sale of Catawba grape juice and have learned that the product is not a popular article with the trade. This, I feel, is largely due to the fact that the excellent grape flavor has been injured by the use of sulphur dioxide. The flavor of some of the products examined was decidedly unpleasant and there was produced a decided and characteristic sulphur after taste. It is to be regretted that manufacturers of food are willing to sacrifice quality and purity to attain a slightly lower manufacturing cost.

There appeared on the market a flood of so-called soft drinks or beverages due to the passage of the Volstead Act by Congress and the Mulberger Law by the State. There were collected and examined one hundred seventy-nine samples of these products. The samples consisted of ciders, imitation wines, cordials and products sold under coined names such as "Hot Port," "Bitter Wine," "Crem De Manthe," "A Temperance Beverage," "Sweet Punch"' and "Bracer." Most of the beverages of the type of those sold under the above names mentioned were shipped into Wisconsin from other states. Forty-five in number were found to be preserved with either benzoic acid or benzoate of soda. Of this number only a few were manufactured in this state. This, I think, illustrates among other things that the manufacturers of food products in Wisconsin have come to realize that the use of benzoate of soda is not permissible under the Wisconsin food laws. The disappearance of this class of beverages from the Wisconsin market was almost as sudden as its appearance. Some few prosecutions were necessary but in most instances the character and quality of the product was so inferior and so unsuited for the place they were intended to fill that they were very short lived. Twenty-three samples were found to contain saccharin. It cannot be said in connection with these samples that most of them came from out of the State; as a matter of fact, all but six were products manufactured in Wisconsin, but I am pleased to state that the twenty-three samples represent only eight different firms in the state. The fraudulent character and deleterious effect of saccharin on the system is very well known and there seems little excuse for the use of this substance by soda water bottlers in Wisconsin. Prosecutions were started in connection with all samples found to contain saccharin.

Dairy Products

There were analyzed during the year eight hundred fifty-four samples of dairy products. Practically two-thirds of the total number of samples analyzed fell into this class. Wisconsin being the leading dairy state of the union necessarily must have either a very

large number of small manufacturing plants engaged in the manufacture of dairy products or a few large plants. The former is the case. That is to say we have a large number of cheese factories, creameries, condenseries, skimming stations and receiving stations all of which require inspection. To keep pure and unadulterated the raw products, milk or cream used or handled by this large number of factories, is in itself no small task and is work of great importance. To inspect the vast quantity of cheese, butter, cream and evaporated milk produced and sold by these factories is likewise an important and large task.

Butter

One hundred forty-two samples of butter were collected; fifty-nine of the samples it was found necessary to classify as not standard for the reason that these samples fell below the legal standard for milk fat in butter. Thirty-one of the fifty-nine samples classed as not standard were found to contain less than 80 per cent in place of 82.5 per cent the number of samples classed as not standard would have fallen from fifty-nine to thirty-one. Nine samples were found to contain above 81 per cent of milk fat but contained less than 82 per cent of milk fat. In fact none of the samples classed as not standard were found to contain as high as 82 per cent of milk fat. It is quite apparent to me from this analytical data that a large percentage of the butter makers of the state are attempting to manufacture their butter with an 80 per cent milk fat content rather than attempting to incorporate 82.5 per cent of milk fat as required by the definition and standard for butter in Wisconsin.

During the preceding year there were analyzed in the laboratory fifty samples of butter collected by Mr. H. C. Larson when he occupied the position of Chief of the Butter Division of the Dairy and Food Commissioner's Department. These samples were taken by Mr. Larson in the creamery from the churn at the end of the churning process. Four samples were collected from each churning, one sample from each end of the churn, one from the middle of the churn and a composite sample built up by taking portions of butter from both ends of the churn and the middle of the churn. This work was undertaken because of being shown analytical data from one of the largest creameries in Wisconsin indicating very decided differences in the percentage of salt from samples of butter taken from the same churning. The variations in salt, of course, would cause variations in the percentage of milk fat in the butter. This matter has been given some little thought and the fifty samples collected, analyzed and tabulated point out clearly the necessity of knowledge and care of the butter maker and the making of tests from various parts of his churn and not simply collecting his sample of butter from one end of the churn. This raises the question:

Can the butter maker after making a moisture test on a churning of butter and determining that the butter contains 15.5 per cent of moisture, afford to incorporate water by adding water to the churn

and working it into the butter to bring the moisture content up to 15.9 per cent? It is interesting in this connection to present a few facts. We will base our determinations on a churning of butter weighing one thousand pounds and a butter price of fifty cents per pound. The value of the butter, in the churning, therefore, is five hundred dollars and each .1 of one per cent of milk fat in the butter is worth fifty cents. A thousand pounds of butter containing 15.9 per cent of moisture would have one hundred fifty-nine pounds of water; a thousand pounds of butter containing 15.5 per cent of moisture would contain one hundred fifty-five pounds of water. Therefore, there would have to be added four pounds of water to raise the moisture content from 15.5 to 15.9 per cent. Four pounds of water at the price of butter would be worth two dollars. If, in testing the churning for moisture, the butter maker did not get a representative sample, chances to get his sample from that portion of the churning which showed a moisture content below the average moisture content of the churning his calculations might well lead him to add enough water to bring the moisture content of his butter up to 16.2, 16.3 or 16.4 per cent. He would then have manufactured adulterated butter when judged by the ruling of the Internal Revenue Department in that it contained sixteen per cent or more of moisture. The conditions under which adulterated butter may be manufactured in compliance with the law and rules and regulations of the Internal Revenue Department are that the factory obtain a license at a cost of three hundred dollars per year, that the factory pay a tax of ten cents per pound on all adulterated butter manufactured and that the butter be labeled "adulterated" and sold as adulterated butter. The question may very well be asked: In a transaction involving five hundred dollars and the chances of violating the regulations pertaining to the manufacture and sale of adulterated butter with the hope of increasing his revenue two dollars, can the butter maker afford to take the chances of producing adulterated butter, laying the manufacturer liable to an assessment of one hundred dollars in the form of a tax of ten cents per pound and the possibility of having to take out a three hundred dollar license and sell his products as and for adulterated butter? I am thoroughly convinced from my experience and knowledge of sampling and testing butter, that unless the creamery is equipped with a good laboratory and a person well trained and skilled in sampling and testing butter, no manufacturer of butter or butter maker can at all times hope to produce legal butter if he depends upon his own sampling and testing and attempts to incorporate 15.8 or 15.9 per cent of moisture in butter. I think that entirely too much time and effort has been given to the thought of producing butter that contains to within one-tenth of one per cent of the amount of moisture permitted by the regulations of the Internal Revenue Department and it would seem without the producers of butter having taken into consideration the risks they run for the small percentage of gain. It is true that twenty-five hundredths of 1 per cent increase in the value of the output of a creamery manu-

facturing a million pounds of butter a year amounts to considerable; in fact, at a price of fifty cents per pound for butter it amounts to twenty-five hundred dollars and this twenty-five hundred dollars is gained by increasing the moisture content of butter from 15.5 to 16 per cent. The amount of money saved might be used toward paying the salary of an analyst and maintaining a laboratory for him, who, besides testing and controlling the composition of butter could accurately test samples of cream delivered to the creamery by patrons. I have pointed out what I consider a factor overemphasized in the manufacture of butter, that is, the practice of attempting to manipulate the manufacture of butter to a point where a butter maker can place on the market butter that meets the requirements of law.

The addition of an excessive amount of water to butter is not the only way of reducing its milk fat content. This can also be accomplished by the addition of excessive amounts of salt and in some butter examined there seemed to be a sufficient reason for the addition of excessive amounts of salt. Certain off-flavors can very well be masked by a high salt content. The use of cream of inferior quality in this way is made possible and by this means large quantities of cream of inferior quality are used in the manufacture of butter which is known will go immediately to the retail trade and be consumed in a short time. Little or no attempt is made by the manufacturers of this class of butter toward improving the quality of cream purchased by them or delivered to them. To manufacture butter of excellent quality with a desirable flavor and good keeping quality means the use of cream of only high quality. I recently heard a man intimately connected with the butter industry for many years make the statement that during the past ten or fifteen years practically every effort in the manufacture of butter was toward the perfection of some method or machine which would make possible the use of poor cream and still turn out excellent butter. That there has been a great deal of effort in this direction cannot be denied.

Pasteurization, a process never intended to improve or we might say renovate poor cream, has been suggested and tried time and time again. Neutralization has been tried and is being used with some degree of success when additional manipulation of the cream is resorted to. Methods of aerating cream in connection with pasteurization have been recommended and tried. Attempts have been made to install in creameries of this state blowing apparatus in which the air was forced through solutions of sodium hypochlorite with the idea that it was necessary to thoroughly purify the air by washing before it could be blown into the cream. One form of apparatus used was of such construction that a fine spray of the hypochlorite solution was mechanically carried into the cream, thus adulterating it. Where such methods have been resorted to, one entering the factory might well believe that he was entering a chemical manufacturing plant rather than a food plant engaged in the manufacture of one of the nations most important articles of food. Every intelligent person engaged in the manufacture of butter for many years has known

the simple truth, namely, that good, clean cream without foreign flavors would produce good clean, high scoring butter of excellent keeping quality. But, as I have pointed out, the tendency has been toward the development of methods which would enable the creamery men to reclaim cream that has lost its characteristics and valuable qualities for butter making.

While dealing with butter I feel that it would be wrong for me to fail to point out what science has recently developed with respect to the food value of butter. For years the science of nutrition recognized the necessity of four essential elements in the diet, namely, fats, carbohydrates, protein and salts. Recent discoveries and developments in nutrition, however, have proven beyond all reasonable doubt the existence of valuable food accessories in certain foods. These, at the time of their discovery by the staff of nutritional experts at the college of agriculture were for the want of a better name designated as fat-soluble A and water-soluble B. For a period of several years extensive experiments were carried on not only at the college of agriculture, University of Wisconsin, but at Yale, Columbia University and in foreign countries with a view to determining just what these food accessories were and to establish by experiments the result of the absence of these substances from the diet. The vast amount of work done led to a quite complete survey of the foods used in the human diet with a view of determining the presence or absence of these food accessories. Practically all experimenters on the subject admitted that milk fat is one of the most valuable sources of fat-soluble A. I am touching but lightly on this question for the reason that the subject is a technical one and any comprehensive presentation of it would mean not a few paragraphs or pages but a volume.

Cheese

During the year there were tested two hundred four samples of cheese all of which were tested for moisture to determine in the case of cheese known as American or Cheddar cheese whether the moisture content was in excess of that permitted by statute and in the case of Brick cheese to determine whether the moisture content was in excess of that permitted by statute. In addition to the moisture tests where there was reason to suspect another form of adulteration, namely, the removal of fat from the milk from which the cheese was made, or the incorporation of foreign fat or oil, samples were analyzed to prove or disprove skimming or the addition of a foreign fat or oil. The legislature during the session of 1917 enacted the following law and amended the legal definition and standard for cheese, fixing a maximum moisture content for cheese known as American or cheddar cheese.

Section 4601—7. Any firm or corporation who shall, by themselves, their servant or agent, and any person who shall, by himself, his servant or agent, or as the servant or agent of another person or as the servant or agent of any firm or corporation, manufacture for sale or exchange, sell, exchange, offer for sale or exchange or

have in possession with intent to sell or exchange any cheese which contains more than the permitted amount of moisture as provided in subsection 9 of section 4601—4*a* of the statutes, shall be fined not less than twenty-five nor more than one hundred dollars, or be imprisoned in the county jail not less than thirty days nor more than four months.

The legislature in 1919 again amended the definition and standard for cheese fixing a maximum moisture content of 42 per cent for Brick cheese and again the legislature in 1921 amended the standard and definition for cheese reducing the maximum moisture content permitted in cheese known as American or cheddar cheese from 40 to 38 per cent. This amendment went into effect on March 24, 1921, so that in reporting the samples of cheese tested as complying with the legal standard for cheese known as American or cheddar cheese a maximum moisture content of 40 per cent was in use up to March 24, 1921, and since that date the moisture content of 38 per cent has been in force.

Ninety-five of the two hundred four samples tested were found to be in compliance with the standards fixed for cheese and were therefore manufactured and sold in compliance with law. Ninety-four samples were found to contain more than the permitted amount of moisture permitted in cheese known as American or cheddar cheese or Brick cheese. Perhaps the biggest factor influencing the legislature in reducing the moisture content of cheese known as American or cheddar cheese from 40 per cent to 38 per cent was the condition of Wisconsin cheese in the cheese warehouses of the state during the fall and winter months of 1920 and 1921. A vigorous enforcement of section 4601—7 limiting the amount of moisture in cheese known as American or cheddar cheese since 1917 apparently had not resulted in the expected improvement in the quality of this type of cheese. In referring to the enforcement of this law as a vigorous enforcement, I feel compelled to point out that the vigorous enforcement was against the manufacture of so-called high moisture cheese and not against its sale. The law holds the seller of so-called high moisture cheese equally responsible with the party who manufactures it. Had we been able to direct our attention toward the sale of this cheese as well as the manufacture and had the same vigorous enforcement against sale been that we had against manufacture, I feel certain that we could have come much nearer accomplishing the end sought in limiting the amount of moisture in cheese, namely, an improvement in the quality of cheese. It has been my contention from the time there has been a law prohibiting the sale as well as the manufacture of cheese, high in moisture, that it was necessary to enforce the law against dealers willing to accept and deal in high moisture cheese as well as anyone manufacturing high moisture cheese. I have heard the statement repeatedly made that as long as we have a market for poorly made, off-flavored, low quality cheese just so long will that kind of cheese be produced, and I think it is equally true that just so long as dealers are willing to accept and deal in high moisture cheese, so long will that kind of cheese be manufactured.

I will not attempt to discuss the influence of excessive amounts of moisture on the quality of cheese because of my limited experience in the manufacturing and merchandising of cheese. I will leave that phase of the subject to those able to qualify as experts in cheese.

A few words, however, as to the rights of the consuming public concerning their interest in the question of moisture in cheese, I do not feel will be amiss. Cheese is consumed undoubtedly for two reasons, because of its pleasant and agreeable flavor and because of its food value. From what I have been able to learn by contact with the cheese industry and its experts I am convinced that flavor is not dependent upon the moisture unless that constituent is reduced to such a percentage where the processes of curing in cheese are retarded. That percentage of moisture in cheese would be very low and would result in the production of the cheese with a much less market value, but that condition is not approached where cheese is manufactured and sold which complies with the present standard for cheese known as American or Cheddar cheese, or which contains less than the permitted amount of moisture. That a reasonable amount of moisture in cheese has a beneficial effect upon the curing of cheese is, I believe, admitted; that an excessive amount of moisture in cheese leads to a favorable condition for decomposition rather than normal curing, I believe, has been demonstrated. It being possible to produce cheese with the desired flavor and keep within the present moisture standards the consuming public are within their rights from the standpoint of food value in asking for the control of moisture in cheese. Undoubtedly in certain sections of the United States cheese is consumed primarily from the standpoint of food value. To these people water at cheese prices would not be popular nor just.

Cream

Ninety-eight samples of cream were tested in the laboratory; forty-five samples of this number were collected by inspectors of this department while doing city milk inspection work. Of this number, thirteen upon analysis were found to be in compliance with the standard for cream. Twenty-seven submitted samples were received and tested; most of these samples were submitted by the owners thereof for the reason that they felt they were not getting a proper test of their cream at the place of sale. These samples were tested for the convenience of these people and to assist them in getting a fair and accurate test. The testing of a submitted sample of cream does not take a great deal of time but in doing this work it is made very plain in the letter giving the report of the test that this department assumes no responsibility for the sampling of the cream but assumes responsibility only for the accuracy of the test upon the cream as it was received at the laboratory.

Twenty-six samples of cream were collected by our inspectors for the purpose of checking up cream testing at creameries and cream

buying stations. As a result of this work, it was found that in several instances the test given the patron on the sample of cream by creameries or cream stations was incorrect; it was too low or too high. Testing of cream in this state is governed by law which law makes it a misdemeanor to over-read or under-read any Babcock test where the value of the milk or cream is determined by test. As a result of the investigation carried on by our inspectors and the analytical work on these twenty-six samples, several prosecutions for violations of the aforesaid law were brought. It should be brought out in this connection that to make a false test or determination of milk fat in cream is not limited to the use of the Babcock test, but also to any other method of testing cream. The prosecutions brought and the conditions found show the wisdom and the necessity for this provision of law. Not only may the patron or producer of cream be defrauded by under-reading, but the over-reading of the Babcock test may be used, and I feel has been used, to draw patrons from one creamery or cream station to another. This is unfair competition and it goes without saying that honest testing cannot live in face of such competition. The small number of samples collected by inspectors and submitted for this work indicates that there was general satisfaction with the testing of cream for the year, for if there had been much dissatisfaction, undoubtedly a greater number of complaints would have come to us for investigation. This line of work is carried on almost entirely on complaints received. Considering the thousands of samples of cream tested yearly in Wisconsin, this may be taken as an indication that testing of cream in general in the state was satisfactorily done.

Ice Cream

There were tested during the year forty-four samples of ice cream, none of which were passed standard, and thirty-five of which were classed as not standard. In determining whether ice cream for this report was standard or not standard, the former standard for ice cream, requiring not less than fourteen per cent of milk fat, was used. It was during the session of the legislature of 1921 that there was introduced a bill amending the definition and standard for ice cream. The history of and the reason for the introduction of this amendment is of interest and importance but will be discussed in the report for the following year in connection with ice cream rather than in this report, for the reason that the old standard was in force during the period covered by this report, with the exception of the last nine days. A number of prosecutions were brought during this period for the sale of ice cream containing less than the required amount of milk fat and in practically all of the prosecutions brought conviction was secured. A fairly large number of samples of ice cream have been collected and analyzed for the past four years. Ice cream has become an important article of food, new factories have been built, the consumption increased, and, without doubt, the quality has been improved.

Milk

As has been the case each year, a large number of samples of milk collected by our inspectors from deliveries of milk at cheese factories, condenseries and city milk supplies have been received at the laboratory and analyzed. Three hundred and eighty-seven samples in all were analyzed. Of this number, one hundred and fifty-six were samples submitted by producers of milk in most instances, and in a few instances by consumers of milk, the producer feeling that he was not getting a straight deal in the testing of his product at the place where it was purchased and the consumers submitting samples felt that they were not getting pure milk. Twenty-nine samples collected at cheese factories, creameries or condenseries upon analysis were found to be in compliance with the legal standard for milk and seventy-seven were found to be adulterated when judged by the definition and standard for milk and the law defining what shall constitute adulteration in milk. Keeping pure, that is free from adulteration and clean, the milk supply of the creameries, cheese factories, condenseries and the cities in the state is of vast importance. The work here reported on city milk does not by any means represent all of the work done in the state on milk for many of the larger cities have well equipped laboratories, efficient inspectors and, while I have no definite figures to submit, I am convinced that a greater number of samples of city milk are collected and tested by cities than we are able to collect and test. It is to be remembered that the analytical work of the laboratory on city milks also represents a small percentage of the actual work done by the department for samples from all dairies are collected in most of the cities and villages of the state and tested by our inspectors in the field. These inspectors use the lactometer test, the Babcock test for fat and the sediment test, and as a result of their testing, they submit to the laboratory only such samples as they have reason to believe are adulterated.

Milk is the foundation upon which Wisconsin's greatest industry is built. The importance of keeping the foundation of this industry pure and free from adulteration cannot be overemphasized for no permanent and lasting structure can be built and maintained on an imperfect foundation. The usual forms of adulteration were found, namely, the addition of water, the removal of cream, or both. Due to the efficient work in stamping out the use of chemical preservatives in milk in the earlier days of this department, the use of chemical preservatives in milk has disappeared.

Ninety-three samples of milk were collected by our inspectors from the herds on the farms at the time of milking. The analysis of these samples was necessary to be able to decide with certainty that milk from the owners of these herds offered for sale was not adulterated. That is to say, where inspectors found adulterated milk, they at once collected samples of milk from the herds. The publication of the results of the analysis of these samples of milk is of importance.

Miscellaneous Dairy Products

Under the head of miscellaneous dairy products, there were analyzed samples of skim milk, whey, modified milk, evaporated milks, and a sample of a compound of skim milk and cocoanut oil sold to one of the inspectors in the city of Racine as evaporated milk. The brand of the product was Carolene, and it was found upon analysis to be a mixture of evaporated skim milk and cocoanut oil.

Experimental Work on Cheese

To determine whether or not a mixed lot of milk containing three per cent of milk fat would produce American cheese containing not less than 50 per cent of fat in the moisture free solids, Mr. Winder, Second Assistant Dairy and Food Commissioner, collected at the Boaz Cheese Factory on three days the milk of several herds, mixing the same together and getting a milk that tested three per cent fat. This milk was manufactured into American cheese which was later analyzed and found to be of the following composition:

		Per cent
Sample No. 80 W. W.	Moisture	37.28
	Solids	62.72
	Fat (by Babcock)	32.15
	Fat (by Extraction)	32.27
	Ratio Fat to Solids	51.45
Sample No. 81 W. W.	Moisture	37.20
	Solids	62.80
	Fat (by Babcock)	31.50
	Fat (by Extraction)	31.78
	Ratio Fat to Solids	50.60
Sample No. 82 W. W.	Moisture	36.67
	Solids	63.33
	Fat (by Babcock)	31.50
	Fat (by Extraction)	31.98
	Ratio Fat to Solids	50.49

The samples of milk taken before the milk was manufactured into cheese upon analysis gave the following results:

		Per cent
Sample No. 76 W. W.	Sp. G.	1.0316
	Fat	3.05
	Total Solids	11.49
	Solids not fat	8.44
	Z. I. R.	40.9
Sample No. 83 W. W.	Sp. G.	1.0310
	Fat	3.0
	Total solids	11.19
	Solids not fat	8.19
	Z. I. R.	40.3

Samples of whey were collected from the milk manufactured into cheese. The samples of whey were analyzed and found to contain .22 and .23 per cent of milk fat.

While this experimental work may not be held to be sufficient because of the limited number of samples of milk collected and manufactured into cheese, nevertheless, this work should be put into permanent form into this report. I regret that we are unable to carry on more of this work. The work is purely investigational,

but of great importance in the enforcement of the law relating to the sale of cheese not in compliance with the legal standard and definition for cheese. There was for a time considerable agitation in a few limited sections of the state in favor of what was called standardization of milk for cheese making, namely, the reduction of the milk fat content of milk to a test of 3 per cent. The practice of the removal of fat under the guise of standardization was advanced as necessary to meet the competition of condenseries. Under existing dairy laws the practice suggested, even though carried on under the guise of standardization, would result in the production of skim milk cheese. The agitation started along these lines was not very successful, for I do not believe that any considerable percentage of those engaged in the manufacture of cheese could be induced to enter into this scheme. Cheese manufactured from milk from which any of the fat has been removed, under the law, must be of definite dimensions—ten inches in height and nine inches in diameter, a size of cheese decidedly unpopular with the trade because of what its size signifies, namely, skim milk cheese.

Flavoring Extracts

Thirty samples of various kinds of flavoring extracts were analyzed. Four samples of vanilla extract were found to be below standard, two were misbranded and four samples were standard and properly branded. Fifteen samples of lemon extract were analyzed, six of which were standard, six were misbranded and three were adulterated. The forms of adulteration in vanilla extract, in some instances, were that the extracts were prepared with less than the required amount of vanilla bean being used and others the product was adulterated by the addition of vanillin and coumarin with artificial color, the artificial color in all instances being caramel. The forms of adulteration in the lemon extracts were a shortage of lemon oil, the use of cotton-seed oil as a solvent in place of alcohol and the use of terpeneless oil of lemon in place of oil of lemon. A few samples were found to be misbranded in that the containers bore a false and misleading statement concerning the quantity of contents. The use of solvents for flavoring extracts other than alcohol or mixtures of alcohol and water are becoming quite general. Our standard for flavoring extracts, flavors, essences and tinctures permits the use of alcohol of proper strength only as a solvent.

Flour

Eleven samples of flour were submitted for analysis. Most of the samples were collected and submitted to determine whether or not the flour had been artificially bleached. Five of the samples were found to have been artificially bleached. Two of these five samples were marked bleached, while the other three bore no branding or labeling to indicate that the flour was bleached flour. Three samples of wheat flour were submitted by citizens because they were

unable to do satisfactory baking with the flour. An analysis in the laboratory disclosed no adulteration whatsoever and the fact that the flour was new and unaged undoubtedly was the cause of poor results in baking.

Lard and Oleomargarine

Nine samples of lard and oleomargarine were analyzed in the laboratory. Five samples of oleomargarine were found to be preserved with benzoate of soda and their sale therefore in Wisconsin was in contravention of law. Three samples of lard suspected of being adulterated by the addition of beef fat or mutton tallow were analyzed and found to be free from adulteration. All three samples of lard were pure and in compliance with the standard for that product.

Linseed Oil

Twenty-eight samples of linseed oil were analyzed, all of which were submitted by citizens of the state. No samples of linseed oil were collected and submitted for analysis by our inspectors. Three of the twenty-eight samples of linseed oil submitted by citizens of the state were found to be badly adulterated either with a mineral oil of the nature of machine oil or a mixture of that oil and kerosene. Two samples were found to have an acid value far in excess of that permitted by the standard for linseed oils. The fairly large number of linseed oils submitted by citizens of the state would indicate the necessity of having our inspectors collect linseed oils for analysis in the future. I do not expect to find a large percentage of adulterated linseed oils, but I suspect that we will find some adulterated oils and consequently violations of the linseed oil law if we are able to do some work along these lines in the smaller towns and villages in the state, especially those away from a railroad. It is also a fact that many farmers are buying linseed oil in small barrels of from twenty to thirty gallons directly from manufacturers or dealers outside of the state. Of course we would have no jurisdiction over the sale of such products but I believe that we are warranted in analyzing them when submitted by such purchasers so that we may keep in closer touch wtih the activities of those engaged in shipping linseed oil. A great deal of damage can be done to a building by applying a coat of paint in which the oil used is an adulterated linseed oil. We have had instances in the state where new buildings have been painted with highly adulterated linseed oil and put in such condition that it would be impossible to successfully repaint such buildings without first removing by burning off the previous coat of paint. This is a very expensive procedure for the reason that it takes so much time. A fact usually lost sight of in painting is the cost of material as compared with the labor cost. The labor cost in practically all paint work exceeds the cost of the material, so that by the use of poor materials the cost of the labor may be entirely lost plus the extra expense of removing coats of paint applied in highly adulterated linseed oils.

Miscellaneous Products

Forty-nine samples of various food products were analyzed and are reported under the classification of miscellaneous products. There was not a sufficient number of any one kind of food to warrant a separate classification. I will call attention to several of the products which are of especial interest. There was submitted a sample of Whip-O. An analysis of the product showed it to be sucrate of lime, a product formerly used in Wisconsin in pasteurized cream to restore the viscosity of such cream. A sample of fresh strawberries suspected of having been treated with powdered benzoate of soda was submitted and tested for the presence of benzoate of soda and none was found.

A sample of canned beets was analyzed and found to contain excessive quantities of tin. The inside of the can showed excessive corrosion and the canned beets were not fit for food.

Several samples of sugar suspected of being beet sugar were submitted and tested but no evidence sufficient to pronounce the sugar beet sugar was obtained by analysis.

Seven samples of salad dressing were submitted and found to be preserved with benzoic acid.

Two samples of candy were submitted because they were suspected of containing added poison. Very complete and careful analysis of the candy to determine the presence of added poison showed the candy to be free from that substance.

One sample of ketchup was submitted and was found to be preserved with benzoate of soda.

A sample of a food preservative sold to a bottler in the state under the name of Anti Ferment, upon analysis was found to be a saturated solution of benzoate of soda. It was pointed out to the soda water bottler that the use of this Anti Ferment in his soda water would make the sale of such soda water in violation of the law of the state.

A sample of alcohol suspected of containing wood alcohol was submitted by Dr. F. F. Field of Elroy but an analysis of the product showed the alcohol to be free from adulteration.

A sample of alcohol was also submitted by Mr. Bloodgood, Deputy Prohibition Commissioner, to be tested for wood alcohol and none was found.

Several samples of ice cream mix were submitted and tested for the reason that the purchasers of this product had reason to believe that it contained less than the required amount of milk fat.

Some analytical work was done on samples of yarn and a woolen blanket, for a member of the Assembly who wished to know the percentage of wool and cotton in the blanket. The sample of woolen blanket submitted was found to contain 43.3 per cent of cotton and 56.7 per cent of wool. Such a product sold as a wool or woolen blanket would tend to show the necessity for some control of the sale of fabrics.

Vinegar

Eighty-one samples of vinegar were tested in the laboratory. Seventy-four samples were submitted by farmers or other citizens of the state who had manufactured cider and were permitting it to ferment and become cider vinegar. In testing these vinegars for the manufacturers thereof, it is made clear to them that we assume no responsibility for the character of the vinegar other than the percentage of acetic acid therein. The testing of a sample of cider vinegar for acetic acid takes but a few moments, whereas if we would attempt to make a complete analysis of all of the cider vinegar submitted by producers, the time of one man would be largely occupied in the laboratory. Inasmuch as the samples are submitted by the manufacturers of the vinegar these manufacturers are in a position to know whether or not the sample submitted is entirely fermented apple juice or whether it is a mixture of apple juice, sugar and water. The mere fact that we have tested the sample for acidity is no guarantee to them that their product will pass any further investigation that we might care to make concerning their product, but the determination of the acid strength of the vinegar is of considerable importance. As pointed out, the manufacturers are in a position to know whether or not their product is made entirely from apples but without a test for acidity they are not in a position to know whether the fermentation has progressed far enough to produce the required amount of acetic acid. Seven samples of vinegar were submitted by inspectors and tested. Three of the seven samples were found to be standard and four were found to be adulterated.

SUMMARY ANALYSES

June 30, 1920–July 1, 1921

1427 Samples

	No. of Samples		
BEVERAGES			226
Grape juice or grape cider—standard	13		
Grape juice or grape cider— not standard	22		
Tested for alcohol	12		
Miscellaneous	179		
DAIRY PRODUCTS			888
BUTTER		142	
Standard	31		
Not standard	59		
Submitted	52		
CHEESE		204	
Tested for moisture and found to be in compliance with law for moisture	95		
Tested for moisture and found to contain more than the permitted amount of moisture	94		
Submitted	15		
CREAM		100	
City supply—standard	13		
City supply—not standard	34		
Submitted	27		
Tested for per cent. of butter fat to determine overreading or underreading of the Babcock test	26		
ICE CREAM		44	
Standard	9		
Not standard	35		
MILK		387	
Delivered at cheese factories or creameries—standard	29		
Delivered at cheese factories or creameries—not standard	77		
City milk—not standard	32		
Herd samples	93		
Submitted	156		
MISCELLANEOUS DAIRY PRODUCTS		6	
EXPERIMENTAL WORK ON CHEESE		5	
FLAVORS AND FLAVORING EXTRACTS			30
FLOUR			11
LARD AND OLEOMARGARINE			9
LINSEED OIL			28
MISCELLANEOUS PRODUCTS			75
MISCELLANEOUS SACCHARINE PRODUCTS			30
SUBMITTED MISCELLANEOUS PRODUCTS			49
VINEGARS			81
Standard	3		
Not standard	4		
Submitted	74		

BEVERAGES

GRAPE JUICE AND GRAPE CIDER—STANDARD

Date	Bought of	Manufacturer or Jobber
1920		
Sept. 22	D. W. Corcoran, Hudson Wis	Druerig & Sons, St. Paul
Sept. 23	C. R. Christianson, Deer Park	Barrett & Barrett, St. Paul
Sept. 24	Oluf A. Osen, River Falls	Druerig & Sons, St. Paul
Sept. 29	Frank Conrad, Baldwin	Druerig & Sons, St. Paul
Sept. 29	J. McGowan, Menomonie	Irondequot Fruit Juice Co., Rochester, New York
Nov. 5	Johnson Hill Co., Wisconsin Rapids	Florida Fruit Juice Co., Bradentown, Florida
Nov. 11	Pt. Edward's Mer. Co., Pt. Edward	Florida Grape Juice Co., Bradentown, Florida
Nov. 16	H. D. McCulloch, Stevens Point	The John C. Meier Grape Juice Co., Stevens Point
Dec. 7	W. Waller, Amherst	The John C. Meier Grape Juice Co., Silverton, Ohio
Dec. 7	C. M. Doinell, Amherst	Sweet Valley Grape Juice Co., Sandusky, Ohio
Dec. 20	Wm. Arneman, Neenah	Wm. Arneman, Neenah
1921		
June 3	C. A. Jorgensen, Green Bay	Allouez Mineral Spring Co., Green Bay
June 30	P. Schneider, Stanley	Irondequot Fruit Juice Co., Rochester, New York

GRAPE JUICE AND GRAPE CIDER—Not Standard

Date	Bought of	Manufacturer or Jobber
1920		
July 2	Zaden Brothers, Green Bay	Theonett Company, Chicago
Aug. 9	S. L. Harsham, Eau Claire	Theonett Company, Chicago
Aug. 11	Costoplos & Stamatakos, Eau Claire	Hammondsport Produce Co., New York
Sept. 2	Geo. E. Heist, Glenwood City	The Bass Island Vineyard Co., Sandusky, Ohio
Sept. 14	Geo. Harrison, New Richmond	Theonett & Company, Chicago
Sept. 28	Schmidt Kuffel Co., Berlin	Hammondsport Produce Co., New York
Oct. 18	Fred Rienor, Spencer	Hammondsport Produce Co., New York
Oct. 19	Aug. Mueller, Colby	Fruit Valley Grape Juice Co., Sandusky, Ohio
Nov. 19	W. B. Pett, Stevens Point	Hammondsport Produce Co., New York
Dec. 5	Oscar G. Olson, Stanley	The Bass Island Vineyard Co., Sandusky, Ohio
Dec. 7	John Galomski, Custer	Rex Grape Juice Company, Chicago

1921		
Mar. 10	J. & W. Jung, Sheboygan	Theonett Company, Chicago
Mar. 11	H. Parry, Dodgeville	Gould, Wells & Blackburn, Madison
Mar. 16	Sagen-Schuster Co., Galesville	The Wm. Becker Grape Juice Co., Kelly's Island, Ohio
April 20	J. F. Spicak, Boyceville	Irondequot Fruit Juice Co., Rochester, New York
May 3	Peter Reinke, Elmwood	Sweet Valley Grape Juice Co., Sandusky, Ohio
May 3	Ole Reseld, Eau Claire	Theonett Company, Chicago
May 3	Peter Reinke, Elmwood	Theonett Company, Chicago
May 19	Hanovitz, Mosinee	Theonett Company, Chicago
June 9	A. E. Goodin, New Richmond	A. M. Wilson Company, St. Paul
June 10	Peter Reinke, Elmwood	Theonett Company, Chicago
June 30	Frank Wozosek, Stanley	Hammondsport Produce Co., New York

BEVERAGES—Tested for Alcohol

Date	Kind	Submitted by	Remarks
1920			
July 21	Bevo	Health Officer E. Babcock, Madison	Alcohol by volume 0.39% Alcohol by weight 0.31%
July 21	Pale Pick Wick	Health Officer E. Babcock, Madison	Alcohol by volume 0.29%
Sept. 20	Alcoholic Liquor	Jas. Murray, Dist. Atty., Fond du Lac	Spec. Gr. liquor 20°/4=.95332 Alcohol by volume 36.88% Alcohol by weight 30.62%
Sept. 20	Alcoholic liquor	Jas. Murray, Dist. Atty., Fond du Lac	Spec. Gr. liquor 20°/4.=.96409 Alcohol by volume 28.82% Alcohol by weight 23.56%
1921			
Jan. 20	Beer	Mr. Bloodgood, Madison	Alcohol by volume 0.80% Alcohol by weight 0.66%
Mar. 29	Gin	Geo. Bremer, Madison	Z. I. R. 20°=43.35% Sp. Gr.=36.88
April 4	Beer	Prohibition Commission, Madison	Alcohol by volume 0.54% Alcohol by weight 0.43%
April 4	Beer	Prohibition Commission, Madison	Alcohol by volume 2.90% Alcohol by weight 2.26%
April 4	Beer	Prohibition Commission, Madison	Alcohol by volume 2.40% Alcohol by weight 1.86%
April 4	Beer	R. P. Holms, Lancaster	Alcohol by volume 0.45% Alcohol by weight 0.35%
April 6	Home Brew Beer	O. D. Black, Richland Center	Alcohol by volume 3.30% Alcohol by weight 2.59%
April 6	Raisin Brew	O. D. Black, Richland Center	Alcohol by volume 8.05% Alcohol by weight 6.39%

Beverages—Miscellaneous

Date	Kind	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1920				
July 5	Apple Cider	Bur Groc. Co., Green Bay	Inland Prod. Co., Spokane, Wash.	Tested for sulpuhr dioxide. None found.
Aug. 11	Lemon Beer	John Splitt, Milwaukee	John Splitt, Milwaukee	Tested for saccharine and benzoic acid. None found.
Aug. 12	Apple Cider	Thomas Dudgeon, Eau Claire	Drewry & Son, St. Paul, Minn.	Tested for benzoate of soda and small amount found.
Aug. 12	Apricot Beverage	S. L. Harsham, Eau Claire	Shuster Company, Cleveland, Ohio	Not standard. Contains benzoate of soda.
Aug. 12	Port Beverage	S. L. Harsham, Eau Claire	Shuster Company, Cleveland, Ohio	Not standard. Contains benzoate of soda.
Aug. 16	Lemon Soda	Henk Mineral Spring Co., Waukesha	Henk Mineral Spring Co., Waukesha	Not standard. Contains saccharine.
Aug. 16	Grape Soda	Henk Mineral Spring Co., Waukesha	Henk Mineral Spring Co., Waukesha	Not standard. Contains saccharine.
Aug. 16	Strawberry Soda	Henk Mineral Spring Co., Waukesha	Henk Mineral Spring Co., Waukesha	Not standard. Contains saccharine.
Aug. 16	Sarsaparilla Soda	Almanaris Mineral Spring Co., Waukesha	Almanaris Mineral Spring Co., Waukesha	Tested for saccharine and none found.
Aug. 16	Birch Beer	Almanaris Mineral Spring Co., Waukesha	Almanaris Mineral Spring Co., Waukesha	Not standard. Contains saccharine.
Aug. 16	Ginger Ale	Almanaris Mineral Spring Co., Waukesha	Almanaris Mineral Spring Co., Waukesha	Not standard. Contains saccharine.
Aug. 16	Root Beer	Almanaris Mineral Spring Co., Waukesha	Almanaris Mineral Spring Co., Waukesha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Lemon Soda	Sparkling Springs Water Co., Kenosha	Sparkling Springs Water Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Vanilla Soda	Sparkling Springs Water Co., Kenosha	Sparkling Springs Water Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Orange Soda	Sparkling Springs Water Co., Kenosha	Sparkling Springs Water Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Cherry Soda	Sparkling Springs Water Co., Kenosha	Sparkling Springs Water Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Orange Crush	J. J Kohlmann & Co., Kenosha	J. J. Kohlmann & Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Ko Ko Soda	J. J. Kohlmann & Co., Kenosha	J. J. Kohlmann & Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Grape Soda	J. J. Kohlmann & Co., Kenosha	J. J. Kohlmann & Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 16	Birch Beer	J. J. Kohlmann & Co., Kenosha	J. J. Kohlmann & Co., Kenosha	Tested for benzoate of soda and saccharine. None found.
Aug. 17	Cream Soda	Brandenburg & Gloede, Racine	Brandenburg & Gloede, Racine	Tested for saccharine and benzoic acid. None found.
Aug. 17	White Pop	Brandenburg & Gloede, Racine	Brandenburg & Gloede, Racine	Tested for saccharine and benzoic acid. None found.
Aug. 17	Root Beer	Brandenburg & Gloede, Racine	Brandenburg & Gloede. Racine	Tested for saccharine and benzoic acid. None found.
Aug. 17	Orange Soda	Brandenburg & Gloede, Racine	Brandenburg & Gloede, Racine	Tested for saccharine and benzoic acid. None found.
Aug. 17	White Soda	P. J. Kohlmann Co., Racine	P. J. Kohlmann Co., Racine	Tested for saccharine and benzoic acid. None found.
Aug. 17	Root Beer	P. J. Kohlmann Co., Racine	P. J. Kohlmann Co., Racine	Tested for saccharine and benzoic acid. None found.
Aug. 17	Orange Soda	P. J. Kohlmann Co., Racine	P. J. Kohlmann Co., Racine	Not standard. Contains benzoic acid.
Aug. 17	Lemon Sour	P. J. Kohlmann Co., Racine	P. J. Kohlmann Co., Racine	Tested for saccharine and benzoic acid. None found.
Aug. 23	Evergreen Soda	O. K. Products Co., Milwaukee	O. K. Products Co., Milwaukee	Tested for saccharine and benzoic acid None found.
Aug. 23	Artificial Raspberry Soda	O. K. Products Co., Milwaukee	O. K. Products Co., Milwaukee	Tested for saccharine and benzoic acid. None found.
Aug. 23	Cream Soda	O. K. Products Co., Milwaukee	O. K. Products Co., Milwaukee	Tested for saccharine and benzoic acid. None found
Aug. 23	Root Beer	O. K. Products Co., Milwaukee	O. K. Products Co., Milwaukee	Tested for saccharine and benzoic acid. None found.
Aug. 23	Loganberry	O. K. Products Co., Milwaukee	O. K. Products Co., Milwaukee	Tested for saccharine and benzoic acid. None found.
Aug. 23	Pickwick Beverage	*Ed. Babcock, Madison		Tested for alcohol and found to contain 0.43% by vol.
Aug. 23	Pickwick Beverage	*Ed. Babcock, Madison		Tested for alcohol and found to contain 0.43% by vol.
Aug. 23	Orange Soda	O. K. Products Co., Milwaukee	O. K. Products Co., Milwaukee	Tested for saccharine and benzoic acid. None found.
Aug. 25	Soft Drink	Chris Volkman, Eau Claire	Chris Volkman, Eau Claire	Tested for saccharine and benzoic acid. None found.

Aug.	25	Soft Drink	Joe Evans, Eau Claire	Whistle Company, U. S. A.	Tested for saccharine and benzoic acid. None found.
Aug.	27	Bow Boisson Port Flavor	Bow Boisson Co., West Allis	Bow Boisson Co., West Allis	Tested for saccharine and benzoic acid. None found.
Aug.	27	Ginger Cordial	Bow Boisson Co., West Allis	Bow Boisson Co., West Allis	Tested for saccharine and benzoic acid. None found.
Aug.	27	Red Soda	Sanitary Soda Water Co., West Allis	Sanitary Soda Water Co., West Allis	Not standard. Contains saccharine.
Aug.	27	Brown Soda	Sanitary Soda Water Co., West Allis	Sanitary Soda Water Co., West Allis	Not standard. Contains saccharine.
Aug.	27	Lemon Sour	Sanitary Soda Water Co., West Allis	Sanitary Soda Water Co., West Allis	Not standard. Contains saccharine.
Aug.	30	Bevo Beverage	*E. Babcock, Madison		Tested for alcohol and found to contain 0.48% by vol.
Aug.	30	Bevo Beverage	*E. Babcock, Madison		Tested for alcohol and found to contain 0.48% by vol.
Sept.	13	Ginger Ale	"Bostwicks," Waukesha	White Rock Mineral Springs Co., Waukesha	Sucrose 1.2%. Tested for saccharine and benzoic acid None found
Sept.	13	Ginger Ale	Bon Ton Grocery, Waukesha	Glenn Rock Waukesha Spring Co., Waukesha	Tested for saccharine and benzoic acid. None found Sucrose, 7.72%.
Sept.	13	Root Beer	Waukesha Spring Water Co., Waukesha	Waukesha Spring Water Co., Waukesha	Sucrose 7.04%. Tested for saccharine and benzoic acid. None found.
Sept.	13	Ginger Ale	Waukesha Spring Water Co., Waukesha	Waukesha Spring Water Co., Waukesha	Sucrose 3.65%. Tested for saccharine and benzoic acid. None found.
Sept.	13	Birch Beer	Waukesha Spring Water Co., Waukesha	Waukesha Spring Water Co., Waukesha	Sucrose 7.19%. Tested for saccharine and benzoic acid. None found.
Sept.	13	Cream Soda	Waukesha Roxo Co., Waukesha	Waukesha Roxo Co., Waukesha	Sucrose 4.56%. Tested for saccharine and benzoic acid. None found.
Sept.	13	Ginger Ale	Waukesha Roxo Co., Waukesha	Waukesha Roxo Co., Waukesha	Sucrose 5.24% Tested for saccharine and benzoic acid. None found.
Sept.	13	Sarsaparilla	Waukesha Roxo Co., Waukesha	Waukesha Roxo Co., Waukesha	Sucrose 3.99%. Tested for saccharine and benzoic acid. None found.
Sept.	13	White Soda	Jos. Raschi, Waukesha	Supreme Bottling Co., Waukesha	Sucrose 4.33%. Tested for saccharine and benzoic acid. None found.
Sept.	13	Cherry Soda	Jos. Raschi, Waukesha	Supreme Bottling Co., Waukesha	Sucrose 1.13%. Tested for saccharine and benzoic acid. None found.
Sept.	14	Ginger Cordial	J. A. Smith, New Richmond	Minneapolis Beverage Co., Minneapolis	Small amount of saccharine.
Sept.	14	Imitation Port Wine	Andrew Danelsky, New Richmond	Liebenthal Bros. Co., Cleveland, Ohio	Ether sol. residue present. Benzoic acid..
Sept.	15	Bezzo (Cherry)	Geo. B. Beliske, Somerset	Axlette Fruit Prod. Co., St. Louis, Mo.	Ether sol. present. Saccharine present.
Sept.	15	Cider	A. H. Montpetit, Somerset	The Francis Croppen Co., Chicago	Ether sol. residue present. Benzoic acid.
Sept.	16	Lemon Soda	E. Dames, Oconomowoc	E. Dames, Oconomowoc	Sucrose 7.09%. Tested for saccharine and benzoic acid. None found.
Sept.	16	Cream Soda	E. Dames, Oconomowoc	E. Dames, Oconomowoc	Sucrose 5.27%. Tested for saccharine and benzoic acid. None found.
Sept.	20	Cider	H. M. Frederick, New Richmond	Guttmann Bros. Co., St. Paul, Minn.	Tested for preservative and none found.
Sept.	20	Apple Cider	Andrew Danelsky, New Richmond	Liebenthal Bros. Co., Chicago, Ill.	Tested for saccharine and benzoic acid. None found.
Sept.	20	Apple Cider	J. A. Smith, New Richmond	Drewey & Son, St. Paul	Tested for preservatives and none found.
Sept.	22	Apple Cider	D. W. Corcoran, Hudson	Guttmann Bros. Co., St. Paul	Ether sol. residue present. Benzoic acid.
Sept.	23	Pop	Wm. Sinaiko, Madison	Wm. Sinaiko, Madison	Tested for saccharine and preservatives and none found. Sucrose 3.99%.
Sept.	23	Pop	Wm. Sinaiko, Madison	Wm. Sinaiko, Madison	Tested for saccharine and preservatives and none found. Sucrose 5.27%.

Beverages—Miscellaneous

Date	Kind	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1920				
Sept. 23	Pop	Wm. Sinaiko, Madison	Wm. Sinaiko, Madison	Succrose 4.40%. Tested for saccharine and benzoic acid. None found.
Sept. 23	Apricot Beverage	H. Steiner, East Ellsworth	The Schuster Co., Cleveland, Ohio	Benzoic acid present.
Sept. 24	Creme Soda	The Rieder Co., Madison	Lows Bottling Works, Chicago	Sucrose 6.25%. Tested for saccharine and chemical preservatives. None found.
Sept. 24	Root Beer	The Rieder Co., Madison	Lows Bottling Works, Chicago	Sucrose 5.84%. Tested for saccharine and chemical preservatives. None found.
Sept. 24	Ginger Ale	The Reider Co., Madison	Sheboygan Beverage Co., Sheboygan	Tested for saccharine and benzoic acid. None found. Succrose 3.91%.
Sept. 27	Pop	Hudson Bottling Works, Hudson	Hudson Bottling Works, Hudson	Tested for saccharine and benzoic acid. None found.
Sept. 29	Fruit Nectar	J. W. Allard, River Falls	Imperial Fruit Nectar Co., Minneapolis, Minn.	Tested for preservatives and sweetener. None found.
Sept. 29	Ginger Cordial	H. Steiner, East Ellsworth	Guttman Bros. Co., St. Paul, Minn.	Not standard. Contains benzoate of soda.
Sept. 29	Virginia Dare	Oluf A. Osen, River Falls	Garett & Co., New York, N. Y.	Tested for preservatives and sweetener. None found.
Sept. 29	Van Rouge (Bev.)	Phillip & Taggart, River Falls	E. P. Pyan, Minneapolis, Minn.	Tested for preservatives and sweetener. None found.
Sept. 29	Hot Port	M. Conroy, East Ellsworth	St. Louis Beverage Co., Minneapolis, Minn.	Tested for saccharine and benzoic acid. None found.
Sept. 29	Ginger Cordial	H. Steiner, East Ellsworth	Lash's Products Co., Chicago	Tested for saccharine and benzoic acid. None found.
Sept. 29	Pop	H. W. Brooks, Green Lake	Ripon Bottling Works, Ripon	Tested for saccharine and benzoic acid. None found.
Sept. 29	Ginger Ale	D. B. Greenway, Green Lake	Allouez Mineral Spring Co., Green Bay	Not standard. Contains saccharine.
Sept. 29	Hot Port	Oluf A. Osen, River Falls	St. Louis Beverage Co.,	Benzoic acid present.
Sept. 29	Apple Cider	Frank Conrad, Baldwin	Banelt & Banelt, St. Paul	Benzoic acid present.
Sept. 29	Apricot Cider	H. F. Michuls, Menomonie	Minneapolis Beverage Co., Minneapolis, Minn.	Ether sol. residue present. Benzoic acid.
Oct. 1	Port Cider	John Archer, Baldwin	Hudson Bottling Works, Hudson	Tested for benzoate. None found.
Oct. 5	Root Beer	Berlin Bottling Works, Berlin	Berlin Bottling Works, Berlin	Tested for saccharine and benzoic acid. None found.
Oct. 5	Orange Crush	E. C. Arnemann & Co., Neenah	E. C. Arnemann & Co., Neenah	Tested for benzoates and saccharine. None found. Sucrose 8.32%.
Oct. 5	Lemon Soda	E. C. Arnemann & Co., Neenah	E. C. Arnemann & Co., Neenah	Tested for benzoates and saccharine. None found. Sucrose 5.31%.
Oct. 5	Lemon Sour	R. Schmelpfinig, Westfield	R. Schmelpfinig, Westfield	Tested for saccharine and benzoic acid. None found.
Oct. 7	Orangade Syrup	P. J. Kohlmann Co., Racine	Massy & Massy, Chicago	Not standard. Contains benzoate of soda.
Oct. 11	Lemon Crush	H. M. Spinks, Woodville	Hudson Bottling Works, Hudson	Tested for saccharine and benzoic acid. None found. Sucrose 6.89%.
Oct. 12	Champagne	F. H. Fifer, Oxford	H. C. Schranck Co., Milwaukee	Not standard. Contains saccharine.
Oct. 12	Gingerale	F. H. Fifer, Oxford	Sparta Bottling Works, Sparta	Tested for saccharine and benzoic acid. None found.
Oct. 12	Root Beer	E. C. Holch & Son, Mauston	Gardener's Bottling, Mauston	Tested for saccharine and benzoic acid. None found.
Oct. 12	Ginger Ale	E. C. Holch & Son, Mauston	Gardner's Bottling Works, Mauston	Tested for saccharine and benzoic acid. None found.
Oct. 15	Root Beer	Neu Bottling Co., Menominee Falls	Neu Bottling Co., Menominee Falls	Tested for saccharine and benzoic acid. None found.
Oct. 15	Raspberry Soda	Neu Bottling Co., Menominee Falls	Neu Bottling Co., Menominee Falls	Tested for saccharine and benzoic acid. None found.
Oct. 18	Root Beer	F. G. Klein Co., Burlington	F. G. Klein Co., Burlington	Tested for saccharine and benzoic acid. None found.
Oct. 18	Orange Soda	F. G. Klein Co., Burlington	F. G. Klein Co., Burlington	Tested for saccharine and benzoic acid. None found.

Oct. 19	Root Beer	Portage Root Beer Co., Portage	Portage Root Beer Co., Portage	Tested for saccharine and benzoic acid. None found.
Oct. 19	Lemon Sour	Portage Root Beer Co., Portage	Portage Root Beer Co., Portage	Tested for saccharine and benzoic acid. None found.
Oct. 19	Creme Soda	Portage Root Beer Co., Portage	Portage Root Beer Co., Portage	Tested for saccharine and benzoic acid. None found.
Oct. 19	Root Beer	Eulberg Products Co., Portage	Eulberg Products Co., Portage	Tested for saccharine and benzoic acid. None found.
Oct. 19	Lemon Sour	Eulberg Products Co., Portage	Eulberg Products Co., Portage	Tested for saccharine and benzoic acid. None found.
Oct. 19	Blackberry	Temperance Beverage Co., Chicago	Baum Specialty Co., Milwaukee	Not standard. Contains benzoic acid.
Oct. 21	Cherry Nectar	Mrs Augusta Vogel, Marshfield	Crapper Co., Chicago	Tested for sweetener and preservative. None found.
Oct. 21	Orange Soda	Schils Brothers, Port Washington	Schils Brothers, Port Washington	Not standard. Contains saccharine.
Oct. 21	Strawberry Soda	Schils Brothers, Port Washington	Schils Brothers, Port Washington	Not standard. Contains saccharine.
Oct. 21	Evergreen	Schils Brothers, Port Washington	Schils Brothers, Port Washington	Not standard. Contains saccharine.
Oct. 21	Cream	Sheridan Springs, Lake Geneva	Sheridan Springs, Lake Geneva	Free from saccharine and chemical preservatives.
Oct. 21	Orange Soda	George Ritter, Cedarburg	George Ritter, Cedarburg	Found to be free from saccharine and chemical preservatives.
Oct. 21	Lemon Soda	George Ritter, Cedarburg	George Ritter, Cedarburg	Free from saccharine and chemical preservative.
Oct. 21	Port	Wm. R. Hudson, Unity	Temperance Beverage Co., Chicago	Not standard. Contains benzoic acid.
Oct. 21	Cream de Menthe	John Schipke, Marshfield	Temperance Beverage Co., Chicago	Not standard. Contains benzoic acid.
Oct. 21	Ginger	John Schipke, Marshfield	Temperance Beverage Co., Chicago	Benzoic acid present. Saccharine—none.
Oct. 21	Bitter Wine	John Schipke, Marshfield	Temperance Beverage Co., Chicago	Benzoic acid present. Saccharine—none.
Oct. 21	Apricot	John Schipke, Marshfield	Temperance Beverage Co., Chicago	Benzoic acid present.
Oct. 21	Kummel	John Schipke, Marshfield	Temperance Beverage Co., Chicago	Benzoic acid present.
Oct. 21	Root Beer	Oscar Altpeter, Baraboo	Oscar Altpeter, Baraboo	Found to be free from saccharine and chemical preservatives.
Oct. 21	Root Beer	F. G. Kessler, Baraboo	F. G. Kessler, Baraboo	Contains benzoic acid and saccharine..
Oct. 21	Cherry Pop	A. W. Guetzkow, Sauk City	A. W. Guetzkow, Sauk City	Benzoic acid present.
Oct. 21	Port Imitation	John Schipke, Marshfield	Temperance Beverage Co., Chicago	Benzoate present. Saccharine—none found.
Oct. 22	Raspberry Pop	A. W. Guetzkow, Sauk City	A. W. Guetzkow, Sauk City	Benzoic acid present.
Oct. 22	Cherry Tango	Joe Rebstock, Marshfield	Crown Beverage Co., St. Louis	Benzoic acid—none. Saccharine present.
Oct. 22	Port	Westley Sigl, Marshfield	Crown Beverage, St. Louis	Benzoate present. Saccharine—none found.
Oct. 22	Creme de Menthe	Gust Henkel, Colby	The Hamberger Co., Chicago	Contains Benzoic acid..
Oct. 23	Orangeade	Sheridan Spr. Co., Lake Geneva		Contains benzoic acid.
Oct. 27	Cream Soda	Sparta Bottling Works, Sparta	Sparta Bottling Works, Sparta	No ether sol. residue.
Nov. 8	Cider Syrup	Grand Rapids Bottling Works, Wisconsin Rapids	Pensith Acker Mfg. Co., Minneapolis, Minn.	Free from adulteration.
Nov. 10	Fruit juice	G. S. Beardsley, Wisconsin Rapids	Hammondsport Prod. Co., New York	Contains sulphuric acid.
Nov. 11	Cider	Thos. Dunn, Arpin		Free from adulteration.
Nov. 11	Prunella	F. C. Sommerfeldt, Arpin	Crown Beverage Co., St. Louis	Ether sol residue present. Saccharine present.
Nov. 18	Apple Cider	Walter Brothers, Viola	J. I. Lamb, La Crosse	No adulteration found.
Nov. 18	Orange Cider	Walter Brothers, Viola	Elysian Mineral Water Co., Prairie du Chien	Adulterated. Contains small amount of benzoate soda.
Nov. 26	Lemon Sour	H. O. Wuerch, Princeton	J. H. Shew, Princeton	Adulterated. Contains saccharine.
Nov. 26	Pop	H. O. Wuerch, Princeton	J. H. Shew, Princeton	Benzoate present in very small amount.
Nov. 26	Pop	Chas. Windels, Appleton	Chas. Windels, Appleton	No ether sol. preservatives.
Dec. 1	A Typical Apple Cider	Eisold & Ewald, Milwaukee	Eisold & Ewald, Milwaukee	No ether sol. preservatives.
Dec. 2	Apple Cider	John Sanduig, Menasha	Red Wing Company, Inc., Fredonia, New York	No ether sol. preservatives.
Dec. 3	Apple Cider	Gillman & Smuckler, Rathchild	The Morgan Co., Traverse City, Michigan	Benzoate is present.
Dec. 10	A Temperance Beverage	Mrs. Paulina Sonntag, Ringle	Sunset Products Co., Chicago	No saccharine present. Benzoic acid is present.

Beverages—Miscellaneous

Date	Kind	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1921				
Dec. 17	Ruby Rill	J. G. Diehl, Oshkosh	A. J. Greencorn, Oshkosh	No ether sol. preservatives.
Dec. 20	Apple Cider	Geo. T. Carr, Owen	Gamble Robinson Co., Minneapolis, Minnesota	Benzoic acid in large amount.
Jan. 10	Apricot Beverage	S. L. Hansham, Eau Claire	Guttman Bros. Co., St. Paul	Saccharine absent. Benzoic acid present.
Jan. 13	Apple Cider	Dick Kunsman, Chippewa Falls	Drewery & Sons, St. Paul	Benzoates absent.
Jan. 13	Apple Cider	Conrad Jasper, Chippewa Falls	Guttman Bros. Co., St. Paul	Ether sol. preservatives—none.
Jan. 13	Cherry Drip	Dick Kunsman, Chippewa Falls	Arrow Products Co., Peoria, Ill.	Ether sol. preservatives—none.
Jan. 13	White Grape	Conrad Jasper, Chippewa Falls	Crown Beverage Co., St. Louis	Saccharine identified by taste.
Jan. 13	Port	Conrad Jasper, Chippewa Falls	Crown Beverage Co., St. Louis	Saccharine identified by taste.
Jan. 13	Cherry Cider	Dick Kunsman, Chippewa Falls	The Francis Crappen Co., Chicago	Very little benzoate present.
Feb. 15	Raspberry	J. W. Higgins, Lonerock	Boscobel Bottling Wks., Boscobel	Adulterated. Contains small amount of benzoate soda.
Feb. 15	Raspberry	J. W. Higgins, Lonerock	Boscobel Bottling Wks., Boscobel	Benzoate present in very small amount.
Feb. 15	Imitation Orange Cider	C. E. Frey, Spring Green	Boscobel Bottling Wks., Boscobel	Adulterated. Contains small amount of benzoate soda.
Feb. 16	Apple Cider	Wagner & Weir, Independence	Hoffarth & Schuh, Winona, Minn.	Benzoic acid present in considerable amount.
Feb. 23	Appleade	Middleton Bottling Wks., Middleton	Middleton Bottling Wks., Middleton	Misbranded and adulterated. Saccharine present.
April 4	Soda Water	Ed Kolb & Son, Fond du Lac	H. Nehring & Sons, Fond du Lac	No adulteration found.
April 4	Soda Water	Ed. Kolb & Son, Fond du Lac	H. Nehring & Sons, Fond du Lac	No adulteration found.
April 11	Soft Drink	John Schare, Nelson	Hoffarth & Schuh, Winona, Minn.	Benzoic acid present.
April 12	White Soda	Ray Miller, Eden	H. Nehring & Sons, Fond du Lac	No ether sol. residue.
April 14	Cherry	S. Clohesy, N. Fond du Lac	H. Nehring & Sons, Fond du Lac	No ether sol. residue.
April 14	Loganberry	J. P. Schneider, Rosendale	A. J. Greencorn, Rosendale	No ether sol. residue.
April 19	Soft Drink Syrup	D. J. Toycen, Colfax	Green & Green, Houston, Texas	No ether sol. residue.
April 19	Port Cider	J. F. Spicak, Boyceville	Drewery & Sons, St. Paul	Preservatives—none. Saccharine—none.
April 19	Crushed Strawberry	Heibel Bottling Wks., Madison	Liquid Carbonic Co., Chicago	Artificially colored.
April 20	Apple Cider	C. E. Youssi, Boyceville	Dore-Redpath Co., St. Paul	Contains sodium benzoate.
April 20	Orange Cider	C. E. Youssi, Boyceville	Drewery & Sons, St. Paul	Preservatives—none. Saccharine—none.
May 3	Fruitti Punch	Chas. Wilson, Elmwood	C. F. Sauer Co., Virginia, Va.	Preservatives—none.
May 6	Apricot	Henry Steiner, East Ellsworth	The American Cider Co., St. Paul	Benzoic acid present.
May 6	Kummel	Henry Steiner, East Ellsworth	American Cider Co., St. Paul	Benzoic acid present.
May 12	Sweet Punch	The Loeffler Co., La Crosse	The Loeffler Co., La Crosse	Benzoic acid present.
May 25	Green River	*F. Thurnell, Stone Lake		Tested for benzoate of soda. None.
June 3	Orange	C. A. Jorgensen, Green Bay	Allouez Mineral Spring Co., Green Bay	No saccharine.
June 3	Lemon	C. A. Jorgensen, Green Bay	Allouez Mineral Spring Co., Green Bay	No saccharine. No benzoate of soda.
June 8	Ginger Cordial	H. M. Friedrichs, New Richmond	Liebenthal Bros., Cleveland, Ohio	No benzoate of soda.
June 10	Roman Punch	A. Cloutier, Somerset	The Francis Cropper Co., Chicago	No benzoate.
June 10	Virginia Julep	Geo. A. Belisle, Somerset	Arrow Products Co., Peoria, Ill.	No preservative.
June 10	Apricot Beverage	A. H. Montpettit, Somerset		Benzoate present. Residue from ether extraction.
June 10	Bracer	A. H. Montpettit, Somerset		Benzoate found.
June 10	Apple Juice Cider	A. H. Montpettit, Somerset	The Francis Cropper Co., St. Paul	Benzoic acid is present in goodly amount.
June 11	Port	Geo. A. Belisle, Somerset	Keystone Speciality Co., St. Paul	Benzoate found.

*Submitted by.

DAIRY PRODUCTS

Butter—Standard

Date	Bought of	Manufacturer or Jobber
1920		
July 16	Seibert Bakery, Mineral Point	Badger Creamery Co., Mineral Point.
Sept. 1	The Company Store, Cumberland	Cumberland Creamery Co., Cumberland.
Nov. 6	Plymouth Store, Plymouth	Kielsmeier Company, Plymouth.
Nov. 16	Clarence O Paulson, Green Bay	Arctic Ice Cream Co., Green Bay.
Nov. 16	William E. Wagner, Green Bay	Brown Company Equity Milk Exch., Green Bay.
Nov. 16	J. S. Jorgenson, Green Bay	Sheboygan Dairy Products Co., Green Bay.
Nov. 16	A. B. Cavitt, Green Bay	Fairmont Creamery Co., Green Bay.
Dec. 3	Quality Market, Richland Center	Carnation Milk Products Co., Oconomowoc.
Dec. 3	Quality Market, Richland Center	O. J. Campbell, Richland Center.
Dec. 6	Brown County Equity Milk Exchange, Green Bay	Brown County Equity Milk Exchange, Green Bay.
Dec. 6	Green Bay Ice Cream Co., Green Bay	Green Bay Ice Cream Co., Green Bay.
Dec. 6	R. C. Theilman, Tomahawk	Swift & Company, St. Paul.
Dec. 6	Arctic Ice Cream Co., Green Bay	Arctic Ice Cream Co., Green Bay.
Dec. 9	Krenzke Brothers, Racine	.....
Dec. 23	Brown County Milk Exchange, Green Bay	Brown County Milk Exchange, Green Bay.
Dec. 30	Princess Market, Milwaukee	Milwaukee Butter Co., Milwaukee.
Dec. 30	Gimbel Brothers, Milwaukee	Milwaukee Butter Co., Milwaukee.
Dec 30	Gimbel Brothers, Milwaukee	Milwaukee Butter Co., Milwaukee.
Dec. 30	Kissinger Market, Milwaukee	Kielsmeier Co., Milwaukee.
Dec. 31	Ralph Sorge, Reedsburg	Central Wisconsin Creamery Co., Reedsburg.
1921		
Jan. 21	Emil Krueger, Eau Claire	Eau Claire Creamery Co., Eau Claire.
Feb. 3	J. A. W. Sprecher, Spring Green	Wisconsin Creamery Co., Sauk City.
Feb. 7	Central Meat Market, Neillsville	F. G. Speich, Pittsville.
Feb. 15	Henry O. Berg, Superior	Atken Towns Creamery, Atken, Minnesota.
Feb. 15	Spindler's Grocery, Superior	Atken Creamery Company, Atken, Minnesota.
Feb. 28	Jos. E. Graf Grocery Store, La Crosse	West Salem Canning Co., West Salem.
Mar. 3	Maiden Rock Hotel, Maiden Rock	.....
Mar. 10	Russel Creamery Co., Superior, Wis.	.....
Mar. 18	Wm. Roney, New Lisbon	Sheboygan Dairy Prod. Co., Stevens Point.
Mar. 30	Wuethrich Bros., Doylestown	Fred Wuethrich, Doylestown.
April 15	Bashaw Valley Co-operative Creamery Co., Shell Lake	.....

Butter—Not Standard

Date	Bought of	Manufacturer or Jobber	Per cent moisture	Per cent fat	Per cent salt and curd
1920					
Aug. 4	S. W. Hines Merc. Co., Cumberland	Cumberland Cry. Co., Cumberland	16.64	79.45	3.91
Aug. 16	Rhinelander Cry. Co., Rhinelander	Rhinelander Cry. Co., Rhinelander	17.82	78.69	3.49
Aug. 16	Rhinelander Cry. Co., Rhinelander	Rhinelander Cry. Co., Rhinelander	15.44	81.35	3.21
Aug. 23	Badger Cry. Co., Mineral Point	Darlington Cry. Co., Darlington	14.66	80.41	4.93
Sept. 22	Robert Ott, Wausau, R. R. 2	Kielsmier Company, Wausau	15.61	80.92	3.47
Sept. 22	Robert Ott, Wausau, R. R. 2	Kielsmier Company, Wausau	16.46	81.61	1.93
Sept. 22	Robert Ott, Wausau, R. R. 2	Kielsmier Company, Wausau	15.41	81.02	3.57
Sept. 25	Rhinelander Cry. & Pro., Rhinelander	Rhinelander Cry. & Produce Company, Rhinelander	16.00	79.94	4.06
Sept. 25	Rhinelander Cry. & Produce Co., Rhinelander	Rhinelander Cry. & Produce Co., Rhinelander	16.30	79.08	4.62
Sept. 25	Rhinelander Cry. & Produce Co., Rhinelander	Rhinelander Cry. & Produce Co., Rhinelander	16.12	80.18	3.70
Sept. 25	Egan & Reardon Grocery Store, Hurley	Ripon Produce Co., Stetsonville	15.72	79.16	5.12
Sept. 25	C. E. Peters, Shawano		18.13	78.26	3.61
Nov. 6	R. P. Kriewaldt, Lynhurst	Rhinelander Pro. Co., Rhinelander	17.11	80.46	.....
Nov. 6	C. E. Peters, Shawano	Kielsmier Co., Wausau	15.90	80.24	.....
Nov. 6	Wm. Werth, Gresham	Fairmont Creamery Co., Green Bay	17.06	79.87	.....
Nov. 6	C. J. Westfahl, Eland	Kielsmeier Co., Wausau	16.00	79.92	.....
Nov. 6	Frank Meyer, Lynhurst	Sheboygan Dairy Products Co., Green Bay	17.81	78.18	.....
Nov. 6	R. P. Kriewaldt, Lynhurst	Rhinelander Cry. Co., Rhinelander	18.78	78.09	.....
Nov. 19	F. E. Kizer, Cambria	A. P. Wilkes, Cambria	15.05	79.68	.....
Nov. 23	Rhinelander Cry. & Produce Co., Rhinelander	Rhinelander Cry. & Produce Co., Rhinelander	19.97	75.47	.....
Nov. 23	Rheaume & Pecar, Rhinelander	Rhinelander Cry. & Produce Co., Rhinelander	19.80	76.52	.....
Nov. 23	Oneida Hotel, Rhinelander	Rhinelander Cry. & Produce Co., Rhinelander	18.13	78.14	.....
Nov. 23	Ripon Produce Co., Marshfield	Ripon Produce Co., Marshfield	16.34	80.53	3.13
Nov. 23	Ripon Produce Co., Marshfield	Ripon Produce Co., Marshfield	16.69	80.20	3.11
Dec. 6	Poynette Cry. Co., Poynette	T. W. Hales, Poynette	14.43	81.02	4.45
Dec. 6	R. M. Meier, Kilbourn	R. M. Meier, Kilbourn	15.00	80.27	4.73
Dec. 6	Sheboygan Dairy Products Co., Green Bay	Sheboygan Dairy Products Co., Green Bay	16.24	79.46	4.30
Dec. 6	R. Stern, Tomahawk	Swift & Company, St. Paul	15.90	79.49	4.61
Dec. 6	Rhinelander Cry. Co., Green Bay	Rhinelander Cry. Co., Green Bay	16.28	80.33	3.39
Dec. 6	Fairmont Creamery, Green Bay	Fairmont Cry. Co., Green Bay	14.82	80.07	5.11
Dec. 9	Taylor Cry. Assn., Taylor	Taylor Cry. Assn., Taylor	14.90	80.03	4.80
Dec. 30	Princess Market, Milwaukee	Kielsmeier Co., Milwaukee	15.88	81.04	3.08
Dec. 30	Kissinger Market, Milwaukee	Kielsmeier Co., Milwaukee	15.83	81.01	3.16
Dec. 31	Deyhle & Schenkat, North Freedom	Beatrice Cry. Co., Chicago	15.32	79.69	4.99
Dec. 31	Baumann Dairy Co., Columbus	S. M. Wahl, Columbus	17.72	78.73	3.55
Dec. 31	Tomahawk Co-op. Dairy, Tomahawk	Tomahawk Co-op. Dairy, Tomahawk	13.06	80.87	6.07
1921					
Jan. 17	Berthiune Brothers, Superior	Moose Lake Cry. Co., Moose Lake, Minn.	15.22	78.93	5.85

Jan.	17	Berthiune Brothers, Superior	Christenson Cry., Superior	15.48	78.21	6.31
Jan.	19	C. F. Spielman, Black Earth	Co-op. Cry. Co., Black Earth	14.64	.....	.....
Jan.	20	Zander Cry. Co., Cross Plains	C. H. Zander, Cross Plains	13.74	.....	.....
Jan.	21	Mrs. J. H. Flynn, Eau Claire	Albertsville Cry., Albertsville	16.67	77.23	6.10
Jan.	26	Badger Cry. Co., Mineral Point	H. E. Nohr, Mineral Point	13.19	.....	.....
Feb.	2	E. H. Tucker, Lodi	Lodi Creamery Co., Lodi	15.95	.....	.....
Feb.	2	Rhinelander Cry. & Produce Co., Rhinelander	Rhinelander Cry. & Produce Co., Rhinelander	15.59	79.61	4.80
Feb.	11	Henry Johnson, Superior	Russel Cry. Co., Superior	17.13	78.41	4.46
Feb.	11	Spindlers Grocery, Superior	Farmers Co-op. Cry., Superior	15.47	79.59	4.94
Feb.	15	Wild Rose Cry. Co., Wild Rose	F. E. McCormick, Wild Rose	14.69	81.29	4.02
Mar.	8	Glenwood City Dairy Union, Glenwood	Boyceville Cry. Co.	15.02	81.68	3.30
Mar.	9	J. A. Peterson, Moose Lake, Minn.	Moose Lake Cry. Co., Moose Lake, Minn.	15.11	78.01	6.88
Mar.	10	Berthiune Bros., Superior	Moose Lake Cry., Moose Lake, Minn.	15.45	79.76	4.79
Mar.	11	Ice Cream & Dairy Co., Green Bay		17.56	79.18	3.26
Mar.	28	C. S. Dernback Grocery Store, Wausau	Mrs. John Farquahar, Wausau	22.28	75.18	2.54
April	14	City Market, Superior	Duluth Cry. & Produce Co., Duluth	15.62	80.27	4.11
April	14	Fritz & Sanford, Superior	Moose Lake Cry. Co., Moose Lake, Minn.	16.13	78.68	5.19
April	14	Grand Union Tea Co., Superior	Grand Union Tea Co., Superior	13.95	80.88	5.17
April	14	Joe Scotte, Superior	Swift & Company, Duluth	16.48	79.91	3.61
May	19	Berthiune Bros., Superior	Moose Lake Cry. Co., Moose Lake, Minn.	16.34	79.28	4.28
June	28	R. J. Kuhn, Port Washington	Kielsmeier Company, Manitowoc	16.02	80.19	3.79
June	29	Biever Gauer & Goll, Port Washington	Riverside Associated Cry. Co., Saukville	15.23	81.12	3.65

Butter Submitted

Date	Submitted by	Remarks
1920		
July 19	Sorge Cond. Milk Co., Cashton	Below standard in fat.
Aug. 27	H. P. Olson, Milwaukee	Standard.
Sept. 3	Jos. Scholtisek, Oconto Falls	Free from foreign fat.
Oct. 8	Chas. Sullivan, Marshfield	Free from foreign fat.
Oct. 8	Mrs. R. M. Hodgson, Mazomanie	Free from foreign fat.
Oct. 24	Mrs. R. E. Porter, Fond du Lac	Free from foreign fat.
Oct. 24	Edward F. Piper, Oconomowoc	Free from foreign fat.
Oct. 24	Peter McClusky, Sandusky	Free from foreign fat.
Nov 7	Mrs. Fred Zeilinger, Cornell	Standard.
Nov. 15	O. R. Meyer, Cedarburg	Free from adulteration.
Nov. 15	O. R. Meyer, Cedarburg	Free from adulteration.
Nov. 20	Federal Inspector	Free from adulteration.
Nov. 20	Chas. J. Hittle, Antigo	Free from adulteration.
Nov. 21	Edw. L. Smith, Avoca	Free from adulteration.
Nov. 23	G. H. Kothlow, Edgerton	Below standard in fat.
Nov. 23	John Backe, Monroe	Free from adulteration.
Nov. 27	Beda M. Olsen, Starks	Free from adulteration.
Dec. 6	Sheb. Dairy Products Co., Sheboygan	Free from adulteration.
Dec. 12	Peter Leschke, Valders	Free from adulteration.
Dec. 13	J. E. Lewis, Oconomowoc	Free from adulteration.
Dec. 13	G. H. Kothlow, Edgerton	Standard.
Dec. 13	La Crosse Board of Health, La Crosse	Free from adulteration.
Dec. 13	Kersten Brothers, Forest Jct.	Free from adulteration.
Dec. 16	Sheb. Dairy Products Co., Sheboygan	Free from adulteration.
Dec. 16	Mrs. Dan Johnson, Wisconsin Rapids	Free from adulteration.
Dec. 30	C. E. Owen, Colfax	Free from adulteration.
1921		
Jan. 7	E. W. Crippen, Sarona	Free from adulteration.
Jan. 24	John Lee, Westley	No foreign fat found.
Jan. 24	W. A. Voigt, Eau Claire	No adulteration found.
Jan. 27	Sheboygan Falls Cry Co., Sheboygan Falls	Free from adulteration.
Jan. 27	Farmer's Store, Eau Claire	Free from adulteration.
Feb. 12	Walker Grocery Company, Plainfield	Free from adulteration.
Feb. 16	W. A. Bristol, Oakfield	Free from adulteration.
Feb. 22	Fred V. Heinemann, Appleton	Free from adulteration.
Feb. 24	L. B. Stuelke, Gillett	Free from adulteration.
Feb. 24	F. Walter, Alma Center	Free from adulteration.
Mar. 1	Mrs. Mat. Jefferding, Black Creek	Free from adulteration.
Mar. 1	L. C. Barton, Hancock	Free from adulteration.
Mar. 9	E. J. Erickson, Larsen	Free from adulteration.
Mar. 16	Jim Falls Co-op. Butter & Cheese Co., Jim Falls	Free from adulteration.
Mar. 19	Henry R. Ebsen, Wisconsin Rapids	Free from adulteration.
Mar. 24	Floyd Daniels, Sparta	Free from adulteration.
April 6	F. H. Joseph, Plainfield	Free from adulteration.
April 22	L. W. Dehne Co., Burnett	Whey Butter, perhaps.
April 23	Mrs. Frank Kugler, Pelican Lake	Free from adulteration.
April 23	Phillips Creamery Co., Phillips	Free from adulteration.
April 23	Northfield Company, Sheboygan	Free from adulteration.
April 29	Elcho Creamery & Produce Co., Elcho	Fishy, oily flavor.
April 29	Elcho Creamery & Produce Co., Elcho	Fishy, oily flavor.
June 12	H. P. Nielson, Deerfield	Standard.
June 13	B. H. Ter Beest, Madison	Standard.
June 14	H. C. Christians, Johnson Creek	Standard.

Cheese—Tested for moisture and found to be in compliance with law for moisture

Date	Bought of	Manufacturer or Jobber
1920		
July 10	Bemis-Hooper-Hays Company, Oshkosh	Skeleton Bridge Cheese Co., Oshkosh.
July 13	F. W. Laabs, Curtiss	Otto Janke, Curtiss.
July 13	F. W. Laabs, Curtiss	Arthur Meier, Medford.
July 13	F. W. Laabs, Curtiss	H. B. Mauel, Owen.
July 13	F. W. Laabs, Curtiss	F. W. Laabs, Curtiss.
July 13	F. W. Laabs, Curtiss	F. W. Laabs, Curtiss.
July 13	C. A. Carlson, Cameron	H. S. Bennett, Turtle Lake.
Aug. 10	H. J. Noyes & Son, Muscoda	Sam McCauley, Avoca.
Aug. 10	H. J. Noyes & Son, Muscoda	Roy Landon, Muscoda.
Aug. 19	C. A. Straubel Cheese Co., Lena	John Ahlswede, Lena.
Aug. 19	Pauly & Pauly, Merrillan	Fred W. Koller, Ettrick.
Sept. 16	Wisconsin Cheese Producers' Fed., Spring Green	H. D. Brickle, Spring Green.
Sept. 25	H. Blanke, Plymouth	Peter Pauly, Saukville.
Sept. 25	B. Schreiber Sheboygan	John Gasse, Sheboygan.
Sept. 30	Peacock Cheese Company, Madison	C. A. Martin, De Forest.
Sept. 30	Peacock Cheese Company, Madison	C. A. Martin, De Forest.
Sept. 30	Creasy Corporation, Madison	Torge Goderstad, Black Earth.
Oct. 7	John Kurtz, Horicon	
Oct. 7	John Wuethrich, Horicon	
Oct. 7	Robert Grouert, Burnett	
Oct. 12	S. J. Miesen, Campbellsport	S. J. Miesen, Campbellsport.
Oct. 12	Wisconsin Cheese Prod. Fed., Spring Green	H. D. Brickle, Spring Green.
Oct. 13	Straubel Cheese Company, Antigo	Herman Brei, Bavaria.
Oct. 13	Straubel Cheese Company, Antigo	W. L. Plzak, Bryant.
Oct. 20	C. E. Blodgett Cheese Co., Greenwood	John Wuethrich, Greenwood.
Oct. 25	C. A. Strauble Co., Gillett	Carl Linzmeyer, Lena.
Oct. 26	County Corners Cheese Factory, Clear Lake	Chas. Renson, Cumberland.
Oct. 26	Lorane Dairy Co., Lewis	Lorane Dairy Co., Lewis.
Oct. 26	Besleston Cheese Co., Cumberland	Besleston Cheese Co., Cumberland.
Oct. 26	Virmillion Cheese Co., Cumberland	Ast Cheese Co., Cumberland.
Oct. 26	Andrus Cheese Co., Andrus	Andrus Cheese Co., Cumberland.
Oct. 26	McKinily Cheese Co., Lorane	McKinily Cheese Co., Lorane.
Oct. 29	Winnebago Cheese Co., Fond du Lac	Joe Schmid, Beaver Dam.
Oct. 29	Winnebago Cheese Co., Fond du Lac	Lime Rock Dairy Association, Malone.
Oct. 29	Winnebago Cheese Co., Fond du Lac	George Nitschke, Fond du Lac.
Oct. 29		Pauly & Pauly, Green Bay.
Nov. 4	Stanley Cheese Factory, Stanley	George Drace, Stanley.
Nov. 4	Hillside Dairy Co., Stanley	Hillside Dairy Co., Stanley.
Nov. 4	Junction Valley Cheese Co., Stanley	Junction Valley Cheese Co., Stanley.

Cheese—Tested for moisture and found to be in compliance with law for moisture

Date	Bought of	Manufacturer or Jobber
1920		
Nov. 4	Standard Cheese Co., Stanley	Standard Cheese Co., Stanley.
Nov. 4	West Worden Dairy Co., Stanley	West Worden Dairy Co., Stanley.
Nov. 12	Pauly & Pauly, Merrillan	R. C. Ryman, Hillsboro.
Nov. 12	Pauly & Pauly, Merrillan	Spring Creek Cheese Co., Black River.
Nov. 12	Pauly & Pauly, Merrillan	South Alma Cheese Co., Alma Center.
Nov. 19	Dairy Belt Cheese Co., Spencer	Wm. Weighman, Spencer.
Nov. 19	C. E. Blodgett, Stanley	August Ehlert, Stanley.
Nov. 19	G. E. McCann, Madison	Gould-Wells & Blackburn, Madison.
Nov. 19	C. E. Blodgett, Stanley	August Ehlert, Stanley.
Nov. 29	H. E. Austin, Boscobel	Marietta Ch. Factory, Boscobel.
Nov. 29	S. J. Steven's Co., Campbellsport	Fred Borchert, Kewaskum.
Nov. 29	S. J. Steven's Co., Campbellsport	H. J. Wondra, Campbellsport.
Dec. 4	Wis. Ch. Prod. Fed., Spring Green	Coon Rock Ch. Factory, Arena.
Dec. 4	Wis. Ch. Prod. Fed., Spring Green	John Severson, Arena.
Dec. 6	C. Straubel Co., Green Bay	.....
Dec. 6	Brown Co. Equity Milk Ex., Green Bay	Brown Co. Equity Milk Ex., Green Bay.
Dec. 6	C. A. Carlson, Cameron	David Gobeli, Bruce.
Dec. 8	Bemis-Hooper-Hays Co., Oshkosh	Skeleton Bridge Ch. Fact'y, Oshkosh.
Dec. 13	Pauly & Pauly, Merrillan	Town Creek Co-op. Ch. Co., Black River Falls.
Dec. 13	Pauly & Pauly, Merrillan	R. C. Ryman, Hillsboro.
Dec. 13	Pauly & Pauly, Merrillan	South Alma B. & Ch. Assn., Alma Center.
Dec. 13	Pauly & Pauly, Merrillan	Alma Center Co-op. Cry. Co., Alma Center.
Dec. 21	Dassow Cry. Co., Sheboygan Falls	Dassow Cry. Co., Sheboygan Falls.
Dec. 23	Kraft Cheese Co., Wausau	Paul Lemke, Wausau.
Dec. 27	Plymouth Mercantile Co., Plymouth	Kraft & Co., Chicago.
1921		
Jan. 6	Kraft & Co., Plymouth	Quinney Butter & Ch. Co., Chilton.
Jan. 14	Pauly & Pauly, Green Bay	J. W. Serrahn, Perronville, Mich.
Jan. 27	Central Wis. Ch. Makers, Marshfield	.....
Jan. 27	S. J. Stevens Co., Campbellsport	Fred Borchert, Kewaskum.
Feb. 1	Schmitt Brothers, Spring Green	Mounds Creek Cheese Co., Blue Mounds.
Feb. 16	Dow Cheese Co., Merrill	Devils Creek Co-op. Dairy Co., Merrill.
Feb. 16	Dow Cheese Co., Merrill	Edward Baernke, Wausau.
Feb. 16	F. H. Leitzke, Merrill	M. J. Leinweber, Wausau.
Feb. 21	C. A. Straubel Co., Green Bay	George Batan, Jr., Wrightstown.
Mar. 17	C. E. Blodgett Cheese, Wisconsin Rapids	Carson Cheese Co., Stevens Point.
Mar. 24	Dow Cheese Co., Thorp	Fred Greve, Thorp.
Mar. 30	J. H. Wheeler & Co., Birnamwood	William Theisen, Birnamwood.

Mar. 30	Wuethrich Brothers, Doylestown	Fred Wuethrich, Doylestown.
April 7	Dairy Belt Cheese Co., Spencer	George Zentner, Vesper.
April 7	A. L. A. Matthias, Loyal	A. L. A. Matthias, Loyal.
April 7	C. A. Straubel Cheese Co., Denmark	Stephen Luidzinski, Denmark.
April 8	Kraft Cheese Co., Wausau	Paul E. Lemke, Wausau.
April 8	C. E. Blodgett Cheese Co., Marshfield	Otto Hiller, Vesper.
April 14	Dow Cheese Co., Curtiss	Paul A. Jaeger, Ladysmith.
April 14	Dow Cheese Co., Curtiss	M. F. Krings, Curtiss.
April 20	Pauly & Pauly, Merrillan	Spring Creek Cheese Co., Black River Falls.
April 23		William Beumers, Junction City.
April 28	Schmitt Brothers, Spring Green	Jahneke, Cottage Grove.
May 13	C. E. Blodgett C. B. & Egg Co., Greenwood	John Wuethrich, Greenwood.
May 14	C. E. Blodgett C. B. & Egg Co., Marshfield	
May 20	Peacock Cheese Co., Platteville	Pollar Cheese Co., Platteville.
May 31	Pauly & Pauly, Merrillan	Shady Glen Cheese Factory, Hixton.
June 17	Wisconsin Cheese Prod. Fed., Spring Green	Albert Wilhelm, Plain.
June 17	Wisconsin Cheese Prod. Fed., Spring Green	Tilden Cheese Co., Watertown.
June 22	Cheese Federation, Plymouth	Hugo Kaufman, Plymouth.
June 27	Pauly & Pauly, Merrillan	Squaw Creek Cheese Co.

Cheese—Tested for moisture and found to contain more than the permitted amount of moisture

Date	Kind	Bought of	Manufacturer or Jobber	Per cent moisture	Remarks
1920					
July 6	American	H. C. Prange Co., Sheboygan	Kraft & Co., Chicago	29.73	Not standard in that moisture free solids are below 50%.
July 10	Brick	Bemis-Hooper-Hays, Oshkosh	Skeleton Bridge Cheese Co., Oshkosh	45.36	
July 10	Brick	Bemis-Hooper-Hays Co., Oshkosh	Skeleton Bridge Cheese Co., Oshkosh	44.90	
July 13	American	Rudolph Stock, Colby	Rudolph Stock, Colby	40.28	
July 19	American	C. E. Blodgett Cheese Co., Wisconsin Rapids	Fred C. Justman, Wisconsin Rapids	42.68	
July 19	American	Fred C. Justman, Wisconsin Rapids	Fred C. Justman, Wisconsin Rapids	40.10	
Sept. 20	Brick	Nick Simons, Appleton	G. H. Mueller, Theresa	42.68	
Sept. 20	Brick	Wm. Remmel, Theresa	Wm. Remmel, Theresa	37.81	Below standard in ratio of fat to moisture free solids.
Sept. 25	American	Wis. Ch. Prod. Fed., Plymouth	Hugo Kaufman, Plymouth	47.41	
Sept. 25	American	Wis. Ch. Prod. Fed. Plymouth	W. O. Stanton, Sheboygan Falls	44.10	
Sept. 25	American	Wis. Ch. Prod. Fed., Plymouth	W. O. Stanton, Sheboygan Falls	41.39	
Sept. 25	American	B. Schreiber, Sheboygan	O. H. Voechting, Sheboygan	41.57	
Sept. 25	American	Plymouth Cheese Co., Plymouth	R. D. Birkett, Oostburg	41.09	
Oct. 7	American	Christian Schlicker, Burnett		41.76	

Cheese—Tested for moisture and found to contain more than the permitted amount of moisture

Date	Kind	Bought of	Manufacturer or Jobber	Per cent moisture	Remarks
1920					
Oct. 20	American	Dow Cheese Co., Curtiss	Burt Hinkle, Medford	40.48	
Oct. 20	American	Dow Cheese Co., Curtiss,	Louis Tchorer, Curtiss	40.20	
Oct. 20	American	F. D. Laabs, Curtiss	Fred Greve, Thorp	41.44	
Oct. 20	American	Theodore Braun, Greenwood	Theodore Braun, Greenwood	40.80	
Oct. 26	American	Maple Ridge Ch. Co., Comstock	Maple Ridge Ch. Co., Cumberland	41.47	
Nov. 4	American	Deer Brook Ch. Factory, Stanley	August Ehlert, Stanley	40.25	
Nov. 15	American	C. A. Carlson, Cameron	Spring Valley Factory, Spring Valley	41.12	
Nov. 17	Brick	Winnebago Cheese Co., Fond du Lac	John Rubner, Hartford	46.43	
Nov. 17	American	A. F. Westphal Cheese House, Fond du Lac	Gottfried Bachman, Oshkosh	44.55	
Nov. 19	American	N. W. Egg & Poultry Co., Eau Claire	August Ehlert, Stanley	40.58	
Nov. 29	American	Wis. Ch. Prod. Fed., Spring Green	Frank Williams, Spring Green	41.78	
Nov. 29	Brick	A. F. Westphal Cheese House, Fond du Lac	Ed. Bartlett, West Bend	43.98	
Nov. 29	Brick	Schmitt Bros., Spring Green	Willow Creek Ch. Factory, Arena	43.86	
Nov. 29	American	Wis. Ch. Prod. Fed., Spring Green	Joseph Bauer, Spring Green	42.70	
Nov. 29	American	Dow Cheese Company, Fond du Lac	Wm. De Munck, Calvary	41.96	
Nov. 29	American	S. J. Steven's Co., Campbellsport	George German, Campbellsport	42.58	
Dec. 4	American	Wis. Ch. Prod. Fed., Spring Green	Clark McCutcheon, Spring Green	42.51	
Dec. 6	Brick	Winnebago Cheese Co., Fond du Lac	E. J. Roll, Mayville	44.31	
Dec. 6	American	Brown Co. Equity Milk Exchange, Green Bay	Brown Co. Equity Milk Exchange, Green Bay	39.33	Low fat.
Dec. 6	American	Straubel's Warehouse, Green Bay	Brown Co. Equity Milk Exchange, Green Bay	38.32	Low fat.
Dec. 7	American	Pauly & Pauly, Sturgeon Bay	L. E. Evanson, Ellison Bay	41.58	
Dec. 7	Brick	Winnebago Cheese Co., Fond du Lac	Herman Koepsel, Mayville	43.39	
Dec. 10	Brick	Bemis-Hooper-Hays Co., Oshkosh	Skeleton Bridge Ch. Factory, Oshkosh	42.73	
Dec. 13	American	Schmitt Bros., Blue River	Chester Peterson, Blue River	43.61	
Dec. 17	American	J. H. Wheeler, Dodgeville	W. L. Schulke, Barneveld	40.41	
Dec. 23	American	Kraft Cheese Co., Wausau	E. C. Brown, Wis. Rapids	42.85	
Dec. 23	American	Brown Co. Milk Exchange, Green Bay	Brown County Milk Exchange, Green Bay	36.13	Contains less than 50% fat in the moisture free solids.
Dec. 23	American	Brown Co. Milk Exchange, Green Bay	Brown County Milk Exchange, Green Bay	39.37	Low fat.
Dec. 23	American	Brown Co. Milk Exchange, Green Bay	Brown Co. Milk Exchange, Green Bay	38.80	Low fat.
Dec. 23	American	Brown Co. Milk Exchange, Green Bay	Brown Co. Milk Exchange, Green Bay	39.17	Low fat.
Dec. 23	American	Brown Co. Milk Exchange, Green Bay	Brown Co. Milk Exchange, Green Bay	35.51	Contains less than 50% fat in the moisture free solids.
Dec. 27	American	Winnebago Cheese Co., Fond du Lac	Strachota Bros., Campbellsport	41.94	
Dec. 29	American	Algoma Produce Co., Algoma	Harry Maedke, Algoma	40.95	
Dec. 31	Brick	Badger Cheese Co., Monroe		48.09	
Dec. 31	American	Wis. Ch. Prod. Fed., Plymouth	Wm. Meyer, Black Creek	42.57	Not standard. Too high in moisture.
Dec. 31	American	Wis. Ch. Prod. Fed., Plymouth	Wm. Meyer, Black Creek	42.26	Excessive moisture. Not standard.

1921					
Jan. 3	Brick	William Fassbender, Richfield	William Fassbender, Richfield	45.62	
Jan. 7	American	Winnebago Cheese Co., Fond du Lac	H. J. Luthey & A. Brash, Oshkosh	41.43	
Jan. 8	Brick	J. E. Hoffmann, Mt. Horeb	Holum Cheese Co., Verona	46.82	
Jan. 8	Brick	J. E. Hoffmann, Mt. Horeb	Kelly Hill Cheese Co., Verona	45.48	
Jan. 11	American	S. J. Stevens Co., Campbellsport	O. W. Bartlett, Campbellsport	40.58	
Jan. 11	American	S. J. Stevens Co., Campbellsport	N. P. Strobel, Campbellsport	43.93	
Jan. 13	Brick	Winnebago Cheese Co., Fond du Lac	Joe Schmid, Beaver Dam	43.91	
Jan. 24	Brick	C. A. Carlson Co., Cameron	David Gobeli, Bruce	47.59	
Jan. 24	American	C. E. Blodgett, Rice Lake	Paul A. Jaeger, Ladysmith	44.50	
Jan. 26	American	Kraft Bros. Ch. Co., Marshfield	Kraft Bros. Ch. Co., Plymouth	43.45	Adulterated. High in moisture.
Jan. 31	American	Dow Cheese Co., Fond du Lac	Frank Ruland, Oshkosh	44.11	
Mar. 7	American	Winnebago Cheese Co., Fond du Lac	Rudolph Rusch, Greenwood	41.77	
Mar. 24	American	Dow Cheese Co., Thorp	Fred Greve, Thorp	41.38	
Mar. 25	American	C. E. Blodgett Ch. Co., Stratford	G. C. Meyer, Marshfield	40.82	
April 1	American	Dow Cheese Co., Merrill	Paul E. Lemke, Wausau	40.53	
April 4	American	C. E. Blodgett Ch. Co., Marshfield	Mr. Jorgenson, Mill Creek Ch. & Btr. Co., Stevens Point	40.19	
April 7	American	C. A. Straubel Ch. Co., Denmark	A. E. Lenz, De Pere	40.76	
April 12	American	Kraft Bros. Ch. Co., Watertown	G. A. Stallman, Watertown	43.79	
April 14	American	F. W. Laabs, Curtiss	Jacob Hamm, Curtiss	43.40	
April 15	American	C. A. Carlson Co., Cameron	Jacob Rothebenchler, Prairie Farm	44.97	
April 22	American	John Kirkpatrick, Lone Rock	Maple Row Cheese Factory, Lone Rock	40.77	
April 23	American		Fred Thieler, Humbird	40.00	
April 23	American		Adolph Joss, Loyal	39.24	
April 23	American		Chili Dairy Co., Chili	39.14	
April 26	Brick	Aug. Westphal Cheese Co., Monroe		48.60	
April 26	Brick	Badger Cheese Co., Monroe		44.72	
April 26	Brick	Badger Cheese Co., Monroe		46.15	
April 26	Brick	Aug. Westphal Cheese Co., Monroe		43.38	
April 26	Brick	Badger Cheese Co., Monroe		45.43	
April 27	American		G. C. Sampe, Colby	44.25	
April 28	Brick	Cold Storage Co. of Arn. & Zweifel Ch. Factory, Monticello		43.04	
April 28	American	Wis. Ch. Prod. Fed., Spring Green	Vermont Cheese Factory, Black Earth	39.65	
April 29	American		D. E. Norleen, Abbotsford	43.78	
April 29	American		D. E. Norleen, Abbotsford	40.00	
May 5	American		Edw. Brunner, Athens	42.56	
May 6	American		D. E. Norleen, Abbotsford	40.06	
May 6	American		Geo. H. Zentner, Vesper	38.85	
May 6	American		D. E. Norleen, Abbotsford	40.10	
May 13	American	C. E. Blodgett C. B. & Egg Co., Greenwood	Wm. Laabs, Greenwood	38.80	
May 14	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Louis Gey Factory, Marshfield	39.77	
May 20	American	Peacock Cheese Co., Platteville	Pollar Cheese Co., Platteville	44.57	
May 27	Elkhorn	Bur Grocery Company, Green Bay	J. L. Kraft & Co., Chicago	38.81	
June 6	American	Clover Belt Dairy Co., Spencer	George Zentner, Vesper	38.67	
June 6	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Ludwig Kuhn, Neillsville	40.51	

Cheese—Submitted Samples

Date	Submitted by	Per cent moisture	Remarks
1920			
Oct. 6	Forest Dairy Association, Fond du Lac	40.02	Standard.
Dec. 14	August Westphal, Hartford	44.01	Not standard.
1921			
Jan. 6	Louis Dabbratz Co., Milwaukee	36.95	Not standard, contains less than 50% fat in moisture free solids.
Jan. 26	Dow Cheese Company, Thorp	44.44	High moisture. Not legal.
Feb. 2	H. N. Harwood, Tavera	40.34	Not standard. Excessive moisture.
Feb. 10	C. F. Franke, Ashippun	40.24	Standard.
Feb. 10	Chas. Hopperdietze, Athens	38.53	Standard.
Feb. 24	A. D. De Land Company, Sheboygan	37.20	Standard.
Mar. 10	Dr. Kahlenberg, Madison	37.80	Standard.
Mar. 14	W. Winder, Madison	41.98	High moisture. Not standard.
May 13	Wisconsin Cheese Federation, Plymouth	41.40	No foreign fat found. Steam distillation gave a phenol-like smelling substance.
May 25	Sen. H. Bilgrien, Dodge County, Iron Ridge	41.49	Slightly skimmed.
May 25	Sen. H. Bilgrien, Dodge County, Iron Ridge	38.02	Standard.
May 25	Sen. H. Bilgrien, Dodge County, Iron Ridge	37.20	Standard.
May 25	Sen. H. Bilgrien, Dodge County, Iron Ridge	39.86	Standard.

Cream from City Supply—Standard

Date	Delivered by	City	Date	Delivered by	City
1920			1921		
Oct. 16	A. S. Krause	Plymouth.	Jan. 10	Virtue Sisters	Hudson.
Dec. 7	J. Struhars	Kenosha.	Mar. 17	J. A. Phillips	Chippewa Falls.
Dec. 29	Wm. Gade	Reedsburg.	April 5	Perry Brothers	Ft. Atkinson.
Dec. 29	Central Wisconsin Creamery Co.	Reedsburg.	April 5	Perry Brothers	Ft. Atkinson.
			April 5	Perry Brothers	Ft. Atkinson.
			April 7	Perry Brothers	Ft. Atkinson.
			May 29	Paul Hortenbach	Bay City.
			June 13	Mott & Wood Co.	Wisconsin Rapids.
			June 13	Mott & Wood Co.	Wisconsin Rapids.

Cream from City Supply—Not Standard

Date	Delivered by or bought of	City	Per cent milk fat	Date	Delivered by or bought of	City	Per cent milk fat
1920							
Dec. 2	Mrs. L. Kolberg, Rhinelander	Rhinelander	15.50	Jan. 21	Oscar Ballerude, Eau Claire	Eau Claire	16.00
Dec. 6	W. Brews, Kilburn	Kilburn	15.00	Jan. 21	G. W. Lorentz & Son, Eau Claire	Eau Claire	16.00
Dec. 8	Henry Donnatell, Spooner	Spooner	10.80	Feb. 4	B. Lavalle, Chippewa Falls	Chippewa Falls	14.00
Dec. 9	A. J. Becker, Hurley	Hurley	14.00	Feb. 10	Henry Donnatell, Spooner	Spooner	10.00
Dec. 11	Krenzke Bros., Racine	Racine	15.20	Feb. 17	R. S. Schultz, Deerfield	Deerfield	14.00
Dec. 11	O. C. Stearns, Kenosha	Kenosha	16.00	Feb. 28	John Krause, Onalaska	La Crosse	14.50
Dec. 23	Rhinelander Cafe, Rhinelander	Rhinelander	13.00	Feb. 28	Robert Hoeth, La Crosse	La Crosse	17.00
Dec. 28	William Frederick, Watertown	Watertown	16.00	Feb. 28	Herman Roesler, La Crosse	La Crosse	15.00
				Feb. 28	H. W. Hauser, La Crosse	La Crosse	12.00
1921				Mar. 7	La Crosse Hygienic Dairy, La Crosse	La Crosse	17.00
Jan. 6	Stoughton Pure Milk Co., Stoughton	Stoughton	13.00	Mar. 12	M. M. Chase, Oshkosh	Oshkosh	17.0
Jan. 10	Ed. O. Hoven, Superior	Superior	17.00	Mar. 12	D. R. Van Buren, Oshkosh	Oshkosh	16.00
Jan. 13	J. C. Leonigs & Son, Superior	Superior	16.75	Mar. 12	B. W. Thero, Oshkosh	Oshkosh	16.40
Jan. 10	Central Co-op. Cry. Assn., Superior	Superior	15.80	Mar. 18	Fischer & Co., Wisconsin Rapids	Wisconsin Rapids	16.00
Jan. 10	Central Co-op. Cry. Assn., Superior	Superior	15.25	Mar. 28	Herman Nante & Son, Hartford	Hartford	12.60
Jan. 10	Russell Cry. Co., Superior	Superior	15.00	Mar. 28	Carvers Ice Cream Co., Oshkosh	Oshkosh	17.00
Jan. 21	G. W. Lorentz & Son, Eau Claire	Eau Claire	16.00	April 28	Nottlemann Bros., Oshkosh	Oshkosh	16.40
Jan. 21	Fred Hefty, Eau Claire	Eau Claire	16.20	April 28	Carvers Ice Cream Co. Oshkosh	Oshkosh	17.00

Cream—Submitted

Date	Submitted by	Remarks
1920		
July 20	Mr. Albert Ventzke, Fall Creek	Standard.
July 22	S. C. Craven, Platteville	Standard.
July 28	G. Peterson, Crandon	Standard.
July 30	Bert McKinney, Mineral Point	Standard.
Aug. 9	Heinz Rest, Sauk City	Watered cream.
Sept. 4	The Dairy Products Co., Lancaster	Standard.
Sept. 6	A. E. James, Antigo	Cream in very poor condition.
Sept. 9	Farmers Equity Co. Exchange, Muscoda	
Sept. 20	Clyde Roth, Muscoda	Standard.
Sept. 25	New Hudson Road Creamery Co., Menomonie	Free from foreign fat.
Jan. 1	Dairy Products Co., Lancaster	Standard.

Cream—Submitted

Date	Submitted by	Remarks
1920		
Jan. 31	Nora Creamery Co., Deerfield	Above standard.
Feb. 2	New Lisbon Co-op. Creamery, New Lisbon	Above standard.
Feb. 24	Dairy Products Co., Lancaster	Standard.
Feb. 28	Kielsmier Co., Manitowoc	Standard.
Mar. 1	Adolph Kimbel, Cassville	Standard.
Mar. 9	Robert Godfrey, Glenbeulah	Standard.
April 27	Andrew Haugen, Prairie Farm	Standard.
May 14	Andrew Haugen, Prairie Farm	Standard.
May 14	Atlee Midje, Prairie Farm	Standard.
May 14	Matt Kivi, Hurley	Standard.
May 20	John Abendroth, Waterloo	Standard.
May 22	Hans Preston, Prairie Farm	Standard.
May 24	Dodge Creamery, Dodge	Standard.
1921		
May 24	L. J. Burgdorff, Brooks	Standard.
June 6	B. A. Johnson, Rice Lake	Standard.
June 17	Dairy Products Co., Lancaster	Standard.

Cream Samples Tested for Per Cent of Butter Fat to Determine Overreading or Underreading of Babcock Test.

During the period covered by this report, twenty-six samples of cream were collected by members of the commissions with the view of determining whether or not overreading or underreading of the Babcock Test was being practiced by the purchasers of cream who were paying for the same on the basis of the butter fat contained therein as determined by the Babcock Test. The percentage of fat in these samples was determined in the laboratory.

Ice Cream—Standard

Date	Bought of	Manufactured by
1920		
June 25	The Modern Dairy, Green Bay	The Modern Dairy, Green Bay.
Sept. 21	L. D. Booras & Sons, Rhinelander	L. D. Booras & Sons, Rhinelander.
Dec. 2	Rouman Brothers, Tomahawk	Rouman Brothers, Tomahawk.
1921		
Jan. 12	Hoffman's Restaurant, Lancaster	Hoffman's Restaurant, Lancaster.
Feb. 24	Booras & Sons Confectionery, Rhinelander	Booras & Sons, Rhinelander.
May 2	Olympic Candy Shop, Madison	Olympic Candy Shop, Madison.
June 7	Eugene Locher, Argyle	Freeport Dairy Produce Co., Freeport.
June 7	Joe Graham, Blanchardville	Freeport Dairy Produce Co., Freeport.
June 13	William H. Robb, Blanchardville	Freeport Dairy Produce Co., Freeport.

Ice Cream—Not Standard

Date	Bought of or submitted by	Manufacturer or Jobber	Per cent milk fat
1920			
July 6	Arctic Ice Cream Company, Green Bay	Arctic Ice Cream Company, Green Bay	10.17
July 19	Carl Krohn, Madison		7.87
Aug. 7	Fluegel's Princess Ice Cream & Confectionery Store, Wausau	Fluegel's Princess Ice Cream & Confectionery Store, Wausau	11.51
Aug. 16	J. Borias, Rhinelander	L. D. Borias & Sons, Rhinelander	9.96
Aug. 16	J. Marquardt, Rhinelander	Rhinelander Creamery Co., Rhinelander	9.52
Aug. 16	Zoler Brothers, Waukesha	Kellogg Ice Cream Company, Burlington	13.11
Aug. 16	D. Condos, Waukesha	Session Ice Cream Co., Fond du Lac	9.52
Aug. 16	Kenosha Ice Cream Co., Kenosha	Kenosha Ice Cream Co., Kenosha	11.84
Aug. 16	H. J. Condon, Kenosha	H. J. Condon, Kenosha	9.96
Aug. 17	Buffalo Candy Kitchen, Racine	Buffalo Candy Kitchen, Racine	11.01
Aug. 17	George Mazurine, Racine	George Mazurine, Racine	12.98
Aug. 17	Wm. Hallerstadt, Racine	Wm. Hallerstadt, Racine	11.78
Aug. 17	Racine Pure Milk Co., Racine	Racine Pure Milk Co., Racine	11.26
Aug. 17	A. Mazurine, Racine	A. Mazurine, Racine	9.77
Sept. 16	Hurtgen Dairy Co., Oconomowoc	Hurtgen Dairy Co., Oconomowoc	12.44
Sept. 17	Carl Krohn, Madison		6.90
Sept. 18	Storck Brewing Co., Schleisingerville	Storck Brewing Co., Schleisingerville	10.90
Sept. 19	Carl Krohn, Madison		12.13

Ice Cream—Not Standard—Continued

Date	Bought of or Submitted by	Manufacturer or Jobber	Per cent milk fat
1920			
Sept. 25	Chocolate Shop, Rhinelander	Rhinelander Creamery and Produce Co., Rhinelander	10.54
Sept. 25	Chocolate Shop, Rhinelander	Rhinelander Creamery and Produce Co., Rhinelander	13.84
Oct. 5	Ewald T. Krueger, Montello	Ewald T. Krueger, Montello	13.98
Oct. 23	M. Luzzeroni, Lake Geneva	Gibbs Ice Cream Co., Genoa Junction	12.18
Nov. 15	Rice Lake Drug Store, Rice Lake	G. O. Gustafson, Rice Lake	11.51
1921			
Jan. 4	Young & Boerner, La Crosse		12.00
Feb. 24	The Chocolate Shop, Rhinelander	Rhinelander Cry. & Produce, Rhinelander	11.12
Feb. 24	Puritan Ice Cream, Portage	Puritan Ice Cream Co., Portage	9.25
Mar. 21	Lueks Cigar Store, Portage	Puritan Ice Cream Co., Portage	8.98
Mar. 24	C. Bundy, Durand	Geo. Garlid, Durand	11.08
April 14	Paul Hortenback, Bay City	Paul Hortenback, Bay City	4.94
May 2	F. S. Rodger, Sr., Madison	F. S. Rodger, Sr., Madison	10.24
June 6	L. S. Ryan, Blanchardville	Allen Ice Cream Co., Rockford	9.80
June 7	Mike Weneher, Argyle	John Wagner, Freeport	10.14
June 7	J. Gregory, Janesville	Cronin Dairy & Creamery Co., Janesville	10.52
June 7	John Wahler, Argyle	Allen Ice Cream Co., Rockford	9.96
Dec. 29	Ideal Restaurant, Reedsburg	Central Wisconsin Creamery Co., Reedsburg	11.49

Milk Delivered at Cheese Factories or Creameries—Standard

Date	Sold or Delivered by	Delivered to
1920		
July 16	T. Baxter, Linden	Linden Farmers Ch. Factory, Linden.
July 19	Phillip Hese, Loganville	Smith Hollow Ch. Factory, Loganville.
Aug. 16	J. Hapan Bros., Belmont	Staver Cheese Factory, Belmont.
Aug. 23	Andrew Kliest, Avoca	Standard Cheese Factory, Avoca.
Aug. 23	Henry Kliest, Avoca	Standard Cheese Factory, Avoca.
Oct. 7	Aug. Koltermann, Mayville	Fair View Cheese Factory, Mayville.
Oct. 7	Aug. Fenchst, Mayville	Fair View Cheese Factory, Mayville.
Oct. 7	Albert Aldermeyer, Mayville	Fair View Cheese Factory, Mayville.

Oct. 9	Anna Rommelfanger, Sheboygan Falls	Dassow Creamery Co., Sheboygan Falls.
Nov. 19	Prairie Queen Cheese Factory, Muscoda	H. Marms & Bros. Grocery, Muscoda.
1921		
Feb. 5	Wm. Luttrop, Hartford	Henry Juergens & Co., Hartford.
Feb. 5	John Endrus, Hartford	Henry Juergens & Co., Hartford.
Mar. 7	Frank Elske, Reeseville	Lowell Ch. Factory, Reeseville.
Mar. 8	Robert Brown, Monroe	Lemon Ch. Factory, Monroe.
Mar. 8	E. Nicholous, Shawano	Lime Kiln Ch. & Bt. Co., Shawano.
Mar. 8	I. Nicholous, Shawano	Lime Kiln Ch. & Bt. Co., Shawano.
Mar. 8	F. Buissewitz, Shawano	Lime Kiln Ch. & Bt. Co., Shawano.
Mar. 8	H. Zuelsdorf, Shawano	Lime Kiln Ch. & Bt. Co., Shawano.
Mar. 8	F. W. Humphrey, Shawano	Shawano Creamery Co., Shawano.
Mar. 8	Leo Schultz, Shawano	Shawano Creamery Co., Shawano.
Mar. 8	Mrs. Wm. Johannes, Shawano	Lime Kiln Ch. & Bt. Co., Shawano.
Mar. 8	Wm. Dahues, Shawano	Lime Kiln Ch. & Bt. Co., Shawano.
Mar. 21	P. Dorn, Stanley	Pine Grove Cheese Factory, Stanley.
April 5	Herman Tabbert, Birnamwood	Amity Cheese Factory, Birnamwood.
April 5	Herman Tabbert, Birnamwood	Amity Co-op. Cheese Co., Birnamwood.
April 5	Jas. Shaker, Hillsboro	Hillsboro Cry. Co.'s. Cheese Factory, Hillsboro.
April 7	George Guthjahr, West Bend	Kohlsville Dairy Co., West Bend.
April 12	O. Hilamann, Watertown	Van Kamp Pkg. Co., Jefferson.
April 16	George Schwartz, Jr., Chilton	Charlsburg Cheese Factory, Chilton.

Milk—Not Standard—Delivered to Cheese Factories, Creameries, Condenseries, or City Milk Dealers

Date	Sold or delivered by	Sold or delivered to	Sp. G 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey 20° C.	Remarks
1920								
July 6	Rufer Bros., Monroe	Teehan Cheese Factory, Monroe	1.0315	3.00	11.25	8.25	.....	Below standard in solids not fat.
July 21	Bristol & Son, Beaver Dam	Buckhorn Cheese Factory, Beaver Dam	1.0287	3.00	10.64	7.64	39.05	Not standard, water added.
Aug. 3	Del. Woodruff, Logansville	Smith Hollow Cheese Factory, Logansville	1.0285	2.8	10.53	7.73	37.9	Adulterated.
Aug. 16	Leo. Weedig, Belmont	Staver Factory, Belmont	1.0294	3.27	11.28	8.01	40.25	Not standard.
Aug. 16	F. O. Haim, Belmont	Staver Factory, Belmont	1.0284	3.2	11.09	7.89	37.8	Not standard.
Aug. 21	Theo. Vinger, Argyle	Flint-Vinger Cheese Factory, Argyle	1.0295	3.47	11.51	8.04	39.0	Trace of water.
Aug. 25	Fred Kessler, Janesville	Star Cheese Factory, Janesville	1.0293	3.43	11.54	8.11	38.5	Not standard.
Aug. 25	Fred Doubleday, Janesville	Star Cheese Factory, Janesville	1.0276	3.25	10.94	7.69	38.2	Not standard.
Aug. 25	John Crainer, Janesville	Star Cheese Factory, Janesville	1.0284	3.70	11.68	7.98	38.55	Not standard.
Aug. 25	Thony Anderson, Janesville	Star Cheese Factory, Janesville	1.0284	3.60	11.58	7.98	39.4	Watered.

Milk. Not Standard. Delivered to Cheese Factories, Creameries, Condenseries, or City Milk Dealers—Continued

Date	Sold or delivered by	Sold or delivered to	Sp. G 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey 20° C.	Remarks
1920								
Aug. 25	John Baatscher, Janesville	Star Cheese Factory, Janesville	1.0299	3.38	11.47	8.09	40.1	Below standard in solids not fat.
Aug. 26	Nutricia Farms, Thiensville	Thiensville Milk Plant, Thiensville	1.0305	2.9	11.16	8.26	39.9	Below standard in fat and solids not fat.
Aug. 26	Geo. Dowe, Grafton	Thiensville Milk Plant, Thiensville	1.0284	4.0	11.97	7.97	38.8	Below standard in solids not fat.
Aug. 26	Herman Selle, Thiensville	Thiensville Milk Plant, Thiensville	1.0296	3.7	11.95	8.25	39.8	Below standard in solids not fat.
Aug. 26	Otto Mueller, Cedarburg	Thiensville Milk Plant, Thiensville	1.0295	4.5	12.72	8.22	40.05	Below standard in solids not fat.
Aug. 26	Arthur Hoerchner, Thiensville	Thiensville Milk Plant, Thiensville	1.0303	3.3	11.48	8.18	39.85	Below standard in solids not fat.
Aug. 30	Ross Andrews, Juda	Miller Cheese Factory, Juda	1.0292	3.45	11.52	8.07	39.65	Watered.
Aug. 30	Dan Frier, Juda	Miller Cheese Factory, Juda	1.0268	2.95	10.27	7.32	37.4	Badly watered.
Aug. 30	Geo. Wichelt, Juda	Miller Cheese Factory, Juda	1.0294	3.75	12.01	8.26	39.9	Below standard in solids not fat.
Aug. 30	Art. Hardwig, Juda	Miller Cheese Factory, Juda	1.0296	3.10	11.25	8.15	39.7	Below standard in solids not fat.
Aug. 30	Ed. Lahr, Juda	Miller Cheese Factory, Juda	1.0286	3.4	.....	7.83	39.2	Watered.
Sept. 2	J. J. Matenaer, West Bend	Golden Oak Cheese Factory, West Bend	1.0269	3.00	10.43	7.43	36.3	Badly watered.
Sept. 10	Thomas Costello, Lake Geneva	Wis. Butter & Cheese Company's Cond., Lake Geneva	1.0302	3.95	12.28	8.33	41.1	Below standard in solids not fat.
Sept. 20	W. Remmel, Theresa	Upland Butter and Cheese Factory, Theresa	1.0312	3.20	11.68	8.48	.....	Slightly skimmed.
Sept. 22	Chas. Steinfest, Antigo	Fairview Cheese Factory, Antigo	1.0339	2.50	11.60	9.10	.....	Skimmed.
Sept. 22	Mike Kavarda, Antigo	Fairview Cheese Factory, Antigo	1.0179	1.90	6.78	4.88	29.1	Badly watered
Oct. 7	Edwin Lehner, Mayville	Fairview Cheese Factory, Mayville	1.0274	4.00	11.83	7.83	38.5	Watered.
Oct. 13	M. Thorn, Colby	Colby Star Cheese Factory, Colby	1.0274	2.65	10.14	7.49	38.0	Below standard in fat and solids not fat.
Oct. 18	John Jenssema, Sheboygan Falls	Dassow Creamery Co., Sheboygan Falls	1.0265	2.90	10.12	7.22	37.1	Watered.
Oct. 18	John Sanders, Sheboygan Falls	Dassow Creamery Co., Sheboygan Falls	1.0312	2.60	11.05	8.45	40.8	Below standard in fat and solids not fat.
Oct. 18	Chas. Joselm, Sheboygan Falls	Dassow Creamery Co., Sheboygan Falls	1.0282	2.80	10.75	7.95	38.9	Below standard in fat and solids not fat.
Oct. 25	A. Easler, Monroe	Independent Cheese Factory, Monroe	1.0232	2.85	9.21	6.36	34.2	Watered.
Oct. 25	Mr. Wessel, Monroe	Independent Cheese Factory, Monroe	1.0272	2.88	10.31	7.43	38.0	Watered.

Dec. 20	Joseph Kody, South Milwaukee	Anton Bonkowski Dairy, South Milwaukee	1.0192	1.75	6.96	5.21	30.8	Watered.
Dec. 23	Mrs. Andrew Floo, Eland	Eland Cheese Factory, Eland	1.0298	2.75	11.17	8.42	.....	Skimmed.
Dec. 23	Mike Hulehan, Eland	Eland Cheese Factory, Eland	1.0318	2.73	11.71	8.98	.....	Skimmed.
1921								
Jan. 5	A. Kolasinski, Wausau	Kleinheinz Dairy Co., Wausau	1.029	3.20	11.09	7.89	40.0	Below standard in solids not fat.
Jan. 5	A. Prochnow, Wausau	Kleinheinz Dairy Co., Wausau	1.027	2.9	10.36	7.46	37.5	Watered.
Jan. 10	Alex Dahlin, Superior	Russell Creamery Co., Superior	1.0333	3.00	11.96	8.96	.....	Skimmed.
Feb. 4	Mrs. A. Christiansen, Superior	Russell Creamery Co., Superior	1.0308	2.7	10.83	8.13	40.1	Not standard.
Feb. 10	T. Turkelson, Boaz	Boaz Cheese Factory, Boaz	1.0282	3.0	10.60	7.6	38.15	Below standard.
Feb. 13	Alf. Schultherr, Monroe	Ginnel Cheese Factory, Monroe	1.0297	3.0	11.03	8.03	40.2	Low in solids not fat.
Feb. 21	T. Turkelson, Boaz	Boaz Cheese Factory, Boaz	1.0275	2.98	10.31	7.33	37.6	Watered.
Feb. 23	Louis Schroeder, Merrill	Haeger Bros. Creamery, Merrill	1.0347	2.4	11.41	9.01	42.45	Skimmed.
Feb. 23	Wm. Demmin, Merrill	Haeger Bros. Creamery, Merrill	1.0278	3.1	10.69	7.59	38.1	Watered.
March 4	T. Turkelson, Boaz	Boaz Cheese Factory, Boaz	1.0276	3.0	10.47	7.47	37.2	Watered.
March 4	T. Turkelson, Boaz	Boaz Cheese Factory, Boaz	1.0280	2.6	9.95	7.35	37.3	Watered.
March 7	Elmer Soldner, Watertown	Lowell Cheese Factory, Watertown	1.0301	2.9	11.01	8.11	40.0	Standard.
March 7	Julious Jaeger, Reeseville	Lowell Cheese Factory, Reeseville	1.0303	3.0	11.11	8.11	40.15	Below standard in solids not fat.
Mar. 8	Robert Brown, Monroe	Lemon Cheese Factory, Monroe	1.0268	3.0	.....	7.30	37.0	Watered.
Mar. 28	Ben Lepien, Hartford	Maple Hill Cheese Factory	1.0283	3.05	10.70	7.65	39.2	Below standard in solids not fat.
April 6	Wm. Borutta, Pound	Gold Mine Cheese Factory	1.0310	2.3	10.33	8.03	40.3	Not standard as given by the cows. See herd sample.
April 6	Ed. Stank, Pound	Gold Mine Cheese Factory	1.0278	3.0	10.35	7.35	37.9	Not standard. Contains added water.
April 7	Henry Elmer, Monroe	Wittenwyler & Burgy Cheese Co., Monroe	1.0294	3.0	10.88	7.88	39.52	Low in solids not fat.
April 7	K. Cheesebrough, Monroe	Wittenwyler & Burgy Cheese Co., Monroe	1.0300	3.0	11.08	8.08	39.7	Low in solids not fat.
April 7	Wm. Trott, West Bend	Kohlsville Dairy Co., West Bend	1.0287	3.5	11.28	7.78	39.5	Low in solids not fat.
April 8	Mose Peronto, Sturgeon Bay	Van Camp Packing Co. Condensary, Sturgeon Bay	1.0297	2.6	10.45	7.85	40.0	Low in fat and solids not fat.
April 12	John Lee, Denmark	Denmark Condensary, R. 3, Denmark	1.0254	2.12	8.76	6.64	35.85	Watered.
April 12	F. Schroeder, Watertown	Van Kamp Packing Co., Jefferson	1.0303	3.0	10.86	7.86	.....	Not standard as given by the cows.
April 12	Sid Jones, Watertown	Van Kamp Packing Co., Jefferson	1.0334	3.8	11.76	8.96	.....	Not standard. Evidence of skimming.
April 12	J. Howard, Watertown	Van Kamp Packing Co., Jefferson	1.0306	2.5	10.77	8.27	40.3	Not standard as given by the cows.
April 12	R. Oestreich, Watertown	Van Kamp Packing Co., Jefferson	1.0316	2.8	11.31	8.51	41.0	Not standard as given by the cows
April 14	Henry Koahler, Hortonville	P. J. Peters, Rec. Sta., Hortonville	1.0293	2.75	10.52	7.77	39.35	Below standard in fat and solids not fat.
April 14	Paul Ashman, Appleton	P. J. Peters, Rec. Sta., Appleton	1.0269	2.7	9.80	7.10	36.45	Watered.

Milk. Not Standard. Delivered to Cheese Factories, Creameries, Condenseries, or City Milk Dealers—Continued

Date	Sold or delivered by	Sold or delivered to	Sp. G 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey 20° C.	Remarks
1921								
April 16	Joe Thielman, Chilton	Charlsburg Cheese Factory, Chilton	1.0297	2.7	10.53	7.83	39.45	Below standard in fat and solids not fat.
April 23	Otto Dehnel, Wausau	Church Hill Cheese Factory, Wausau	1.0306	3.2	11.24	8.04	40.45	Below standard in solids not fat.
April 29	Ed. Beaman, Cambria	Cambria Butter & Cheese Factory, Cambria	1.0285	3.0	10.61	7.61	39.45	Not standard in solids not fat.
April 29	J. A. Wolfrain, Watertown	Globe Cheese Factory, Watertown	1.0258	2.8	9.86	7.06	35.8	Watered.
May 16	Peter Meyer, Hartford	Star Cheese Factory, Hartford	1.0294	2.6	10.60	8.00	39.35	Illegal milk.
June 5	J. J. Miller, Brodhead	Pine Bluff Cheese Factory, Brodhead	1.0287	3.6	11.48	7.88	40.05	Not standard in solids not fat.
June 17	Olrich Sicer, Plymouth	Valley Cheese Factory, Plymouth	1.0269	2.65	9.83	7.18	36.4	Watered.
June 17	Dr. W. F. Dockery, Cedarburg	Luick Ice Cream Co., Cedarburg	1.0298	3.6	11.73	8.13	40.0	Below standard in solids not fat.
June 17	R. Goldberg, Thiensville	Luick Ice Cream Co., Thiensville	1.0283	3.30	10.80	7.50	38.6	Below standard in solids not fat.
June 17	Hugo Spuhl, Cedarburg	Luick Ice Cream Co., Cedarburg	1.02945	3.70	11.80	8.10	39.8	Below standard in solids not fat.
June 17	Math. Schreiner, Cedarburg	Luick Ice Cream Co., Cedarburg	1.0337	2.87	11.75	8.88	41.3	Below standard in fat
June 17	Reinold Friede, Thiensville	Luick Ice Cream Co., Thiensville	1.0301	3.35	11.60	8.25	40.5	Below standard in solids not fat.
June 22	H. Parduhn, Gotham	Fairview Cheese Factory, Gotham	1.0299	3.0	10.91	7.35	39.5	Not standard. Sample badly churned.

City Milk—Not Standard

Date	Sold by	City	Sp. G 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.	Remarks
1920								
Nov. 20	Rhinelander Cafe, Rhinelander	Rhinelander	1.0356	0.80	9.78	8.98	.....	Skimmed.
Nov. 26	Cronin Dairy Co., Janesville	Janesville	1.0251	7.1	15.43	8.33	.....	
Dec. 6	J. J. Hickey, Rhinelander	Rhinelander	1.034	1.40	10.32	8.92	.....	Skimmed.
Dec. 6	Spooner Hotel, Spooner	Spooner	1.0331	2.8	11.83	9.03	.....	Skimmed.

Dec. 16	Ray Montanye, Baraboo	Baraboo	1.0289	3.60	11.38	7.78	37.00	Watered.
Dec. 16	Anton Miller, Wausau	Wausau	1.0287	3.50	11.54	8.04	39.6	
Dec. 29	C. P. Kerrigan, Reedsburg	Reedsburg	1.0301	4.20	12.56	8.36	.....	
Dec. 30	John Hanson, Monroe	Monroe	1.0265	3.10	10.29	7.19	39.0	
Dec. 30	Dreamland Candy Kitchen, New Richmond	New Richmond	1.0339	2.45	11.58	9.13	.....	
Dec 31	Dreamland Candy Kitchen, New Richmond	New Richmond	1.0337	2.90	12.00	9.10	.....	Skimmed
1921								
Jan. 4	C. C. Simon, Superior	Superior	1.0328	2.10	11.02	8.92	.....	Skimmed
Jan. 7	John Saunders, Superior	Superior	1.0367	3.10	13.06	9.96	.....	Skimmed
Feb. 2	J J. Hickey, Rhinelander	Rhinelander	1.0340	2.0	11.03	9.03	.....	Skimmed
Feb. 2	John Berstein, Rhinelander	Rhinelander	1.0344	3.0	12.13	9.13	.....	Skimmed.
Feb. 3	Central Meat Market, Neillsville	Neillsville	1.0347	2.1	10.88	8.78	42.1	
Feb. 11	Clark Woodbury, Dodgeville	Dodgeville	1.0272	4.4	12.11	7.71	38.2	
Feb. 18	J. S. Hammer, Beaver Dam	Beaver Dam	1.0310	3.6	11.97	8.37	41.1	
Feb. 18	Theo. Weis, Beaver Dam	Beaver Dam	1.0328	2.7	11.48	8.78	41.6	
Mar. 10	Henry Pagel, Oshkosh	Oshkosh	1.0324	2.8	11.57	8.77	41.4	
Mar. 14	Henry Aschbrenner, Stratford	Stratford	1.0330	2.73	11.59	8.86	41.85	Skimmed.
Mar. 28	Geo. L. Clark, New Butler	New Butler	1.0276	3.3	10.90	7.60	38.3	
Mar. 28	John Siegel, New Butler	New Butler	1.0280	3.4	10.93	7.53	38.5	
April 6	Ripon Produce Co., Ripon	Ripon	1.0300	5.25	13.29	8.04	40.55	
April 6	Ripon Produce Co., Ripon	Ripon	1.0176	5.4	10.40	5.00	30.0	Watered.
April 22	Victory Restaurant, Janesville	Janesville	1.0329	2.1	10.70	8.60	40.95	Skimmed.
April 22	Badger Restaurant, Janesville	Janesville	1.0336	2.4	11.28	8.88	41.1	Skimmed.
April 22	Appollo Rest, Janesville	Janesville	1.0336	2.1	10.85	8.75	40.8	Skimmed.
April 22	Benwitz Rest, Janesville	Janesville	1.0316	2.8	11.13	8.33	40.5	Skimmed.
April 22	Hutchins & Buss, Janesville	Janesville	1.0335	2.4	11.23	8.83	41.0	Skimmed.
April 22	Central Lunch, Janesville	Janesville	1.0340	1.40	10.23	8.83	41.65	Skimmed.
April 22	National Lunch, Janesville	Janesville	1.0340	1.05	9.91	8.86	41.0	Skimmed.
April 22	D. & L. Sweet Shop, Janesville	Janesville	1.0330	1.40	10.08	8.68	41.25	Skimmed.

Herd Samples Collected by Inspectors in Connection With Samples Taken at Cheese Factories, Creameries, and City Milk Supplies, Sent to Laboratory for Analysis

Date	From Herd of	Sp. G 15.5°	Per cent Milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.	Remarks
1920							
July 21	F. Braun, Beaver Dam	1.0314	2.80	11.03	8.23	.....	
Aug. 3	Del. Woodruff, Logansville	1.0321	3.0	11.65	8.65	40.8	
Aug. 20	F. P. Haim, Belmont	.....	.....	.....	.....	41.7	
Aug. 20	Hapen John Bros., Belmont	1.0303	3.45	11.76	8.31	40.3	
Aug. 20	Leo Weedig, Belmont	1.0301	3.62	12.02	8.40	40.7	
Aug. 31	Nutricia Farms, Thiensville	1.0295	3.25	11.37	8.12	40.3	Night's milk.
Aug. 31	George Dowe, Grafton	1.0288	3.9	11.91	8.01	39.8	Night's milk.
Aug. 31	Herman Selle, Thiensville	1.0285	4.2	12.22	8.02	40.3	Morning's milk.
Aug. 31	Otto Mueller, Cedarburg	1.0290	4.9	13.27	8.37	40.9	Morning's milk.
Aug. 31	Arthur Hoerchner, Thiensville	1.0298	3.15	11.20	8.05	39.7	Morning's milk
Sept. 2	J. J. Matenaer, West Bend	1.0319	3.00	11.69	8.69	40.45	
Sept. 10	Thomas Costello, Lake Geneva	1.030	3.35	11.58	8.23	40.5	
Sept. 18	Fred Kessler, Janesville	1.0307	3.88	12.37	8.49	40.5	
Sept. 18	Fred Doubleday, Janesville	1.0304	3.20	11.42	8.22	39.4	
Sept. 18	Louis Hardwig, Janesville	1.0306	4.00	12.49	8.49	39.7	
Sept. 20	Ross Andrew, Juda	1.0311	3.45	11.98	8.53	40.3	
Sept. 20	Dan Fries, Juda	1.032	3.38	12.11	2.73	40.4	
Sept. 22	Mike Kavarda, Antigo	1.0328	4.58	13.74	9.16	41.7	
Sept. 22	Charley Steinfest, Antigo	1.032	4.60	13.54	8.94	.....	
Sept. 24	Art Hartwig, Juda	1.0312	3.10	11.65	3.55	41.7	
Sept 24	Geo. Wichelt, Juda	1.0291	3.40	11.42	8.02	40.1	
Oct. 7	Albert Aldermeyer, Mayville	1.0326	3.35	12.12	8.77	41.65	
Oct. 7	Edwin Sehner, Mayville	.....	.....	.....	.....	40.1	
Oct. 7	August Fenchst, Mayville	.....	.....	.....	.....	38.9	
Oct. 7	August Koltermann, Mayville	1.0307	3.50	11.95	8.45	41.6	
Oct. 20	Math. Thorn, Colby	1.0302	3.90	12.29	8.39	41.3	
Oct. 25	Mr. Wessel, Monroe	1.030	3.30	11.50	8.20	40.4	
Oct. 25	A. Easler, Monroe	1.031	3.80	12.39	8.59	41.5	
Dec. 15	Joseph Kodr, South Milwaukee	1.0304	4.55	13.18	8.63	41.1	Standard.
Dec. 20	Mike Hulehan, Eland	1.0303	3.85	12.65	8.8	.....	Standard.
Dec. 30	John Hanson, Monroe	1.0287	3.50	11.17	7.67	40.4	
1921							
Jan. 10	C. C. Simons, Superior	1.031	3.7	12.13	8.43	.....	
Jan. 31	E. C. Koenig, Baraboo	1.033	3.8	12.76	8.96	41.95	
Jan. 31	Ed. Von Wald, Baraboo	1.0324	4.3	13.22	8.92	42.7	

Jan.	31	John Cumings, Baraboo	1.0326	3.1	.....	.....	42.6
Jan.	31	Wm. Marquarde, Baraboo	1.0331	3.8	.....	.....	43.0
Feb.	4	John Saunders, Superior	1.0326	5.3	14.58	9.28	42.2
Feb.	4	Alex Dahlin, Wentworth	1.0322	4.85	13.92	9.07	41.7
Feb.	5	Wm. Luttropp, Hartford	1.0328	3.0	11.84	8.84	.....
Feb.	5	John Endrus, Hartford	1.033	3.2	12.13	8.93	.....
Feb.	9	Art. Denfeld, Wausau	1.0310	3.05	11.45	8.40	.....
Feb.	10	D. W. Emerson, Ashland	1.0300	3.9	12.34	8.44	40.35
Feb.	23	Louis Schroeder, Merrill	1.0321	3.6	12.31	8.71	41.85
Feb.	23	Wm. Demmin, Merrill	1.0320	3.8	12.62	8.82	41.9
Mar.	2	John Berstein, Rhinelander	.....	.....	.....	.....	42.1
Mar.	4	Thos. Turkelson, Boaz	1.0310	3.3	11.66	8.36	40.25
Mar.	16	Robert Braun, Monroe	1.0300	3.12	11.24	8.12	40.15
Mar.	21	L. Pettersen, Stanley	1.0306	3.3	11.60	8.30	41.4
Mar.	28	Ben Lepien, Hartford	1.0315	3.0	11.38	8.38	41.5
Mar.	28	Geo. Clark, New Butler	.....	3.7	12.53	8.83	41.25
Mar.	29	Henry Ascherbeesser, Stratford	1.0315	3.3	11.87	8.57	41.0
Mar.	31	Henry Pagel, Oshkosh	1.0311	3.3	11.66	8.36	48.6
April	5	Herman Tabbert, Birnamwood	1.0307	4.1	12.33	8.23	41.0
April	6	Wm. Borutta, Pound	1.0293	2.7	10.31	7.61	39.1
April	7	George Gutljahr, West Bend	1.0325	4.3	13.11	8.81	42.75
April	7	Henry Elmer, Monticello	1.0290	2.7	10.41	7.71	38.2
April	7	K. Cheesebrough, Monroe	1.0300	2.7	10.83	8.13	39.35
April	8	Mose Teronto, Sturgeon Bay	1.0292	2.92	10.66	7.74	39.6
April	14	Paul Ashman, Appleton	1.0293	3.55	11.80	8.25	40.7
April	14	Henry Koahler, Hortonville	1.0287	4.0	11.88	7.88	40.0
April	16	George Schwartz, Chilton	1.0320	3.95	12.85	8.89	42.3
April	16	Joe Thielman, Chilton	1.0295	2.8	10.61	7.81	39.3
April	22	Wm. Kuhaupt, Horicon	1.0324	4.4	13.50	9.1	42.3
April	23	Otto Dehnel, Wausau	1.0303	3.0	11.02	8.02	39.75
April	29	Ed. Seaman, Cambria	1.0298	3.2	11.09	7.89	40.75
May	5	Henry Elmer, Monticello	.....	3.9	12.23	8.33	40.0
May	5	Henry Elmer, Monticello	.....	3.9	12.13	8.23	38.85
May	5	Henry Elmer, Monticello	.....	3.2	11.76	8.56	41.1
May	5	Henry Elmer, Monticello	.....	3.05	11.34	8.29	40.4
May	5	Henry Elmer, Monticello	.....	3.0	11.05	8.05	38.85
May	5	Henry Elmer, Monticello	.....	3.9	11.61	7.71	38.7
May	5	Henry Elmer, Monticello	.....	3.9	12.46	8.56	39.5
May	5	Henry Elmer, Monticello	.....	3.35	11.46	8.11	39.1
May	5	Henry Elmer, Monticello	.....	3.9	12.64	8.74	40.9
May	5	Henry Elmer, Monticello	.....	3.3	12.07	8.77	41.0
May	5	Henry Elmer, Monticello	.....	3.4	11.42	8.02	38.8
May	5	Henry Elmer, Monticello	.....	3.0	11.00	8.00	39.5
May	5	Henry Elmer, Monticello	.....	3.3	11.27	7.97	39.0
May	5	Henry Elmer, Monticello	.....	3.7	12.77	9.07	39.95
May	5	Henry Elmer, Monticello	.....	3.8	13.33	9.53	41.4

Herd Samples Collected by Inspectors in Connection With Samples Taken at Cheese Factories, Creameries, and City Milk Supplies, Sent to Laboratory for Analysis—Continued

Date	From Herd of	Sp. G 15.5°	Per cent Milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.	Remarks
1921							
May 5	Henry Elmer, Monticello	.....	3.55	12.40	8.85	40.3	
May 5	Henry Elmer, Monticello	.....	3.6	12.49	8.89	.....	
May 5	Henry Elmer, Monticello	.....	3.6	11.78	8.18	.....	
May 16	Peter Meyer, Hartford	1.0300	2.0	10.24	8.04	38.75	Cows starving. 12 cows give only 50 lbs. of milk.
June 13	S. Kapusta, Antigo	.....	3.65	.....	.....	.....	
June 17	R. Goldberg, Thiensville	1.0275	3.20	10.89	7.69	38.05	
June 17	Hugo Spuhl, Cedarburg	1.02985	3.5	11.64	8.14	38.9	
June 17	Math. Schreiner, Cedarburg	1.0328	3.8	12.74	8.94	41.6	
June 17	Reinold Friede, Thiensville	1.0299	3.4	11.56	8.16	40.2	
June 17	Dr. W. F. Dockery, Cedarburg	1.03015	4.00	12.24	8.24	40.0	
June 18	Ulrich Zeiser, Plymouth	1.0313	3.34	11.87	8.47	40.7	
June 30	R. Goldberg, Thiensville	1.0267	4.1	11.47	7.37	38.3	

Milk—Submitted Samples

Date	Submitted by	Per cent milk fat	Remarks
1920			
July 8	Fred Fuss, Wittenberg	.....	Z. I. R. reading, 39.7° indicates no watering.
July 9	Louis Herrewig, Wonewoc	.....	Z. I. R. reading, 41.2° indicates no watering.
July 9	Wm. Ludwig, Beaver Dam	4.1	Standard.
July 9	Fred Ludwig, Beaver Dam	4.0	Standard.
July 10	E. A. Cobb, Sun Prairie	3.75	Standard.
July 19	Robt. Cizak, Manitowoc	2.9	Not standard
July 19	Sam Curtiss, Highland	.....	Z. I. R. Reading 40.4° indicates no watering.
July 19	Geo. Wright, Logansville	3.2	Standard.
July 19	Geo. Wright, Logansville	3.4	Standard.
July 19	Geo. Wright, Logansville	3.35	Standard.
July 19	Geo. Wright, Logansville	3.55	Standard.
July 19	Geo. Wright, Logansville	3.1	Standard.

July 19	Geo. Wright, Logansville	3.35	Standard.
July 19	Geo. Wright, Logansville	3.3	Standard.
July 20	Fred Mansfield, Johnson Creek	2.7	Not standard.
July 20	Fred Mansfield, Johnson Creek	2.6	Not standard.
July 22	Iver Frommes, Oconto Falls	4.0	Standard.
July 22	Ed. F. Doubek, Kellnersville		Z. I. R. reading of 39.0° on sour serum indicates watering.
July 24	Gust Massart, Casco	3.0	Standard.
Aug. 2	Glenn C. Weiss, West Bend		Z. I. R. reading, 35.0° indicates watering.
Aug. 2	E. W. Jung, Jackson		Z. I. R. reading, 40.5° indicates that no water was added.
Aug. 4	E. F. Doubek, Kellnersville	3.05	Standard.
Aug. 4	Wis. Butter & C. Co., Elkhorn	3.0	Solids not fat, 8.25, not standard.
Aug. 4	Geo. Koch, Lena	3.2	Standard.
Aug. 6	J. F. Wagner, Seymour	3.65	Standard.
Aug. 10	Wis. B. & C. Co., Elkhorn	3.1	Z. I. R. reading of 39.2 indicates watering. Solids not fat, 8.10—below standard.
Aug. 19	Geo. A. Koch, Lena	3.53	Standard.
Aug. 19	Geo. A. Koch, Lena	3.80	Standard.
Aug. 23	Ernest Heling, Sister Bay	4.05	Standard.
Sept. 1	John Ruys, Oneida	3.3	Standard.
Sept. 1	Henry E. Johnson, Sister Bay	3.35	Standard.
Sept. 1	Wm. F. Draheim, Mattoon	3.2	Standard.
Sept. 9	Robert Wenzel, Underhill	3.8	Standard.
Sept. 17	H. E. Griffen, Mt. Horeb	2.8	Solids not fat, 7.88—not standard. Low fat. Z. I. R. reading of 39.0 indicates the addition of water.
Oct. 4	Mrs Adolph Neumann, Underhill	8.65	Standard.
Oct. 5	Wis. B. & C. Co., Elkhorn	3.00	Standard, but solids not fat—7.89. not standard.
Oct. 5	Clyde Roth, Muscoda		Z. I. R. reading of 41.0 indicates no watering.
Oct. 16	W. G. Crawford, Madison	4.00	Standard.
Oct. 18	Ernest W. Jung, Jackson	3.55	Standard.
Oct. 18	Ernest W. Jung, Jackson	3.45	Standard.
Oct. 18	Ernest W. Jung, Jackson	3.0	Standard.
Oct. 18	Ernest W. Jung, Jackson	3.45	Standard.
Oct. 19	Fred C. Mansfield Co., Johnson Creek	3.1	Standard in fat but solids not fat, 8.21. Not standard
Oct. 19	Fred C. Mansfield Co., Johnson Creek	2.3	Not standard.
Oct. 19	Fred C. Mansfield Co., Johnson Creek	3.0	Standard.
Oct. 21	W. G. Crawford, Madison	4.2	Standard.
Oct. 23	W. G. Crawford, Madison	3.6	Standard.
Oct. 25	Fred C. Mansfield Co., Johnson Creek	3.1	Standard in fat, but solids not fat—8.26. Not standard.
Oct. 25	Emmit Allen, Avoca		Z. I. R. reading of 40.25 on sour serum indicates no watering.
Oct. 25	Emmit Allen, Avoca	3.9	Standard.
Nov. 1	W. G. Crawford, Madison	3.9	Standard.
Nov. 1	W. G. Crawford, Madison	4.0	Standard.
Nov. 1	W. G. Crawford, Madison	4.0	Standard.
Nov. 1	W. G. Crawford, Madison	4.17	Standard.
Nov. 1	W. G. Crawford, Madison	4.00	Standard.
Nov. 1	W. G. Crawford, Madison	4.00	Standard.
Nov. 1	W. G. Crawford, Madison	4.40	Standard.

Milk—Submitted Samples

Date	Submitted by	Per cent milk fat	Remarks
1920			
Nov. 3	Bradley Memorial Hospital, Madison	4.0	Standard.
Nov. 5	Con Giese, Green Bay	4.05	Standard.
Nov. 5	Bradley Memorial Hospital, Madison	3.9	Standard.
Nov. 6	Bradley Memorial Hospital, Madison	3.6	Standard.
Nov. 8	W. G. Crawford, Madison	4.18	Standard.
Nov. 8	W. G. Crawford, Madison	4.10	Standard.
Nov. 8	W. G. Crawford, Madison	3.53	Standard.
Nov. 8	W. G. Crawford, Madison	3.5 ε	Standard.
Nov. 8	W. G. Crawford, Madison	3.55	Standard.
Nov. 8	W. G. Crawford, Madison	3.80	Standard.
Nov 8	W. G. Crawford, Madison	4.10	Standard
Nov. 8	Bradley Memorial Hospital, Madison	5.1	Standard.
Nov. 9	Bradley Memorial Hospital, Madison	4.0	Standard.
Nov. 10	Bradley Memorial Hospital, Madison	3.8	Standard.
Nov. 10	Mansfield Cond. Milk Co., Johnson Creek		Churned so badly that only the Z. I. R. reading could be taken which was 38.6° which indicates watering.
Nov. 11	Bradley Memorial Hospital, Madison	3.6	Standard.
Nov. 12	Bradley Memorial Hospital, Madison	3.5	Standard.
Nov. 13	Bradley Memorial Hospital, Madison	3.2	Standard.
Nov. 13	W. G. Crawford, Madison	3.95	Standard.
Nov. 13	W. G. Crawford, Madison	3.95	Standard.
Nov. 13	W. G. Crawford, Madison	4.25	Standard.
Nov. 13	W. G. Crawford, Madison	3.88	Standard.
Nov. 13	W G. Crawford, Madison	4.10	Standard.
Nov. 13	W. G. Crawford, Madison	4.25	Stanadrd.
Nov 13	W. G. Crawford, Madison	3.75	Standard.
Nov. 16	Selmer Syftstad, Mt. Horeb	3.55	Standard.
Nov. 16	Selmer Syftstad, Mt. Horeb	3.55	Standard.
Nov. 20	W. G. Crawford, Madison	4.15	Standard.
Nov. 22	W. G. Crawford, Madison	4.15	Standard.
Nov. 22	W. G. Crawford, Madison	4.00	Standard.
Nov. 22	W. G. Crawford, Madison	3.90	Standard.
Nov. 22	W. G. Crawford, Madison	4.00	Standard.
Nov. 22	W. G. Crawford, Madison	3.85	Standard.
Nov. 22	W. G. Crawford, Madison	3.85	Standard.
Nov. 26	Joe Steinet, Pittsville	1.4	Not standard.
Nov. 27	Geo. J. Desing, Elkhorn	3.3	Standard.
Nov. 30	W. G. Crawford, Madison	4.1	Standard.

		4.2	Standard.
Nov. 30	W. G. Crawford, Madison	4.15	Standard.
Nov. 30	W. G. Crawford, Madison	3.80	Standard.
Nov. 30	W. G. Crawford, Madison	4.15	Standard.
Nov. 30	W. G. Crawford, Madison	4.13	Standard.
Nov. 30	W. G. Crawford, Madison	3.3	Standard.
Nov. 30	Ernst Pape, Reedsburg	3.4	Standard.
Dec. 2	Gottlieb Lehmann, Verona	3.00	Standard in fat but the Z. I. R. reading of 37.7° indicates watering.
Dec. 13	Otto Pfingsten, Eden	.....	Eighteen samples of milk were submitted by this party. Five of the samples were broken in transit and only a sour serum on the remaining samples could be run, which are as follows: No. 1, 39.5; No. 3, 40.75; No. 5, 41.3; No. 7, 38.7; No. 10, 39.8; No. 11, 39.55; No. 12, 40.2; No. 14, 39.5; No. 15, 39.6; No. 16, 39.35; No. 18, 40.75.
Dec. 16	L. A. Wrench, Kaukauna	.....	
		3.7	Standard.
Dec. 27	Geo. J. Desing, Elkhorn	3.4	Standard.
Dec. 27	Geo. J. Desing, Elkhorn	4.13	Standard.
Dec. 30	G. W. Crawford, Madison	4.05	Standard.
Dec. 30	G. W. Crawford, Madison	3.2	Standard.
Dec. 31	Everett O. Stubbs, North Prairie	3.10	Standard.
Dec. 31	E. J. Rowell, Madison		
1921			
		2.6	Below standard in fat and the solids not fat, 8.03 is not standard.
Jan. 10	Fred C. Mansfield, Johnson Creek	2.8	Below standard in fat and solids not fat, 7.9, is not standard.
Jan. 10	Fred C. Mansfield, Johnson Creek	3.0	Standard in fat, but solids not fat, 7.8. Not standard.
Jan. 10	Fred C. Mansfield, Johnson Creek	2.85	Below standard in fat and the solids not fat, 8.09. Not standard.
Jan. 11	Fred C. Mansfield, Johnson Creek	2.8	Below standard in fat and the solids not fat, 8.01. Not standard.
Jan. 11	Fred C. Mansfield, Johnson Creek	3.6	Standard.
Jan. 14	P. J. Roice, Superior	3.0	Standard.
Jan. 20	E. W. Jung, Jackson	.....	Z. I. R. reading on sour serum is 39.6°.
Jan. 26	Henry L. Jens, North Prairie	3.25	Standard.
Jan. 29	Harry Pluess, Mukwonago	2.6	Below standard in fat and solids not fat, 8.21. Not standard.
Jan. 31	W. P. Hyland, Ashland	.....	Below legal standard in total solids 8.43. Water added.
Jan. 31	Wis. B. & C. Co., Elkhorn	2.9	Low fat.
Feb. 5	Fred P. Grebe, Fox Lake	3.3	Standard.
Feb. 7	E. B. Schulz, Clintonville	.....	Bacterial count of 3,000.
Feb. 14	Pleasant Valley Farm, Genesee	3.2	Standard.
Feb. 17	Robert Wensel, Underhill	0.0	Skimmed and the Z. I. R. reading of 34.3 indicates watering.
Feb. 26	David G. White, Madison	3.0	Standard.
Mar. 4	D. D. Korth, Antigo	3.4	Standard.
Mar. 4	E. W. Jung, Jackson	3.6	Standard.
Mar. 7	Ed. Guckenberg, Boyd	2.9	Not standard.
Mar. 8	Gottfried Bachmann, Oshkosh	2.7	Not standard.
Mar. 10	Gottfried Bachmann, Oshkosh	2.5	Not standard.
Mar. 10	Gottfried Bachmann, Oshkosh	.....	Test for iodine—negative. Test for iodides—negative.
Mar. 10	Dr. Claussen, Madison	3.55	Standard.
Mar. 16	Conrad King, Edgar	3.5	Standard.
Mar. 16	Gottlieb Krause, Jackson	2.70	Not standard
Mar. 26	Chas. Hopperdietzel, Athens		

Milk—Submitted Samples

Date	Submitted by	Per cent milk fat	Remarks
1921			
April 6	R. A. Knarr, Marshfield	2.85	Not standard.
April 6	Fred W. Fuss, Wittenberg	3.6	Standard.
April 12	Martin Marggi, Eden	2.8	Not standard.
April 15	Wis. B. & C. Co., Elkhorn		Ash— .79% Considerable carbonate present.
April 20	Jacob Habermacher, Poynette	3.55	Standard
April 25	C. L. Hull, Whitewater	3.7	Standard
May 5	W. P. Hyland, Ashland		Tested for formaldehyde. None found
May 17	E. F. Horn, Beaver Dam		Z. I. R.—sour serum 41.15° Contains added water.
May 19	W. Siegrest, Belleville	2.8	Below standard in fat and solids not fats
June 15	N. Siegrest, Belleville	3.20	Standard
June 17	Wisconsin Dairy Milk Co., Mayville	3.0	Standard

Miscellaneous Dairy Products

Date	Kind	Bought of or submitted by	Remarks
1920			
July 9	Carolene	The Army & Navy Store, Racine	Not standard.
Nov. 2	Concentrated milk	Mr. B. H. Plauts, Sharon	Total solids, 23.5 per cent.
Dec. 15	Evaporated milk	Peter Jensen, Ferryville	Fat, 8.33 per cent; total solids, 26.70 per cent.
1921			
Mar. 23	Modified milk	L. Sunday, Sparta	Babcock fat, 4.35 per cent; Z. I. R., 42.1.
Mar. 28	Whey	Wm. Winder, Madison	Fat, 0.21 per cent.
June 29	Skimmed milk	Windsor Bristol Dairy Co., Sun Prairie	Fat, .20 per cent.

To determine whether or not a mixed lot of milk containing 3% of milk fat would produce American cheese containing not less than 50% fat in the moisture free solids, Mr. Winder, assistant dairy and food commissioner, collected at the Boaz cheese factory on three days the milk of several herds, mixing the same together and getting a milk that tested 3% fat. This milk was manufactured into American cheese which was later analyzed and was found to be of the following composition:

Sample No. 80 W. W.	
Moisture	37.28 %
Solids	62.72 %
Fat (by Babcock)	32.15 %
Fat (by Extraction)	32.27 %
Ratio Fat to Solids by Extraction	51.45 %

Sample No. 81 W. W.	
Moisture	37.20 %
Solids	62.80 %
Fat (by Babcock)	31.5 %
Fat (by Extraction)	31.78 %
Ratio Fat to Solids by Extraction	50.60 %

Sample No. 82 W. W.	
Moisture	36.67 %
Solids	63.33 %
Fat (by Babcock)	31.5 %
Fat (by Extraction)	31.98 %
Ratio Fat to Solids by Extraction	50.49 %

The two samples of milk were taken before the milk was manufactured into cheese. Upon analysis the samples of milk gave the following results:

Sample No. 76 W. W.	
Sp. G.	1.0316
Fat	3.05 %
Total Solids	11.49 %
Solids not fat	8.44 %
Z. I. R.	40.9

Sample No. 83 W. W.	
Sp. G.	1.0310
Fat	3.0 %
Total Solids	11.19 %
Solids not fat	8.19 %
Z. I. R.	40.3

Samples of whey were collected from the milk manufactured into cheese. The samples of whey were analyzed and found to contain .22 and .23 per cent of milk fat.

FLAVORS AND FLAVORING EXTRACTS

Date	Kind	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1920				
Aug. 30	Orange	Chas. Liehe Co., Chippewa Falls	Meissner Bergwall Co., Milwaukee	Not standard. Contains less than the required amount of lemon oil. Label and container indicated product to be old stock.
Aug. 30	Wintergreen	Chas. Liehe Co., Chippewa Falls	Meisner-Bergwall Co., Milwaukee	Misbranded. Not triple strength as label indicates.
Sept. 3	Vanillin	Fleming Mercantile Co., Emerald	Ward & Company, Chicago	Found to be free from coumarin.
Sept. 3	Lemon	Fleming Mercantile Co., Emerald	Ward & Company, Chicago	Found to be slightly below requirement in lemon oil. Not a lemon extract.
Sept. 3	Lemon	Blood Mercantile Co., Chippewa Falls	C. Foster Chemical Co., Chippewa Falls	Misbranded. Label states product to be four times as strong as lemon extract.
Sept. 22	Red coloring	Hudson Bottling Works, Hudson	H. C. Schranck Co., Milwaukee	Identified as a coal tar dye—amaranth.
Oct. 6	Lemon	C. C. De Long & Co., Edgar	Garrett & Co., Brooklyn, N. Y.	Standard.
Oct. 6	Vanilla	C. C. De Long & Co., Edgar	Garrett & Co., Brooklyn, N. Y.	Standard.
Oct. 6	Lemon	C. C. Barrett, Edgar	Foster Brothers, Eau Claire	Misbranded. Contains no lemon oil. Found to be terpeneless extract of lemon artificially colored.
Oct. 7	Pure vanilla	W. B. Yahr, Elroy	Durand & Kasper Co., Chicago	Standard.
Oct. 25	Vanilla	Lamar Company, Lamar	Dr. Codman's Extract & Medicine Co., Sparta	No resins. Coumarin present.
Nov. 10	Vanilla	American Co-op. Ass'n, Nekoosa	American Co-op. Ass'n., Milwaukee	Misbranded. 12% short measure.
Nov. 10	Lemon	American Co-op. Ass'n, Nekoosa	American Co-op. Ass'n., Milwaukee	Adulterated.
Nov. 12	Vanilla	Poeske & Stieber, Wausau	International Co., Wausau	Standard.
Nov. 12	Lemon	Poeske & Stieber, Wausau	International Co., Wausau	Standard.
Nov. 23	Lemon	G. O. Steidl, Appleton	Royal Remedy & Extract Co., Dayton, Ohio	Standard.
Nov. 30	Lemon	W. H. Turner, Sparta	J. R. Watkins Co., Winona	Standard.
Nov. 30	Orange	W. H. Turner, Sparta	J. R. Watkins Co., Winona	Standard.
Nov. 30	Vanilla	W. H. Turner, Sparta	J. R. Watkins Co., Winona	Standard.
Nov. 30	Vanilla compound	W. H. Turner, Sparta	J. R. Watkins Co., Winona	Misbranded. Not vanilla compound.
Dec. 15	Lemon	Mrs. Sebora	Garrett & Co., Brooklyn, N. Y.	Standard.
Dec. 30	Lemon	Portage Cash Store, Portage	Watertown Grocery Co., Watertown	Not standard. Terpeneless extract of lemon sold for extract of lemon.
1921				
Feb. 1	Lemon	Ramland Bros., Westby	Codman Extract & Medicine Co., Sparta	Standard.
Feb. 1	Vanilla	Ramland Bros., Westby	Codman Extract & Medicine Co., Sparta	Adulterated. Not vanilla extract.
Feb. 3	Lemon	Robbe and Myher, Strum	Codman Extract & Medicine Co., Sparta	Standard.
Feb. 3	Vanilla	Robbe and Myher, Strum	Codman Extract & Medicine Co., Sparta	Not standard. Not made from vanilla bean.
Feb. 3	Vanilla	Waller & Hagen, Osseo	Codman Extract & Medicine Co., Sparta	Not standard. Not made from vanilla bean.
Mar. 11	Lemon	Blood Mercantile Co., Downing	C. Foster Chemical Co., Chippewa Falls	Found to be a solution of lemon oil and cottonseed oil. This is not lemon extract.

Mar. 17	Lemon	J. A. Betz, Sun Prairie	Fletcher Production Co., Chicago	Found to be a solution of lemon oil and cottonseed oil. This product is not lemon extract.
∞ May 19	Lemon	B. W. Fish, Endeavor	Dr. Koch Vegetrea Co., Winona	Found to be a solution of lemon oil and cottonseed oil. This product is not lemon extract.

FLOUR

Date	Kind	Bought of or Submitted by	Remarks
1920			
Sept. 3	Wheat Flour	Oscar Johnson, Mason	Found to be wheat flour.
Dec. 5	Buckwheat	F. J. Lee, Milton	Standard.
1921			
Jan. 4	Wheat Flour	Olo Vesaas, Oregon	Standard.
Feb. 1	Wheat	Leo Koser, Menasha	O. K.
Feb. 16	Golden Palace, bleached	Dooley Bros., Blue River	Adulterated. Artificially bleached.
Feb. 24	Flour	Monson & Keegan, Richland Center	Bleached.
Feb. 28	Ultimate	Jennison Mills, Minneapolis	Adulterated. Artificially bleached.
Feb. 28	Ultimate, bleached	N. H. Smith, Baraboo	Adulterated. Artificially bleached.
Mar. 11	Flour	John P. Dousman Milling Co., De Pere	Nitrite test showed bleaching.
Mar. 16	Flour	H. Hartwig, Gillett	Gluten test—excellent. Nitrite bleaching test—negative.
Mar. 29	Flour	Alex. Sinaiko, Madison	Bleached by nitrite process.

LARD AND OLEOMARGARINE

Date	Sample of	Bought of or Submitted by	Remarks
1921			
Jan. 4	Lard	Siewart and Edwards, Wisconsin Rapids	Standard.
Jan. 6	Oleomargarine	Vandirst Grocery Co., Monroe	Adulterated. Contains benzoate of soda.
Jan. 20	Lard	E. Merbach, Madison	Micro: Lard forms, but small.
Feb. 17	Oleomargarine	Wintemantel Brothers, Reedsburg	Misbranded.
Mar. 1	Nut Oleomargarine	F. E. Poppins, Ladysmith	Benzoic acid present.
Mar. 18	Oleomargarine	B. W. Fetting, Alma	Found to contain benzoate of soda.
Mar. 24	Lard	John Jouranitch, Verona	Free from adulteration.
Mar. 28	Nut Margarine	Wm. Rubin, Fennimore	Adulterated. Contains sodium benzoate.
April 11	Oleomargarine	A. H. Anderson, Nelson	Found to contain benzoate of soda.

LINSEED OIL

Date	Submitted by	Remarks
1920		
July 22	Farmers Elevator and Lumber Co., Green Valley	Free from adulteration.
Aug. 9	Columbus Hardware Co., Columbus	Free from adulteration.
Aug. 27	Green Bay Hardware Co., Green Bay	Free from adulteration.
Sept. 8	Pine-Ihrig Machine Co., Oshkosh	Free from adulteration.
Nov. 17	Economy Service Co., Oshkosh	Free from adulteration.
Dec. 1	Roberts & Prideaux, Dodgeville	Free from adulteration.
1921		
Jan. 20	Henry Bonn Co., Milwaukee	Free from adulteration.
Feb. 9	S. M. McGonigel, Loyal	Standard.
Feb. 9	S. M. McGonigel, Loyal	Standard.
April 3	Adam Kroner Co., La Crosse	Free from adulteration.
April 16	Cash Hardware Store, Merrill	Free from adulteration.
May 4	Lidral Gerhart Hardware Co., Algoma	Not standard. Contains mineral oil.
May 16	Carl Swerig, Stoughton	Free from adulteration.
May 17	C. H. O'Neil & Sons Co., Milwaukee	Free from adulteration.
May 21	W. T. Goodhue, Oxford	Free from adulteration.
May 22	Timmie H. O'Neill, Kilbourn	Free from adulteration.
May 22	A. O. Selje, Morrisonville	Free from adulteration.
May 28	Martin Eng, Cambridge	Free from adulteration.
June 2	Oliver Brothers, Otsego	Free from adulteration.
June 10	Fjelstad Brothers and Jensen, Hanover	Adulterated with kerosene and machine oil.
June 10	Fjelstad Brothers and Jensen, Hanover	Adulterated with kerosene and machine oil.
June 11	Henning and Geasland, Platteville	Free from adulteration.
June 13	Ray Black, Reedsburg	Free from adulteration.
June 13	Henning and Geasland, Platteville	Free from adulteration.
1921		
June 13	M. E. Brand, Bangor	Not standard. Has a high acid value.
June 13	M. E. Brand, Bangor	Not standard. Has a high acid value.
June 25	A. A. Koehler, Weyauwega	Free from adulteration.
June 29	Columbus Hardware Co., Columbus	Free from adulteration.

MISCELLANEOUS PRODUCTS

Date	Kind	Bought of or Submitted by	Remarks
1920			
July 28	Red Beans	Fred Gadsby, Eau Claire	Fit for food.
July 28	Sweet Corn	Fred Gadsby, Eau Claire	No decomposition. Fit for food.
July 28	Canned Tomatoes	Fred Gadsby, Eau Claire	Decomposed. Unfit for food.
July 28	Canned Tomatoes	Fred Gadsby, Eau Claire	No decomposition. Fit for food.
July 28	Preserved Strawberries	Fred Gadsby, Eau Claire	Can—excellent. A low grade of berries.
Aug. 8	Granulated Sugar	Luxemburg Co-op. Ass'n., Inc., Luxemburg	Found to be commercially pure.
Aug. 10	Granulated Sugar	Algoma Farmers Co-op. Co., Algoma	Found to be commercially pure.
Aug. 10	Cherries	A. A. Bever, Stratford	Found to be free from chemical preservatives.
Aug. 11	Granulated Sugar	Gustav Graunke, Luxemburg	Found to be pure sugar.
Aug. 25	Exact Whip	Geo. Weisshaupitt, Milwaukee	Found to be egg albumin.
Aug. 25	Chocolate Dessert	Mrs. J. Cosgrove, Eau Claire	Contains no artifiicial color.
Aug. 27	Egg Substitute	T. S. Lefstad, Wheeler	Misbranded in that the package contained a false and misleading statement.
Sept. 8	Beats All	Rich Jahn, Milwaukee	Found to contain no egg albumin.
Sept. 8	Majestic Powder	Rich Jahn, Milwaukee	Contains no lemon flavor.
Sept. 16	Bread	B. Zerniecki, Milwaukee	Microscopical examination shows presence of mould, orange in color on bread.
Sept. 16	Sugar	Geo. Schneider, Madison	Standard. Free from saccharine and starch.
Sept. 21	Cherries	Frank's Restaurant, Vernon	Found to contain a small amount of benzoate of soda.
Sept 21	Whip-O	Mrs. M. Tobin, Mellen	Found to be a solution of sucrate of lime. Not deleterious to health.
Sept. 22	Salad Dressing	O'Conell-Flandus Co., Hudson	Benzoic acid found.
Sept. 24	Apple & Raspberry Jam	The Reider Co., Madison	White mass not bacterial growth—white crystalline substance probably sugar.
Sept. 27	Imitation Jam	C. E. Eaton, Green Lake	No foreign coloring matter found.
Sept. 27	Eggols	D. B. Greenbury, Green Lake	Misbranded. False labeling—false and misleading statements.
Oct. 6	Preserves	Geo. M. Frohmeder, Camp Douglas	Found to be free from added chemical preservatives.
Oct. 13	Sugar	Clarence Fenton, Glenwood City	Found to be free from adulteration.
Oct. 21	Crushed Pineapple	A. V. Seagrove, Baraboo	Found to be free from benzoate of soda.
Oct. 21	Strawberries	A. V. Seagrove, Baraboo	Found to be free from benzoate of soda.
Oct. 28	Sugar	Geo. L. Reed, Darien	Found to be free from adulteration.
Oct. 30	Canned Beets		Can show corrosion tin present in considerable quantities.
Nov. 22	Sugar	A. L. Kurtz, Jackson	Standard. No adulteration found.
Dec. 5	Sugar	Mrs. Geo. Boatman, Milton Junction	Dissolved sugar in water—allowed to ferment for two weeks—no odor of molasses.
Dec. 9	Apple Fruit Flakes	A. H. Frank, Kaukauna	Tested for chemical preservatives. None found.

Miscellaneous Products—Continued

Date	Kind	Bought of or Submitted by	Remarks
1921			
Jan. 6	Frostlene	S. N. Baum, Pittsville	Misbranded. Fraudulent claims made.
Jan. 6	Candy	Taylor and Taylor, Rice Lake	Heavy metals—none. Arsenic—small amounts, not enough to indicate use as a poison.
Jan. 7	Candy	David Braithwaite, Bloom City	Suspected of containing poison. None found.
Jan. 10	Tomato Flip	S. L. Harsham, Eau Claire	Benzoic acid present.
Feb. 1	Ice Cream	Young & Boerner, La Crosse	Standard.
Feb. 2	Spirits Camphor	J. D. Hatch, Lancaster	Not standard. Deficient in camphor.
Feb. 7	Canned Tomatoes	Jos. Smith, Milwaukee	
Feb. 11	Salad Dressing	S. H. Van Gorden & Son, Alma Center	Benzoic acid found.
Feb. 15	Powdered Sugar	B. O. Sather & Sons, Blair	Not standard. A mixture of powdered sugar and corn starch.
Feb. 24	Pineapple Preserve	Sophus Hanson, New Auburn	Tested for chemical preservatives. None found.
Feb. 24	Strawberry Preserve	Sophus Hanson, New Auburn	Tested for chemical preservatives. None found.
Mar. 3	Apple-Strawberry Preserve	W. F. Krueger, Chelsea	Contains artificial color. No saccharine or benzoic acid.
Mar. 3	Strawberry Jam	Jos. B. Fleischman, Abbotsford	Contains artificial color. No saccharine or benzoic acid present.
Mar. 3	Peach-Apple Preserves	Philip Marcus, Rib Lake	Contains benzoic acid.
Mar. 3	Apple-Strawberry Preserve	Philip Marcus, Rib Lake	Contains artificial color.
Mar. 4	Imitation Apple Jelly	Medford Co-op. Co., Medford	Contains no saccharine or chemical preservatives.
Mar. 5	Ice Cream	Tsapels & Adraktis Co., Manitowoc	Standard.
Mar. 7	Buttered Toast	Baltimore Lunch, Milwaukee	Fat extracted with pt. ether.
Mar. 7	Smoked Fish	Harry Cook, Eau Claire	Fish found to be unfit for food—mouldy, partly decomposed.
Mar. 15	Sugar	Henry Mueller, Luxemburg	Pure Cane.
Mar. 15	Sugar	Henry Mueller, Luxemburg	Fermentation indicates beet sugar.
Mar. 21	Whole Milk Powder	Wisconsin Dry Milk Co., Mayville	Fat—26.71 per cent; moisture—3.87 per cent.
Mar. 24	Candy	A. W. Thompson, West Salem	Misbranded.
Mar. 29	Candy	Wm. Edwards, Amery	No saccharine.
April 7	Powdered Skim Milk	Merton Dairy Products Co., Merton	Fat—.47 per cent; moisture—3.6 per cent.
April 8	Strawberry Jam	A. Fricke, Colby	Tested for chemical preservatives. None found.
April 26	Apple Jelly	Elderon Mercantile Co., Elderon	Tested for chemical preservatives and saccharine. None found.
May 3	Salad Dressing	W. C. Bowman, Elmwood	Found to contain benzoic acid or benzoate of soda.
May 3	Nut Jam	J. A. Hiel, Elmwood	Tested for chemical preservatives. None found.
May 4	Peach Preserves	R. W. Fink, Ellsworth	Found to contain benzoic acid.
May 4	Salad Dressing	E. A. Peterson, Ellsworth	Benzoic acid found.
May 4	Salad Dressing	E. A. Druding, Ellsworth	Benzoic acid found.
May 6	Salad Dressing	R. H. Clark, River Falls	Benzoic acid found.

May 6	Salad Dressing	Norseng Brothers, River Falls	Benzoic acid found.
May 12	Cherries	E. Mortinson, Baldwin	Small amount of benzoate of soda present.
May 12	Cherries	J. Tousley, Baldwin	Tested for chemical preservatives. None found.
May 12	Ketchup	S. S. Holmes, Baldwin	Not standard. Found to contain benzoic acid or salt thereof.
May 13	Turpentine	Olive Brothers, Otsego	Pure: probably wood turpentine.
May 18	Potpourri	Barrows & Murrish, Stevens Point	No benzoate.
May 18	Strawberries	Barrows & Murrish, Stevens Point	No benzoate.
May 19	Crushed Cherries	H. Hackbarth, Mosinee	Tested for chemical preservatives. None found.
June 10	Coffee	George Strayer, Argyle	Suspected of containing poison. None found.
June 11	Cherries	Kelly Brothers, New Richmond	Tested for chemical preservatives. None found.
June 29	Crushed Cherries	Boyd Pharmacy, Boyd	Tested for chemical preservatives. None found.

MISCELLANEOUS SACCHARINE PRODUCTS

Date	Sample of	Bought of or Submitted by	Remarks
1920			
July 1	Brown Sugar	Mrs. Oscar Rounsville, Spring Brook	Suspected of containing arsenic. None present.
July 7	Honey	The Rieder Co., Madison	Suspected of containing sorghum or molasses. Found to contain glucose.
July 30	Honey	Geo. T. Shell, Madison	Found to be pure honey.
Aug. 13	Saccharine Tablets	Howe Brothers, Stoughton	Saccharine present.
Sept. 20	Honey	Chas. David, Watertown	Free from adulteration.
Oct. 4	Pulverized Sugar	Mr. Carbit, Madison	Qualitative test for starch positive; test for dextrose negative.
Oct. 9	Honey	Robert L. Ramsey, Kilbourn	Found to be free from adulteration.
Oct. 22	Buckwheat Honey	Mrs. F. J. Schoenheide, Bear Creek	Found to be free from adulteration.
Nov. 9	Honey	M. C. Geoghan, Wisconsin Rapids	Standard.
Nov. 15	Maple and Rock Candy Syrup	J. G. Smith, Kaukauna	Not standard. Contains less than 50% maple syrup.
Nov. 30	Loganberry Syrup	American Co-operative Association, Almond	Misbranded and adulterated. Contains artificial color.
Dec. 8	Honey	Dr. Fracker, Madison	Not standard. Contains honey dew.
Dec. 28	Honey	Mrs. G. A. Paulman, Madison	Pure honey. No adulteration but not very well ripened honey.
1921			
Jan. 17	Honey	A. L. Smangeski, Stevens Point	Tastes like buckwheat honey.
Jan. 17	Honey	A. L. Smangeski, Stevens Point	More blend in taste than No. 1. Darker color. True to label.
Feb. 3	Maple Syrup	Christopher and Sons, Albany	True to label.
Feb. 17	Honey	L. D. Moses, Ogdensburg	Free from adulteration.
Mar. 10	Hickory Syrup	Christopher and Sons, Albany	Claimed 16 ounces or one pint.

Miscellaneous Saccharine Products—Continued

Date	Sample of	Bought of or submitted by	Remarks
1921			
Mar. 14	Maple Syrup	E. A. Hochtrit, Wausau	Standard.
Mar. 14	Maple Syrup	F. Hannemann, Wausau	Standard.
Mar. 14	Maple Syrup	C. H. Wegner, Wausau	Not standard.
Mar. 19	Maple Syrup	People's Meat Market, Colfax	Not standard.
Mar. 27	Maple Syrup	Mr. W. J. Geib, Madison	Standard.
Mar. 27	Maple Syrup	Mr. W. J. Geib, Madison	Standard.
Apr. 14	Maple Syrup	Mr. Caughey, Madison	Free from adulteration.
April 14	Maple Syrup	E. C. Sehauer, Hartford	No adulteration.
April 14	Maple Syrup	T. J. McCollow, Ellsworth	Misbranded. Label contains false and misleading statement. Below standard in total solids.
April 15	Maple Syrup	Norseing Bros., River Falls	Below standard in total solids.
April 21	Pure Maple Syrup	C. C. Hocher, Greenwood	Below standard in total solids.
June 21	Honey	Mrs. Geo. F. Holly, Cable	Free from adulteration.

Submitted Miscellaneous Products

Date	Kind	Submitted by	Remarks
1920			
July 3	Lemon Emulsion Flavor	Charles Ruskow, Milwaukee	Found to contain 20 per cent lemon oil, balance being small amount of water and corn starch. Free from gums.
July 14	Red Barn Paint	Andrew Brummer, Black Earth	Not pure. Linseed oil and turpentine used.
July 19	Chickens	Mrs. F. Denrinter, Madison	Suspected of containing poison but none found.
July 19	Vanilla Flavoring	Ludwig Wolfe Ice Cream Co., Milwaukee	Analysis shows presence of coumarin in considerable amount.
July 26	Cheese Curd	M. T. Sherwood, Sauk City	Standard.
July 26	Cheese Curd	M. T. Sherwood, Sauk City	Standard.
July 29	Paint	W. D. Mulry, Sechlerville	A mixture of white lead and zinc sulphide.
Aug. 3	Paint	Julius Huppert, Prescott	Badly adulterated. Does not contain pure linseed oil.
Sept. 17	Ice Cream Mix	Carl Krohn, Madison	Fat 12.10 per cent.
Sept. 17	Ice Cream Mix	Carl Krohn, Madison	Fat 11.84 per cent.
Sept. 20	Alcohol	Dr. F. T. Field, Elroy	Suspected of containing wood alcohol. Found to be free from same and also free from methyl alcohol.

Sept. 25	Fried Eggs	Albert W. Grady, Pt Washington	Suspected of containing poison. Small amount of arsenic found.
Oct. 12	Black Wool Yarn	A. Edwards, Curtis	Found to be pure wool.
Oct. 12	Grey Wool Yarn	A. Edwards, Curtis	Found to be pure wool.
Oct. 16	Red Barn Paint	Elmer Bruns, Morrisonville	Contains no linseed oil. Oil found to be nature of kerosene or a heavy benzine or naphtha and a black tarry mass.
Oct. 21	Nitrous Ether	Ed. Williams, Madison	Standard.
Oct. 25	Oil of Sassafras	Northwestern Extract Co., Milwaukee	Complies with all requirements of U. S. Pharmacopoeia for oil of sassafras. Badly adulterated.
Nov. 3	Anti Ferment	Schils Bros., Port Washington	A saturated solution of benzoate of soda
Nov. 3	Alex-Co-All	Schils Bros., Port Washington	A product consisting of a gum and common salt sold for twenty dollars a pound.
Nov. 3	Soap	J. J. Stumreiter, Fifield	Badly adulterated.
Nov. 19	Sediment from Whey Separator	A. Seefeldt, Plymouth	Composed largely of calcium sulphate.
Nov. 20	Sugar	G. A. Service, Green Bay	Free from adulteration.
Nov. 24	Sugar	Mrs. J. D. Gleason, Marinette	Free from adulteration.
Nov. 26	Sulphuric acid	Dairy Belt Cheese & Butter Co., Spencer	Sp. Gr. at 15.5 C. is 1.835.
Nov. 27	Paint	M. E. Johnson, Madison	Pigment:—Linoxyn, sand, etc., 5.45 per cent; Basic lead carb., 80.75; Calcium carb., 10.72; Ferric oxide, 1.84; Zinc sulphide, 1.24; total, 100 per cent.
Nov. 27	Paint	M. E. Johnson, Madison	Volatile matter in paint, 7.46 per cent; Iodine value of oil, 148.75; Unsap. matter in oil, 2.72.
Dec. 6	Rennet	A. Seefeldt, Plymouth	Tested for calcium sulphate—none found.
Dec. 10	Alcohol	Dr. F. F. Field, Elroy	Standard.
Dec. 13	Sugar	Teckemeyer Candy Co., Madison	Tested for cholorides and sulphates. None found. Sucrose, 100 per cent.
Dec. 13	Onions	Mr. Foxwell, Baraboo	Suspected of being contaminated by fire extinguisher. Sulphates present in small amounts in outer skins. Sulphates absent when outer skins are removed.
Dec. 21	Pea Juice	Geo. Scherer, North Freedom	Alcohol by volume, 7.62 per cent.
Dec. 21	Kold Relief	F. Eitsert, Ferryville	Found to contain 41.25 per cent alcohol.
Dec. 25	Sal Tonic	H. C. Kitchen, Madison	Salt dissolved in water pigment in suspension dissolved in H. C. L. and HAO_3—added IH_4, or Hydroxide of Iron ppt.
1921			
Jan. 5	White Paint	W. S. Adams, Mondovi	Adulterated with mineral oil
Jan. 9	Almonds	Carl F. Barz, Fond du Lac	About 1 to 1½ per cent of bitter almonds present.
Jan. 24	Testing Acid	Ed. Tuschel, Reedsville	94° absolute sulphuric acid. Little too strong.
Feb. 5	Alcohol	Mr. Bloodgood, Madison	No wood alcohol found.
Feb. 8	Water	Mrs. Aug. Tegge, Edgar	No minerals.
Mar. 5	Ice Cream Mix	Manitowoc Products Co., Manitowoc	Total solids, 37.84 per cent; Fat, 12.02 per cent.
Mar. 12	Turpentine	H. J. Kohlhepp & Son, Eau Claire	Free from adulteration.
Mar. 15	Yeast	H. R. Richter, Merrill	Miscroscopical examination shows sub. to be yeast cells—ferments, 5 per cent sugar solution.

Submitted Miscellaneous Products—Continued

Date	Kind	Submitted by	Remarks
1921			
Mar. 30	Gasoline	Dr. Fischer, Madison	Residue drained—1 cc. Loss.
April 12	Soot Remover	Eugene Quinnell, Wisconsin Rapids	Found to be a mixture of sodium chloride and manganese dioxide
April 26	Ice Cream Mix	Cronin Dairy Company, Janesville	Standard.
May 3	Paint	John H. Reirson, De Forest	Not a pure white lead and zinc paint.
June 8	Wool Blanket	Assemblyman Holly, Madison	43.3 per cent cotton; 56 .7 per cent wool.
June 11	Red Barn Paint	A. O. Delje, Morrisonville	Pigment; iron oxide and coal tar dye. Vehicles, over one-third naphtha; residue, a tarry mass giving positive test for resins. Volatile on water bath, 30.3 per cent.
June 11	White Lead	M. E. Brand, Bangor	No adulteration found.
June 16	Ice Cream Mix	H. H. Whiting, Lake Mills	Standard.

Vinegar—Standard

Date	Kind	Bought of or submitted by	Manufacturer or Jobber	Remarks
1920				
Oct. 6	Cider	Martin Miller, New Lisbon	Martin Miller, New Lisbon	Standard.
Oct. 6	White	Martin Miller, New Lisbon	Martin Miller, New Lisbon	Standard.
1921				
Feb. 23	White	Mane-Schwat Henrichs, Middleton		Standard.

Vinegar—Not Standard

Date	Kind	Bought of or Submitted by	Manufacturer or Jobber
1920			
Oct. 5	Cider	H. J. Jones, Adams	F. B. Ives Co., Oshkosh.
Oct. 26	Cider	W. P. Logan, Tomah	
Oct. 26	Cider	Tomah Cash Mercantile Co., Tomah	Wood County Grocery Co., Wisconsin Rapids.
1921			
Feb. 5	Amber	W. E. Chandler, Madison	M. A. Gedney.

Vinegar—Submitted Samples

Date	Submitted by	Grams Acetic Acid per 100 ccs.	Remarks
1920			
July 1	L. J. Carbeille, Jr., North Freedom	4.48	Standard.
July 22	Mrs. Georgia Fergerson, Mt. Hope	1.2	Not standard.
July 22	Mrs. Georgia Fergerson, Mt. Hope	1.82	Not standard.
July 27	Clyde B. Terrell, Oshkosh	3.31*	Not standard.
July 27	Clyde B. Terrell, Oshkosh	3.3	Not standard.
July 27	Clyde B. Terrell, Oshkosh	2.97	Not standard.
July 27	Clyde B. Terrell, Oshkosh	4.02	Standard.
July 27	Clyde B. Terrell, Oshkosh	6.9	Standard.
July 27	Clyde B. Terrell, Oshkosh	5.34	Standard.
July 27	Clyde B. Terrell, Oshkosh	7.385	Standard.
July 27	Clyde B. Terrell, Oshkosh	6.54	Standard.
July 27	Clyde B. Terrell, Oshkosh	4.24	Standard.
July 27	Clyde B. Terrell, Oshkosh	5.85	Standard.
July 27	Clyde B. Terrell, Oshkosh	6.84	Standard.
July 27	Clyde B. Terrell, Oshkosh	6.96	Standard.
July 27	Clyde B. Terrell, Oshkosh	9.37	Standard.
July 27	Clyde B. Terrell, Oshkosh	7.02	Standard.
July 27	Clyde B. Terrell, Oshkosh	1.83	Not standard.
Aug. 11	L. A. Van Galilan, Beloit	1.47	Not standard.
Aug. 11	L. A. Van Galilan, Beloit	2.79	Not standard.
Aug. 21	Silas Phelps, Markesan	2.85	Not standard.
Aug. 21	Silas Phelps, Markesan	4.23	Standard.
Aug. 21	Silas Phelps, Markesan	3.96	Not standard.
Aug. 21	Silas Phelps, Markesan	4.32	Standard.
Aug. 21	Silas Phelps, Markesan	3.12	Not standard.
Aug. 21	Silas Phelps, Markesan	4.92	Standard.
Aug. 21	Silas Phelps, Markesan	1.86	Not standard.
Aug. 21	Silas Phelps, Markesan	5.46	Standard.
Aug. 21	Silas Phelps, Markesan	4.38	Standard.
Aug. 21	Silas Phelps, Markesan	4.68	Standard.
Aug. 21	Silas Phelps, Markesan	2.19	Not standard.
Aug. 21	Silas Phelps, Markesan	1.62	Not standard.
Aug. 21	Silas Phelps, Markesan	3.36	Not standard.
Aug. 21	Silas Phelps, Markesan	4.41	Standard.
Aug. 21	Silas Phelps, Markesan	4.95	Standard.
Aug. 21	Silas Phelps, Markesan	1.98	Not standard.
Aug. 21	Silas Phelps, Markesan	2.76	Not standard.

Vinegar—Submitted Samples—Continued

Date	Submitted by	Grams Acetic Acid per 100 ccs.	Remarks
1920			
Aug. 21	Silas Phelps, Markesan	3.6	Not standard.
Aug. 21	Silas Phelps, Markesan	3.03	Not standard.
Aug. 27	Walter Mylrea, Kilbourn	4.86	Standard.
Aug. 30	W. T. Anderson, Madison	4.92	Standard.
Sept. 1	Michigan Refining & Pres. Co., Menominee, Mich.	4.08	Below standard in soluble phosphoric acid.
Sept. 1	Michigan Refining & Pres. Co., Menominee, Mich.	3.78	Below standard in acetic acid and in soluble phosphoric acid.
Sept. 27	Union Produce Co., Whitewater	3.72	Not standard.
Oct. 29	Silas Phelps, Markesan	3.54	Not standard.
Oct. 29	Silas Phelps, Markesan	2.91	Not standard.
Oct. 29	Silas Phelps, Markesan	5.28	Standard.
Oct. 29	Silas Phelps, Markesan	4.14	Standard.
Nov. 9	Eimon Mercantile Co., Superior	4.5	Standard.
Nov. 16	W. E. Chandler Grocery Store, Madison	4.66	Not standard in ash and soluble alkalinity.
1921			
Jan. 28	S. C. Shannon Co., Appleton	4.16	Standard.
Feb. 14	Silas Phelps, Markesan	3.72	Not standard.
Feb. 16	Silas Phelps, Markesan	3.57	Not standard.
Feb. 16	Silas Phelps, Markesan	4.77	Standard.
Feb. 16	Silas Phelps, Markesan	5.31	Standard.
Feb. 16	Silas Phelps, Markesan	4.14	Standard.
Feb. 16	Silas Phelps, Markesan	4.32	Standard.
Feb. 16	Silas Phelps, Markesan	4.83	Standard.
Feb. 16	Silas Phelps, Markesan	3.63	Not standard.
Feb. 16	Silas Phelps, Markesan	3.51	Not standard.
Feb. 16	Silas Phelps, Markesan	3.96	Not standard.
Feb. 16	Silas Phelps, Markesan	3.75	Not standard.
Feb. 16	Silas Phelps, Markesan	3.96	Not standard.
Feb. 16	Silas Phelps, Markesan	3.27	Not standard.
Feb. 16	Silas Phelps, Markesan	3.87	Not standard.
Feb. 16	Silas Phelps, Markesan	3.87	Not standard.
Feb. 16	Silas Phelps, Markesan	3.54	Not standard.
Feb. 21	Harry Borcherding, Belmont	3.72	Not standard.
April 23	Bayfield Peninsula Fruit Co., Bayfield	3.81	Not standard. Low in acetic acid.
April 23	Bayfield Peninsula Fruit Co., Bayfield	5.08	Standard in acidity.
April 23	Bayfield Peninsula Fruit Co., Bayfield	6.15	Standard in acidity.
April 23	Bayfield Peninsula Fruit Co., Bayfield	4.71	Standard in acidity.
April 23	Bayfield Peninsula Fruit Co., Bayfield	5.0	Standard in acidity.
April 23	Bayfield Peninsula Fruit Co., Bayfield	5.93	Not standard.
		3.12	Not Standard.

REPORT OF HARRY KLUETER

Chief Chemist and Assistant Commissioner 1921-1922

HON. J. Q. EMERY,
Dairy and Food Commissioner.

Dear Sir: I take pleasure in submitting, herewith, a report of the work of the chemical laboratory and as Assistant Dairy and Food Commissioner for the year ending June 30, 1922.

The number of samples analyzed during this year is practically the same as the number of samples analyzed during the preceding year—1,427 for the year ending June 30, 1921, and 1,429 for the year ending June 30, 1922.

The work of the laboratory is very closely related to the work of the dairy, creamery and cheese factory inspectors and the food inspectors. Samples collected and submitted by our inspectors must be and are selected in an intelligent and careful manner. One acquainted with the methods necessarily employed in the enforcement of the dairy, food and drug laws can readily see the inevitable results—confusion, useless duplication, inefficiency, incompetency and injustice to those inspected because of the large opportunity and likelihood of misinformation if our inspectors are not properly trained and if they do not keep in touch with the work of the laboratory. It requires no over-taxing of the imagination to say that unless our field work is properly and intelligently performed, the space in the laboratory might well be over-taxed with useless samples.

The impression seems to exist that a dairy, creamery, cheese factory or a food inspector has little to do in creameries except to smell of the churn and buy a sample of butter and submit it to the laboratory, and perhaps collect samples of all of the milk delivered to the creamery or cheese factory and send them to the laboratory. In the case of the food inspectors the impression seems to be that they walk into a grocery store or meat market, look around to see whether the shelves are dusty, buy a few samples and depart. Nothing could be further from the truth. This class of inspectional work is strictly technical. Each man must be specially fitted by training to accomplish the purpose for which he has been employed. His employment is a result of legislative action in attempting to correct an existing evil, either danger to the public health or the prevention of fraud and deception. Only through an intelligent and efficient inspection of the manufacture, sale and distribution of dairy, food, drug, paint and oil products can it be hoped to correct and control the conditions required to be corrected by the Dairy and Food Department. To expect an inspector not properly trained and qualified to advise and deal with merchants, manufacturers and

distributors of the various products required to be inspected by the Dairy and Food Department, would be the height of folly, for it is to be remembered that the work is technical and that those engaged in the manufacture and handling of these products are well versed and skilled in their business. The results that could be expected of an incompetent inspector would compare very favorably with the results that might be reasonably expected if an attempt were made to generate steam without water, namely, destruction.

To illustrate the work of an incompetent inspector, we may take the work of a canning factory inspection. Quite a large percentage of the income of a canning factory is due to the quality of the product it cans. The loss of a half day's time in many instances mignt well result in the loss of thousands of dollars to the canning factory, which loss of course will be reflected in the returns to the farmers producing the vegetables for the canning factory. An inspector not qualified to do this work might well, because of lack of experience and judgment, materially interfere with the operators of a factory. It is well-known that the inefficient operation of a canning factory can make the growing of vegetables unprofitable, and one of the largest factors in producing this condition is the loss of time from day to day caused either by incorrectly constructed equipment, inefficient organization of the help, or improper standards of sanitation, conditions which can be and are largely remedied by efficient inspection. It is apparent that an inspector to do this kind of work must be specially trained and qualified, experienced and possessed of very liberal quantities of good judgment. Our inspectors must be qualified to meet many emergencies encountered in their work. If these emergencies are not properly met, the results may well run into losses of thousands of dollars, a large part of which will come from the producers and growers of the raw material who are in no way responsible in causing these losses. To control by inspection the operation of a business like the canning business, the cheese business or the butter business of a state under a license system is a matter carrying with it great responsibility.

Beverages

There were analyzed during the year ending June 30, 1922, thirty-three beverages. Eight of the samples were grape juice. The analytical work shows four samples of grape juice to have been preserved with a chemical preservative. The preservatives used were in one instance benzoate of soda and in the other cases sulphur dioxide. The latter preservative was formerly used in practically all of the samples of white grape juice. Its use in this product serves two purposes, that of a clarifier and a preservative. Its use in other than white grape juice is not practical because of the effect it would have on the coloring matter in the grape juice. I am pleased to say that because of our work with white grape juice preserved by the use of sulphur dioxide it is disappearing from the state and

in its stead there is being offered for sale the unpreserved product, very much superior in flavor and the sale of which is not in contravention of law.

Seven samples of soda water beverages were tested to determine whether or not they contained a chemical preservative or were prepared with saccharin as a sweetening agent instead of sugar. All of the samples tested were found to be free from either soluble chemical preservatives, such as benzoic acid and benzoates, salicylic acid and silicates and were found to be free from saccharin.

I am of the opinion that some work on the question of proper labeling or branding of this class of product could be profitably undertaken in the near future. This matter will be kept in mind and if the work of the laboratory is such and time permits, it will be taken up for investigation.

Some determinations of the percentage of alcohol in soda water beverages were made at the request of the Attorney General of the state, and the information obtained was made available to that department in a matter then pending before the courts.

There were submitted during the year for analysis, eleven samples of miscellaneous beverages consisting of soda water beverages and imitation fruit punch. These samples were tested for chemical preservatives and saccharin. The work was limited to these tests due in part to the fact that we do not have in the definitions and standards for food products a standard by which to judge these products. If we were to make a complete analysis of the product bought or submitted as Rocho-Rye, and found that it contained a certain percentage of sugar, a certain percentage of a flavoring ingredient and a coloring matter, dissolved in water or perhaps carbonated water, we would not be in a position, as a result of such work, to pronounce the product adulterated because we have no standard fixed for such a food product and, as you at once recognize, this product is one of a large number of such products which sprang into existence to take the place of a class of alcoholic beverages that had disappeared because of prohibition. The laboratory work in connection with the food inspection work in the field has shown this class of product to be very short lived, and the attempt to induce the public to accept these products as a substitute for the genuine product has proven a failure. In this connection a Service and Regulatory Announcement of the Bureau of Chemistry is of interest and value and is being incorporated. This Regulatory Announcement is as follows:

"In the opinion of the bureau the composition and character of whisky, gin, rum, brandy, and articles of similar nature are such that non-alcoholic products identical with them except in alcohol content cannot be prepared. The bureau therefore will regard as misbranded any product designated by these terms, even when they are modified by the word 'imitation.'

"The terms 'dealcoholized wine' and 'nonalcoholic wine' should be restricted to wine, the fermented grape product, from which the alcohol has been removed without appreciable loss of character-giving con-

stituents other than alcohol, such as the substances which give flavor and bouquet. In labeling such articles the term indicating the absence of alcohol should be printed in direct connection with the word 'wine' and with the same degree of prominence. Where a specific designation is used, such as 'dealcoholized claret,' 'nonalcoholic burgundy,' the product must be true to type. The expression 'dealcoholized wine' is preferred to 'nonalcoholic wine,' in that it more definitely describes the product.

"Beverages not identical in composition and character with dealcoholized wine are considered misbranded if labeled or sold under any representation carrying direct or indirect suggestion that they are wine, regardless of whether or not an expression indicating the absence of alcohol is used.

"In order to harmonize the action of this bureau in the enforcement of the Food and Drugs Act with the position taken by the Bureau of Internal Revenue in the enforcement of prohibition legislation, exception will not be taken to the term 'nonalcoholic' when used on beverages containing less than one-half of one per cent of alcohol.

"Beverages or beverage concentrates prepared from fruit products or synthetic flavors are not properly described by names indicative of alcoholic products or imitations of those products, such, for example, as 'nonalcoholic peach cordial' and 'nonalcoholic imitation peach cordial.'

"Of the types of cordials formerly on the market many were of such character that products identical with them except for the absence of alcohol cannot be prepared. The expression 'nonalcoholic cordial,' or an equivalent term, may be used only where the product is identical in all respects except alcohol content with the cordial indicated."

DAIRY PRODUCTS

Butter

During the year one hundred four samples of butter consisting of creamery butter and dairy butter purchased by the inspectors and submitted for analysis because they believed them to be adulterated and twenty-six samples submitted, a part of which were submitted by creamery men, were analyzed. Of the seventy-eight submitted by our inspectors, fifty were found to be in compliance with the standard for butter and twenty-eight were found to be adulterated when judged by the standard for butter.

It will be noted that a larger percentage of the samples of butter purchased and submitted for analysis were found to be in compliance with law than is the case with other kinds of food sampled and analyzed. The reason for this is that our inspectors do not have with them the necessary equipment for making fat tests on samples of butter, and therefore must be guided in the samples purchased and submitted entirely by other facts such as the appearance and body of the butter, the percentage of overrun as reported by the creameries visited, information given them as to excessive percentages of overrun by competing creameries, complaints given them by competing creameries and merchants dealing in butter and a knowledge of the methods of manufacture used in creameries in their territories.

The method of determining the percentage of fat in butter is not as easily applied as is the testing of fat by the Babcock method in samples of cream and milk; hence, our inspectors have no reliable way of singling out the adulterated samples from those that are not adulterated. The result is that they are forced to submit every sample of butter collected by them. This condition satisfactorily explains the relatively large number of samples of butter submitted which, when analyzed were found to be in compliance with the standard for butter.

An examination of the results of analysis of the twenty-eight samples classed as "not standard" will disclose immediately the three reasons for the low percentages of fat in those samples, namely, the incorporation of an excessive amount of water in the manufacture, the incorporation of excessive amounts of salt, and the incorporation of excessive amounts of both water and salt. In one sample found to contain only 71.87 per cent of fat there was found 23.41 per cent of water and at least 3.7 per cent of salt. In one sample found to contain 72.75 per cent of fat it was found that 21.71 per cent of moisture and at least 4.5 per cent of salt were incorporated. Other samples were found to contain as low as 76 per cent, 77.1 per cent, 77.8 per cent and 77.7 per cent fat.

An examination of this table of analysis will also disclose the fact that several of the concerns manufacturing and selling butter have been found on more than one occasion to have sold adulterated butter. An examination of the prosecutions instituted by the department during the year will show that these concerns have paid a penalty for a violation of law on more than one occasion. That there is a constant need for close supervision of the butter offered for sale is evident from the fact that a little more than 35 per cent of the samples collected by the inspectors were found to be below the legal standard for that product.

During the year ending June 30, 1922, considerable attention was given to the enactment of a new definition and standard for butter by Congress. Creamery butter manufactured in the United States is manufactured in two types of creameries, those known as the cooperative creameries controlled and operated by a number of farmers or others engaged in the production of cream to be manufactured into butter, and the other type known as a centralizer creamery. As the name suggests, this creamery collects from a very large territory in every direction possible from its plant, ships by railroad or truck for considerable distances and manufactures its product, butter, in a centrally located plant. As will be pointed out later, the quality of a product of such a plant cannot be efficiently controlled because of the lack of facilities during transportation to properly care for cream, the greater lapse of time between the production of cream and manufacture of butter, the fact that cream is purchased from small producers not specially interested in producing cream of good quality, all of which result in the necessity of manufacturing butter with a fairly high salt content.

It is evident that if a fairly high salt content is maintained in the manufacture of butter, there is little demand for a moisture content in excess of 16 per cent. There arose, therefore, a controversy as to the proper constituents to be included in a butter standard. That is to say, should a minimum percentage be fixed for the fat and for curd and a maximum percentage for moisture and for salt, or should there be simply a minimum percentage fixed for fat and a maximum percentage for moisture, or should there be a single standard simply fixing a minimum percentage for fat. With a product containing three constituents easily controlled in the process of manufacture, fat, moisture and salt, it will be readily seen that if the conditions of manufacture, because of the quality of raw material used, are such as to necessitate the use of a high percentage of salt, that branch of the industry would be especially anxious to fix a maximum moisture content for butter because it would work to the disadvantage of their competitors, the manufacturers of unsalted or lightly salted butter, who secure a fresher and therefore better supply of cream to be used by them in the manufacture of their product. Such a standard would necessitate higher percentages of fat in unsalted and lightly salted butter. Considerable time and thought were given to this matter to enable a proper presentation of the matter to those in congress whose duty it was to enact a proper definition and standard for butter. The outcome was that on March 4, 1923, congress enacted the following definition and standard for butter:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purposes of the Food and Drug Act of June 30, 1906 (Thirty-fourth Statutes at Large, page 768), "butter" shall be understood to mean the food product usually known as butter, and which is made exclusively from milk or cream, or both, with or without common salt, and with or without additional coloring matter, and containing not less than 80 per centum by weight of milk fat, all tolerances having been allowed for.

In connection with the analytical work here reported on butter, I deem it of importance that attention be called to various defects in butter, some of which in my opinion are sufficient to class the product as adulterated under our food laws if the defects mentioned are present. This is especially valuable inasmuch as remedies for the defects are likewise given. I therefore submit part of an article entitled "Defects in the Quality of Butter," by C. W. Fryhofor, U. S. Department of Agriculture. The following statements as to the cause of fishy flavor, metallic flavor and oily flavor in butter and preventive measures necessary to eliminate these off-flavors are of interest and importance.

Fishy Flavor

"Extensive investigations of fishy flavor in butter have not yet revealed any specific factor which might be considered as the sole cause of this objectionable taste. Theories advanced from time to

time have attributed it to such causes as impure natural ice added direct to cream; overripe or otherwise defective starters; improper pasteurizing; exposure of milk and cream to the hot sun during transit; vats, starter cans, and pasteurizing apparatus with the tin worn off, rusty pipes, cans, and utensils; slushy texture in butter, and decomposition of the nonfatty constituents caused by bacterial action.

"However, since investigation in different countries have met with seemingly different results, it is assumed that the cause is complex in nature and that fishy flavor has its origin in various factors or a combination of factors. One thing commonly agreed upon is that acid in cream is essential to the development of fishy flavor. This has also been demonstrated in the butter made from pasteurized sweet cream for the use of the United States Navy and which, when kept for long periods of time in cold storage, has never developed fishy flavor.

"Inasmuch as it has been demonstrated that iron rust and verdigris when mixed with high-acid cream cause fishy flavor, it is generally believed that these ingredients are frequently contributing factors and that in most cases the trouble may be traced to chemical changes.

Prevention of Fishy Flavor

"Among the various preventive methods, the following are worthy of careful consideration:

"1. As fishy flavor occurs most readily in high-acid cream, it is obvious that the control of acidity in the ripening process is of utmost importance. Cases are on record in which the trouble has been entirely eliminated by close attention to the propagation of starters and to the checking of acidity in the cream at the proper time during the ripening process. Irregular and infrequent delivery of cream should be avoided. This detrimental, slipshod method causes the cream to be held for an undue length of time and usually results in the development of high acid.

"2. Exposure to the hot sun during transit should be prevented by a suitable covering or blankets, preferably applied wet.

"3. The use of rusty, insanitary, and otherwise defective cans should be prohibited. When cans are returned empty it is essential that they be properly washed, sterilized, and dried at the factory.

"4. Great caution should be exercised when pasteurizing to prevent the "oiling off" of the fat during the process. If the flash method is used, it is essential that the supply of cream be constant and so regulated that the pasteurizer may work at full capacity. When the vat method is used it is important that the cream be stirred sufficiently while being heated. If the cream is of a heavy consistency, a slow heat must be applied until it flows readily over the coils. To insure proper stirring a vat should be filled only to within four inches of the top.

"5. Since it has been proved that fishy flavor may develop from the action of acid on copper, iron, and certain alloys in pipes, pasteurizers, coolers, starter cans, vats, or other apparatus, none but heavily tinned apparatus should be used.

"6. High churning temperatures and overworking of the butter should be guarded against.

Metallic Flavor

"Metallic flavor, like fishy flavor, is one of the most objectionable tastes that develops in butter. The two are closely allied, and both apparently may originate from the same sources. In fact, metallic flavor is often considered to be a forerunner of fishy flavor.

"Butter affected with metallic flavor is avoided by butter dealers because of its poor keeping qualities. Being unfit for storage purposes, such butter must be consumed immediately if heavy loss is to be avoided.

Prevention of Metallic Flavor

"While it is true that the specific element or combination of elements producing metallic flavor has not been fully determined, it has been amply demonstrated that the following precautions will prevent or greatly retard this defect.

"1. There should be no cracks or open seams in vats, coils, or any other apparatus with which cream comes in contact. Small defects or leaks of this sort often result in serious contamination of the cream.

"2. Cans, utensils, faucets, boltheads in churn, etc., should be kept free from rust by scouring or retinning. The presence of apparently insignificant traces of iron rust and verdigris from exposed copper has frequently proved to be the direct cause of the metallic flavor in butter. This is especially the case if heated cream containing a certain amount of acid comes in contact with exposed surfaces.

"3. Abnormal fermentation should be watched for in starter and cream. As soon as a slight "off" or "foreign" flavor becomes noticeable, a new culture should be provided.

"4. So far as possible, dilution of cream with water should be avoided. Pasteurization of diluted cream whose viscosity has been reduced tends to injure the butter fat.

"5. High acidity in cream should be guarded against. Acidity of cream has proved to be a fundamental factor in producing metallic flavor.

"6. Butter should not be overworked. Overworking tends to increase the air content, and the presence of an abnormal amount of air causes rapid oxidation of the casein, thus tending to produce metallic flavor.

Oily Flavor

"Oily flavor in butter is a defect most frequently found during the summer months. It includes a variety of flavors all distinctive to the taste. While these flavors are generally associated with butter made from excessively sour and poor material, they are by no means confined to the lower grades. Even butter made from sweet cream is often found to have a marked oily flavor. Whenever such flavors are present, the butter is considered by all dealers to be lacking in keeping qualities.

"These oily flavors may be divided into two groups: The unclean, fatty, and greasy kind, and the more pronounced strongly-repugnant kind, similar to the taste of old, impure machine oil. The first kind is caused by faulty manufacturing methods. The second is attributed by investigators to undesirable bacterial action.

Prevention of Oily Flavors

"While it is difficult to give specific preventives or remedies for all cases of oiliness, the following precautions have proved helpful in many instances.

"1. Close attention to the quality of the cream received will impress patrons with the necessity of the proper handling of cream on the farm and during transit where the cans are likely to be exposed to the sun.

"2. During pasteurization of cream great care must be exercised to prevent entirely the "oiling off" of the butter fat, which is likely to occur through the underfeeding of the pasteurizer when the continuous method is used, through insufficient stirring of cream in the vat method, or through the sudden application of too much heat.

"3. The dilution of cream with water, either through leaky coils or vats, or by rinsing cans with excessive amounts of water, will almost invariably result in an oily product.

"4. Oiliness has sometimes been traced to impure wash water or to water containing too much iron.

"5. Too much stress cannot be placed upon the necessity of insuring the proper condition of the butter for working. This condition can be obtained only by cooling and holding the cream at a sufficiently low temperature to obtain the desired hardening of the fat before churning.

"6. Overworking of butter, especially when in a soft condition, breaks down the grain and develops oily flavor.

"7. Of great significance in successful buttermaking is the careful and accurate preparation of starters. A weak or contaminated starter is often responsible for oiliness in butter."

Thirteen samples of butter were submitted by residents of the state because they suspected the samples contained foreign fat. The analysis of these products disclosed the fact that none of them contained foreign fat but in a goodly number of them the suspicion was justi-

fied from the flavor of the butter. It may be that some of the samples submitted were samples of poor quality cold storage butter. In submitting suspicious samples the question of flavor has a great deal to do with arousing suspicion as to adulteration.

Cheese

During this period three hundred five samples of cheese were collected and submitted by inspectors, many for the reason that they suspected that the cheese sampled contained more than the permitted amount of moisture permitted by law. Of the three hundred five samples collected and tested, two hundred ten were found to contain more moisture than permitted for the kind of cheese examined. Ninety-five were found to be in compliance with the moisture standard fixed for cheese known as American cheese and cheese known as Brick cheese. From this data it appears that practically two-thirds of the samples collected and tested contained excessive moisture.

If the analytical data collected and prepared are compared with the data collected and prepared for the preceding year, it could be correctly assumed that we were making no progress toward the elimination of the manufacture of cheese containing excessive moisture, for during the preceding year out of one hundred eighty-nine samples collected and tested ninety-four or practically one-half were found to contain excessive moisture. That is to say one sample out of every two collected and analyzed was high moisture cheese. This year a little more than two out of every three collected and tested were found to contain excessive moisture. A comparison of this sort, however, is not quite fair. A closer examination of the samples pertaining to moisture in cheese and the law for the preceding year discloses the fact that during nine months of the preceding year we were working under a forty per cent moisture standard for cheese known as American cheese and for only three months were working under the present standard of thirty-eight per cent moisture for cheese known as American cheese. I am calling your attention to this fact to show that a mere comparison of the tabulated results of the analytical work for the two years is not a fair basis of comparison, and if our work with the moisture contents of cheese were to be based entirely upon these results, the evidence would be very strong to show that we are not progressing, but to the contrary, are moving back; this I do not hold to be the case.

I have discussed quite fully in the report for the previous year my impressions of the effect of the manufacture of cheese containing excessive amounts of moisture, both with respect to its influence on the cheese industry of the state and the rights of the consumers of cheese. I shall therefore not enter into a discussion of that subject in this report. One fact brought out in the previous report, however, I believe is of sufficient importance to warrant calling your attention to again this year. That is that I am more firmly convinced

as a result of this year's work that much more rapid progress could be made toward eliminating excessive moisture in cheese if we were able to direct our work of enforcement toward the larger dealers, but with the wording of the present law it would be difficult to bring prosecutions against the larger dealers. While the law penalizes the exchange, sale, offering for sale or having in possession with intent to sell as well as the manufacture, securing the necessary evidence of sale, exchange or offering for sale cannot in a very large percentage of the cases be obtained in this state. We consume in Wisconsin only a small part of the cheese manufactured and therefore the large bulk of our product is shipped out of the state and the necessary evidence of sale and offering for sale is therefore beyond our jurisdiction.

During the past year Mr. Campbell, a cheese factory and dairy inspector, attempted to get evidence of sale in connection with several large lots of high moisture cheese being shipped out of the state but was unsuccessful. In one or two instances he found rather large shipments ready to be made to points in the state, and when the attention of the dealer was called to his liability under the law, he at once refused to move these lots of high moisture cheese. The result was that several cheese makers had large quantities of unlawful cheese at the warehouses held up and tested from time to time to determine when a sufficient amount of water had evaporated to bring them within the law. This means holding up the pay for this cheese by the dealer and works a real hardship on the cheese maker or the operator of the cheese factory producing high moisture cheese. That condition, that is the holding up of the sale of high moisture cheese, is a much more severe penalty for the cheese maker or operator of the cheese factory than is the payment of a twenty-five dollar or a fifty dollar fine. The incorporation of excessive amounts of moisture in cheese is so profitable and the sense of shame or disgrace for such law violation appears to be so slight, that we cannot hope to eliminate the practice with the ordinary penalty.

Cream

There were analyzed during the year one hundred fifty-one samples of cream. Thirty-four of these samples were collected and submitted by our inspectors for the purpose of checking up the Babcock testing of cream in the creameries and cream buying stations in various parts of the state. This number compares very favorably with the amount of work done along the same line for the previous year. It is very likely that this line of work will be called for from time to time in the future, and the efficient performance of this kind of work will have a beneficial effect upon those engaged in testing milk and cream by the Babcock test to determine its value. The results obtained by overreading or underreading are such as to make the practice tempting. Creamery men or butter makers are led to believe that they can gain business through overreading in some cases,

while if the practice of overreading is indulged in to any great extent, certain other practices must also be indulged in which are also in violation of law. That is to say, if the operator of a creamery pays his patrons for more butter fat than they are actually delivering, he must, in order to avoid losses in business, make up that shortage, either by giving short weight or by the manufacture of adulterated butter. It is also true that for the purpose of gaining new business the operator may overread the test of new patrons and slightly underread the test of the older patrons. The inspection reports of our inspectors show instances where tests made on milk by the butter maker or the cheese maker have been furnished to the secretary of the company who has changed the tests of various patrons to suit himself. This line of work is of great importance, requires skill and tact on the part of the inspector collecting samples, and judged from the results obtained, perhaps a greater effort in this line of work is justified.

Forty samples of cream were gathered by our inspectors from the milk supplies of the various cities. Upon analysis we found eight of the samples to be up to the legal requirement of eighteen per cent for butter fat, while thirty-two of the samples were found to be below that standard. Reference to the analytical data discloses the fact that in the city of Wausau a sample of cream was obtained by one of our inspectors and tested only 12 per cent butter fat. In Waukesha, a sample was obtained testing 13.5 per cent of butter fat, and a sample collected in the city of Superior was found to contain only 13 per cent of butter fat, while in several of the cities samples were purchased by our inspectors which contained less than fifteen per cent of butter fat.

The date of purchase of the samples in the table of analysis is also of interest because it shows the fact that all samples were collected in less than six months of the year, beginning with the fifteenth of November and ending on March twenty-second. This condition is entirely due to the fact that city milk work has been carried on systematically by our creamery, cheese factory and dairy inspectors at that time of the year when the work in the factories is slack. It is to be regretted that city milk inspection work cannot be continued throughout the year during the summer months as well as during the winter months.

There were submitted and tested during the year sixty-four samples of cream. A large percentage of the samples submitted was by producers of cream and was sent in solely for the purpose of having their product tested so that they could compare the tests received with the tests they were being given at the places their products were sold. In some instances this furnishes a basis for investigation by this department to follow up the work of testing as it is done throughout the state by those engaged in buying cream. The percentage of butter fat contained in the submitted cream is not here reported but an examination of the analytical data discloses the fact that there is being produced quite a large percentage of low

testing cream. The delivery of low testing cream to creameries and cream buying stations is a source of waste, first in that a large percentage of skim milk is taken from the farm to the creameries and cream buying stations where it is of little or no value. In fact, in some instances it is a detriment while if allowed to remain on the farm where it belongs, it is a valuable feed for farm animals. The handling of low testing cream at these places wastes time and energy and undoubtedly does not have any beneficial effect upon the keeping quality of the cream. Patrons delivering cream to creameries and cream buying stations should aim to deliver cream testing between thirty and thirty-five per cent of butter fat. There are those who are inclined to believe that this cream should test between 45 and 50 per cent of butter fat, but I am of the opinion that their judgment is based solely upon the question of loss and energy required in handling. I am of the opinion that 30 to 35 per cent cream can be more accurately tested by the Babcock method than can the higher testing cream of 45 per cent, and in some instances even 50 per cent creams have been delivered. It is also known that cream testing between 30 and 35 per cent contains the percentage of butter fat most favorable for excellent churning conditions.

Ice Cream

Fifty-six samples of ice cream were collected and submitted to the laboratory for analysis during the year. Of the fifty-six samples analyzed, forty-five were found to be in compliance with the standards for ice cream and eleven were found to be below standard in butter fat. Four of these eleven samples were very badly below standard; most of the other samples were very near the fat standard. While this is not a very large number of samples of ice cream analyzed for the year, still the results as shown indicate strongly that an honest effort is being made by the manufacturers to keep the fat content of their product up to the legal requirements. The Ice Cream Makers' Association of the state I know are very well satisfied with the new definitions and standards, and since the enactment of these standards feel that the percentage of fat has been placed low enough. While representatives of the Ice Cream Makers' Association at the time the matter of changing the standard was before the legislature a year ago, felt that a 10 per cent butter fat standard would be desirable, now express themselves as more than satisfied to have the fat standard remain at a higher figure than they asked for at that time.

A greater number of samples must be collected in the future and the manufacture and sale of "New York" ice cream in particular must be investigated. While we have done a limited amount of experimental work toward collecting necessary evidence to prove whether or not eggs have been used in the manufacture of ice cream, I feel that it is necessary to do more of this experimental work and perhaps improve the method for the detection and estimation of

eggs used. At the present time, the methods are long and involved. It may be that shorter methods can be devised, but as you know, before the results of such shorter methods can be relied upon, a considerable number of samples of known composition will have to be analyzed. The use of artificial color, usually annatto, has been practiced by several of the dealers in the state and this is a matter that requires further attention. Yellow artificial color used in an ice cream mix tends to deceive and mislead the consumer of ice cream into believing that eggs were used in the manufacture of his product. This is but another proof of the fact that fraud can and is being committed by the use of artificial color in food products. There has been a great deal of interest by manufacturers of ice cream on the question of flavors. Heretofore many manufacturers of ice cream were of the opinion that if they attempted to use pure unadulterated vanilla extracts in the manufacture of their products, their business would be ruined. They were firmly convinced that it was necessary to use the cheap artificial compounds loaded with coumarin to give their product the desired vanilla flavor. The fact of course is that they do not impart a vanilla flavor to their product by the use of these cheap compounds, but on the contrary, impart a very inferior rank flavor known to be objectionable to anyone acquainted with the delicate and pleasing flavor of true vanilla. Viewing the ice cream situation of the state as a whole, I think it is in very fine condition, but there are undoubtedly, as I have pointed out, several important and interesting points to be investigated and corrected.

Milk

Two hundred thirty-one samples of milk submitted by inspectors as collected from creameries, cheese factories, condenseries and from the city milk supplies were received and analyzed and the results reported. Out of the ninety-seven samples collected at creameries, cheese factories and condenseries, twenty were found to be standard, while twenty-seven were found to be below the legal standard, and in most instances positive evidence of adulteration by the addition of water or the removal of fat was shown by the analytical work. The inspection reports of our inspectors show thousands of tests made for the purpose of detecting adulteration on samples of milk delivered by patrons to the various factories, and in addition to the usual tests—lactometer reading, fat test and a sediment test.

Many of our inspectors are now testing a large number of samples each month with the test known as the methylene blue test. This test is of especial value in detecting old milk, milk produced under unclean conditions, milk not properly stored and cared for, and may also be used in testing the milk of individual cows to show udder infection. Some of the inspectors have fairly well equipped milk testing laboratories at their homes, and are making a great many tests on herd samples in cheese factories having trouble with gassy

fermentations, and in many instances have even tested out the individual cows of herds where they have deemed it necessary.

The performance of this kind of work on the part of our inspectors is of great value both to the factory and to the owners of the herds. To have inspectors competent and equipped to make these tests is highly desirable and beneficial because it keeps the inspector in close touch with the milk supply of his territory and does a great deal toward holding the confidence of the factory patrons and the cheese makers and operators. I have no doubt that by the systematic work of these inspectors, large losses in milk and cheese have been averted. Work of this character on the part of the inspectors should be and is being encouraged. One of the obstacles encountered in submitting samples of milk to the laboratory for bacteriological work has been suitable means of transportation. It has been impossible to collect samples of milk, pack and ice them in such a manner as to insure their arrival at the laboratory in an iced condition. It is to be hoped that this difficulty will shortly be overcome so that bacteriological work on milk can be done at the laboratory. When this becomes possible, the inspectors can submit those samples which in their opinion need further study.

Forty-five samples of milk collected in cities and villages of the state were submitted by inspectors for analysis, eleven of which were found to be standard and thirty-four were found to be below the legal standard or adulterated in the usual manner, either by watering or skimming. In the samples reported as coming from cities are a number collected at hotels and restaurants. The results of the tests on these samples show in practically every case unmistakable evidence of skimming. It is well known that the consumption of milk by guests of hotels and restaurants is increasing rapidly but unless something is done to insure unadulterated milk to purchasers at these places, the benefit of this increased consumption can hardly be expected to be permanent. Investigations have shown in some few instances that adulteration was due to ignorance and carelessness but in a goodly number of instances there was evidence that the milk had been knowingly skimmed.

In the first city in which this work was undertaken in an extensive manner the prosecuting officials and even the court were disposed to treat lightly the violations of law called to their attention. But by persistent efforts of the inspector and by repeating the work and duplicating his former results, he finally convinced these officials that he was justified in complaining of the conditions he was finding. These officials, once convinced of the viciousness of the practice of removing the cream from milk before it was served to guests and patrons at hotels and restaurants, became supporters of the inspector with the result that several successful prosecutions were had. I believe it is safe to say that, as a result of this work, pure milk is now obtainable as it should be in the hotels and restaurants of that city. This work was not a new line of work but a line of work neglected in the past because of the fact that our inspectors

were overcrowded with work and therefore were unable to follow up all possible sources for the sale of adulterated milk. While the larger cities of the state have dairy and food inspectors with laboratories equipped to make tests on milk and cream, and are doing so at regular periods, practically all of these inspectors welcome the opportunity of working with a state inspector. It has been reported to me by health officers and other city officials that they are anxious to have our men come there and assist them in this work. They claim that the testing done by the state inspector at an unexpected time is of much value to them.

The importance of city milk inspection work cannot be overestimated and because of the fact that this work has been done, improvement in the milk supply of the cities is evident from our work of the last few years. It is not so many years ago when it was not an uncommon thing to find milk offered for sale in cities preserved with boric acid and formaldehyde, while today the use of these preservatives has disappeared entirely.

Frequent calls come to the department for aid in assisting the officials of the smaller towns and cities in draughting a proper city milk ordinance. For that reason I am incorporating in this report certain valuable suggestions taken from Bulletin No. 585, by A. D. Melvin, Department of Agriculture, which in my opinion covers very comprehensively the question of city milk control. As everyone familiar with the work of the Dairy and Food Department knows, we do not have the necessary help to make frequent inspections of the city and village milk supplies of the state, and for that reason encouragement and help to those places endeavoring to establish local control of milk supplies should be given.

Milk Ordinance

In a strict sense it is impossible to frame a milk ordinance, with its definitions, standards, and requirements, which will be suitable for all communities. On the other hand, a general skeleton form may be made that can be used as a framework upon which to build a finished, practicable, operative law. No local lawmaking body should attempt to draft a milk ordinance, with its standards, grades, and requirements, unless it is entirely familiar with local dairy and milk conditions, as well as with the purposes and intent of such an ordinance. A special study by competent authority should be made. In that way only can satisfactory standards—chemical, bacteriological, and sanitary—be prescribed.

With those ideas in view, the Bureau of Animal Industry and the Bureau of Chemistry have prepared a form of milk ordinance which, it is believed, if enacted and enforced, would assist the community in providing an instrument for bettering its milk supply.

The ordinance is restricted to the production, handling, and sale of milk and cream as such. It consists of eight sections, taking into consideration definitions, standards, grades, adulterations, the making of regulations, the collection of samples, and penalties.

A special feature of the ordinance is the grading of milk and cream. It is believed that grading is necessary and is of paramount importance. One of the great sanitary and economic questions will be solved if practical grading of milk, with the consequent grading of selling price, can be enforced. Three grades are considered—"Certified," grade A, and grade B. Pasteurization is compulsory for grade qualities of milk sold. No definite general score or bacterial requirements can be made to cover all conditions. Some communities, long under competent health jurisdiction, can enact and enforce more stringent laws than other communities not so fortunate. The health department must determine from its own experience the score and bacterial count for grades A and B. Grade A must be of such quality that there will be no question as to its purity and safety. Grade B can be of lower grade than A, because pasteurization is obligatory. No grade below that of B is recognized.

Another item of special importance is the provision which gives health authorities the right to make regulations for the further proper enforcement of the ordinance. That is a wise provision, as rules or regulations can define more fully and add necessary detail, and can be passed and amended without the difficulty encountered with general lawmaking bodies. The regulations can give details for the issuing of permits, for the examination of herds and milkers for disease, and for the cleanly production and handling of milk. They cannot, however, go beyond the scope expressed in the ordinance itself.

It is believed that this draft of an ordinance will prove to be a satisfactory framework upon which the average town or city can build a finished, practicable law, which, if properly enforced, will improve the average milk supply and work toward a desired uniformity of food laws.

FORM OF ORDINANCE

An Ordinance to Regulate the Production and Sale of Milk and Cream, and for Other Purposes

Be it ordained by the ..... of the city of .....,
That for the purpose and within the meaning of this ordinance, (a) "milk" is the lacteal secretion obtained from the complete milking of one or more cows; (b) "skimmed milk" is milk from which any of the milk fat has been removed; (c) "certified milk" is milk produced and handled in conformity with the "Methods and Standards for the Production and Distribution of Certified Milk," adopted by the American Association of Medical Milk Commissions May 1, 1912, and amendments thereto, in effect at the time of production, and certified to by a milk commission constituted in compliance therewith; (d) "grade A milk" is milk produced from healthy cows, as determined by the tuberculin test and physical examination within not exceeding one year previously by a qualified veterinarian, from

dairies that score not less than ..... on the dairy-farm score card in current use at the time by the United States Department of Agriculture, which milk shall not, at any time, contain more than ..... bacteria per cubic centimeter; (e) "grade B milk" is milk produced from healthy cows, as determined by physical examination within not exceeding one year previously by a qualified veterinarian, from dairies that score not less than ..... on the dairy-farm score card in current use at the time by the United States Department of Agriculture, which milk shall not, at any time, contain more than ..... bacteria per cubic centimeter; (f) "pasteurized milk" is milk which has been heated to, and for at least 30 minutes held at, a temperature of approximately 145, never less than 142, degrees Fahrenheit; (g) "cream" is that portion of the milk, rich in milk fat, which rises to the surface of the milk on standing, or is separated from it by centrifugal force, and containing not less than 18 per cent of milk fat; (h) "homogenized," or "emulsified," milk or cream is milk or cream which has been subjected to the mechanical process of homogenization, or of emulsification, as the case may be; (i) "unsterilized containers" are containers which either have not been subjected to moist heat at a temperature as high as 205 degrees Fahrenheit for two minutes or longer, or do not comply with such alternative requirements, to be prescribed by the regulations made pursuant to this ordinance, as may be necessary to effect sterilization thereof; and (j) "person" imports both the plural and the singular, as the case demands, and includes corporations, partnerships, societies, and associations.

When construing and enforcing the provisions of this ordinance, the act, omission, or failure of any officer, agent, or other person acting for or employed by any individual or by any corporation, partnership, society, or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission, or failure of such individual, corporation, partnership, society, or association, as well as that of such officer, agent, or other person.

Sec. 2. That no person shall sell or deliver for consumption as milk or cream or have in his possession with intent to sell or deliver for consumption as milk or cream either—

(a) Milk or cream to which water or any foreign substance has been added; or

(b) Milk containing less than three per cent of milk fat or less than ..... per cent of solids not fat, or cream containing less than eighteen per cent of milk fat, unless such milk or cream is plainly and conspicuously labeled "Subnormal," together with a statement showing the actual per cent of milk fat contained therein; or

(c) Skimmed milk which has not been pasteurized, or made from pasteurized milk, or which is not labeled "Skimmed Milk;" or

(d) Milk or cream containing, or which has been exposed to, any disease-producing bacteria; or

(e) Milk or cream the container of which is labeled or branded so as to mislead or deceive the purchaser; or

(f) Milk or cream produced from diseased cows, or from cows during the period of 15 days preceding parturition or within such time thereafter as the milk is abnormal, or from cows which have been fed unwholesome food or have had access to contaminated water; or

(g) Milk or cream which falls below the requirements of grade B, as defined herein, or milk or cream which has been produced, stored, handled, or transported in any unclean or insanitary manner; or

(h) Milk or cream the retail, or the final, container of which does not bear a plain and conspicuous statement showing the kind and grade as herein defined; or

(i) Milk or cream in unsterilized containers; or

(j) Milk or cream which such person has kept at a temperature higher than 50 degrees Fahrenheit; or

(k) Grade B milk which has not been pasteurized; or

(l) Homogenized milk or cream, or emulsified milk or cream, unless it is plainly and conspicuously labeled "Homogenized," or "Emulsified," as the case may be; or

(m) Milk which has had the cream line increased by any artificial means.

Sec. 3. That nothing in this ordinance shall be construed to prohibit the sale, when labeled so as to show its true character, of either (a) sour milk or sour cream; or (b) butter milk, or any similar product made from pasteurized milk or cream; or (c) modified milk if made from milk or cream equal at least to grade B.

Sec. 4. That no person shall sell or deliver, or have in his possession with intent to sell or deliver, for consumption as milk or cream, any milk or cream without a permit from the board of health of .....

Sec. 5. That the board of health of ..... is authorized to make such regulations, from time to time, as are necessary for the efficient execution of the provisions of this ordinance, and to issue permits to sell and deliver milk or cream in ..... The board of health, after affording the permittee an opportunity for a hearing, may suspend or revoke any permit issued by it under this ordinance whenever it shall determine that the permittee has violated any of the provisions of this ordinance or of the regulations made hereunder, and, without affording such opportunity, may suspend such a permit temporarily whenever it deems necessary.

Sec. 6. That the board of health of ....., its members, officers, and agents, shall, at all reasonable times, have access to any dairy or any other place where milk or cream is produced for sale; to any wagon, truck, train, car, warehouse, or station in which milk or cream for sale is being transported or is being held for transportation or delivery; and to all establishments, plants, depots, or stores where milk or cream is kept or stored for sale. Any person who hinders or prevents such access shall be guilty of a violation of this ordinance.

Sec. 7. That any producer, handler, or seller of milk, or cream, whether principal, agent, or employee, who, on demand, refuses to sell or deliver a sample, not to exceed one pint, of milk or cream in his possession to any official designated by the board of health to collect samples, shall be guilty of a violation of this ordinance.

Sec. 8. That any person violating any of the provisions of this ordinance shall, on conviction by any court of competent jurisdiction, be punished by a fine of not more than ..... dollars, or by imprisonment of not more than ....., or by both such fine and imprisonment, in the discretion of the court; and for each subsequent offense, and conviction thereof, shall be punished by a fine of not more than ..... dollars, or by imprisonment of not more than ....., or by both such fine and imprisonment, in the discretion of the court.

Bleached Flour

During the year a large number of samples of flour, one hundred twenty-nine in number, were collected by our inspectors and submitted by citizens of the state. The interest shown in flour during the year was especially on the question of bleached flour. Our inspectors collected and submitted one hundred six samples, all of which were tested for artificial bleaching. Forty-nine of the samples were found not to be artificially bleached, while fifty-seven of the samples were bleached with either nitrogen peroxide or chlorine.

In considering the subject of bleached flour, two questions naturally present themselves for consideration. First, is the use of bleached flour deleterious to health? Second, is the practice of bleaching flour susceptible of fraud? The question of the use of an article of food like bleached flour being deleterious to health is by no means a settled question. In considering the effect of the use of bleached flour to health, it should be considered first on the broad basis of what is the effect of adulterated foods in general on public health.

Since the enforcement of the food laws it is well known that many changes have been brought about causing improvement in the food offered for sale as a whole, which changes have been reflected without question in an improvement in the health of the public. Yet there are instances where food legislation has specificially prohibited the introduction of substances into food where the question of its effect on public health was not at all settled but really only a debateable question, and in my opinion, a prohibition by the legislation of Wisconsin of such an article as an ingredient in food is wise legislation. On the theory that there exists considerable doubt as to the effect of the use of bleached flour on the health of the public, the health of the people should be safeguarded at least to the extent of a law requiring the labeling of all bleached flour, and the products offered to the public manufactured therefrom.

That there is ample opportunity for fraud in the practice of bleaching flour is almost self-evident. For years one of the most reliable

characteristic indications of flour quality in flour was its color. Dark gray looking flour was immediately suspected of being milled from either unclean wheat, a poor quality of wheat or it had not been properly manufactured. That is, there had been allowed to remain in the flour too large a percentage of the finely ground branny constituent of the wheat berry. In other words, the public, if shown a dark colored flour, immediately suspected the flour to be low graded which it usually was. If in the bleaching of flour a change of any of the constituents of the flour was brought about by artificial bleaching, resulting in an improvement of the flour other than its appearance, some justification for artificially bleaching flour might be maintained. But inasmuch as the artificial bleaching of flour makes no improvement in the flour whatsoever other than to change its color and is so easily susceptible of being fraudulent, it should be very closely controlled by the state, if not entirely prohibited. From the interest shown in the question of artificially bleached flour during the year it is more than likely that efforts either to repeal or modify the present law of the state prohibiting the sale, for use or consumption of artificially bleached flour in the state, will be made. If it were possible to justly enforce the present law prohibiting the sale of artificially bleached flour for use or consumption in the state I think the present law should be continued. The fact, however, is that due to the many intricacies arising in its enforcement because of the fact that flour is being shipped into Wisconsin in interstate commerce, and the bag or sack of flour being the original unbroken package of commerce exempting its first sale from the provisions of the state law, the present law operates to the disadvantage of the millers of Wisconsin.

Eggs

As an agricultural state Wisconsin has not occupied its proper place in the production and sale of eggs and perhaps poultry. It is estimated that there was produced in Wisconsin during the past two years an egg crop of approximately twenty million dollars a year. By those making the estimate it has also been stated that there occurs undoubtedly a loss of one million dollars due perhaps to the lack of appreciation as to the value of eggs. Wisconsin ranks fifth among the states in the production of eggs. No reasonable explanation of this low rank is obtainable except that of a lack of effort. It is true that the College of Agriculture has a strong and flourishing poultry department directed by thoroughly competent persons, and that for several years past members of this department have from time to time worked in the field with farmers and producers of eggs to encourage a larger production and better quality. No doubt this work has resulted in benefits to the farmers, but it is admitted that much still remains to be done.

The inspectors of the Dairy and Food Department have also taken part in an educational, as well as a law enforcement campaign, con-

cerning the buying and selling of eggs by country merchants. Our food inspectors, working in rural communities, have in the past years literally made thousands of small egg candlers for country merchants, showed many of them how to candle eggs and encouraged them to accept and buy only sound wholesome eggs. If unsound and unwholesome eggs can be kept out of the channels of trade at their initial point of introduction, that is the first sale, much will have been accomplished toward wiping out the traffic in unfit and unwholesome eggs. Every place of business engaged in the buying and selling of eggs should be equipped with an efficient egg candler, and someone employed in that establishment should be thoroughly familiar with the candling of eggs. In connection with the subject of candling of eggs, I wish to call attention at this time to Bulletin No. 563, "How to Candle Eggs," published and distributed by the Bureau of Chemistry, United States Department of Agriculture. This bulletin was prepared in the food research laboratory by Doctors Pennington and Jenkins, and I feel that the information in this bulletin is so important that I am quoting from it the following:

How to Candle Eggs

"Ability to candle eggs is becoming more and more important to farmers, merchants, and shippers in the country districts.

"Laws in many states impose a penalty for selling bad eggs and the Federal Food and Drugs Act prohibits the interstate shipment of cases containing substantial percentages of bad eggs, which are held to be adulterated food. Only by candling can a shipper make certain that his eggs comply with federal, state, and other regulations.

"Aside from its value in enabling one to comply with legal requirements, ability to judge the condition of eggs in the shell has a distinct monetary application and in many sections is simply a matter of economic self-protection for the farmer and the country dealer. The custom of buying eggs on a grading basis is spreading rapidly, and the collectors in the great market centers are becoming much stricter in rejecting inedible eggs, just as consumers are becoming more critical and are refusing to pay for doubtful eggs delivered to them by the retailer. The producer or country shipper who ships uncandled eggs runs the risk, therefore, of losing freight charges and packing costs on all inedible eggs, and where such eggs are included may get a lower grading and a reduced price for the good eggs he has shipped. The shipper who does not candle his eggs has no check on the candling reports of the consignee and must accept loss off, lowered grading, or other price penalties.

"Knowledge of candling and sorting sufficient to sort eggs by the various commercial grades used in the central markets is, of course, a valuable asset to the country collector and shipper. Ability to use the candle at least with accuracy enough to exclude inedible eggs is becoming an accomplishment essential to all who wish to escape legal difficulties and to market their produce on anything like a

profitable basis. The detailed descriptions, diagrams, and colored plates in this bulletin, it is believed, will enable producers, dealers, and housewives to distinguish with sufficient accuracy between edible and inedible eggs. The authors caution those who are first attempting to candle for market to give the benefit of the doubt to the consumer and to retain for home use any eggs which appear at all questionable before the candle.

How to Hold an Egg when Candling

"The room in which the candling is done must be dark. The egg is held by hand in a slanting position with the large end against the opening in the candle. A few moderately rapid twists are given to the right and to the left. During this turning, which should be enough to expose the entire surface of the egg to view, the size of the air cell and the condition of the white and yolk should be noted. After this movement the egg should be turned from end to end so that the whole of the egg is again seen. If the egg is not completely turned before the candle, bad eggs, such as those containing mold spots or yolks stuck to the shell, may not be detected. In other words, one side of an egg may appear good on candling, but the other side may be found to be bad if brought into view.

"It is customary to pick up two eggs in each hand, supporting one egg at a time in the tips of the thumb and the first two fingers. Each egg should be candled separately. After the foremost egg in each hand has been candled, it is dropped back into the palm and the other two eggs are brought forward by a dexterous movement or hand and palm, held before the light, and graded. The ability to shift two eggs in each hand makes for more rapid work and may be acquired by practicing with china eggs. A good deal of experience is required to shift eggs safely and quickly.

"During candling the egg should come in contact with the fingers as little as possible, so that small blemishes such as mold spots will not be hidden from view. It is advisable not to hold more than two eggs in each hand during candling because of the added chance of breaking the eggs and confusing the grades.

"Until the beginner has had some experience it will be advisable for him frequently to check the decision reached by candling with the appearance of the egg when broken into a saucer or other convenient receptacle."

It is not practical in this report to incorporate the subject matter of the entire bulletin, but I have taken simply a few of the subjects dealt with, which surely will be of interest and value to those engaged in the handling of eggs. Further, a very valuable part of this bulletin cannot be reproduced because that part consists of illustrations of types of spoilage in eggs as shown by beautifully prepared colored illustrations. I cannot urge too strongly upon producers, merchants and dealers in eggs the importance of obtaining this bulletin from the Department of Agriculture, Bureau of Chemistry.

SUMMARY ANALYSES

JUNE 30, 1921—JULY 1, 1922.

1429 Samples

	Number of Samples		
BEVERAGES			33
Grape Juice	8		
Tested for Ether Soluble Preservatives. None found	7		
Submitted samples tested for percentage of alcohol	7		
Miscellaneous	11		
DAIRY PRODUCTS			1084
Butter		104	
Standard	50		
Not standard	28		
Submitted	26		
Cheese		305	
Tested for moisture and found to be in compliance with law for moisture	95		
Tested for moisture and found to contain more than the permitted amount of moisture	210		
Cream		151	
Delivered to creameries—standard	13		
Tested for per cent of butter fat to determine overreading or underreading of the Babcock test	34		
From City Milk Supply—standard	8		
From City Milk Supply—not standard	32		
Submitted	64		
Ice Cream		56	
Standard	29		
Not standard	27		
Milk		464	
Delivered at creameries, cheese factories or condenseries—standard	20		
Delivered at creameries, cheese factories or condenseries—not standard	77		
City milk—standard	11		
City milk—not standard	34		
Herd samples	89		
Submitted samples	233		
Miscellaneous dairy products		4	
FLAVORS AND FLAVORING EXTRACTS			2
FLOUR			129
Not bleached	49		
Bleached	57		
Submitted	23		
LINSEED OIL			15
MISCELLANEOUS PRODUCTS			22
SUBMITTED MISCELLANEOUS PRODUCTS			60
SACCHARINE PRODUCTS			29
Maple syrup—submitted samples	14		
Sugar—submitted samples	6		
Honey—submitted samples	9		
VINEGAR			38
ANALYTICAL WORK DONE FOR THE STATE BOARD OF OF CONTROL			17

BEVERAGES

Grape Juice

Date	Bought of	Manufacturer or Jobber	Remarks
1921			
Aug. 3	J. Jahr, Independence	Hammond Produce Co., N. Y. Penn Yan, N. Y.	Not standard.
Aug. 3	Paul Skrock, Independence	The Sweet Valley Products Co., Sandusky, Ohio	Not standard.
Aug. 22	R. W. McKenzie, Dancy	F. Fairbanks & Co., Chicago	Not standard. Preserved with benzoate of soda.
Aug. 22	Dave Heise, Junction City	Sweet Valley Grape Juice Co., Sandusky, Ohio	Tested for chemical preservatives. None found.
Sept. 8	C. E. Emmonds & Son, Stevens Point	Hammondsport Produce Co., New York City, New York	Not standard. Preserved with sulphur dioxide.
Sept. 9	Poulas Bros. & Geo. Drivos, Wisconsin Rapids	Hammondsport Produce Co., New York City, New York	Not standard. Preserved with sulphur dioxide.
Oct. 7	R. Connor Co., Auburndale	Hammonds Port Products Co., N. Y. Penn Yan, New York	Standard. No chemical preservatives found.
Dec. 30	C. H. Teal, Almena	The Duroy and Haines Co., Sandusky, Ohio	Adulterated. Contains sulphuric acid.

BEVERAGES—Tested for Ether Soluble Preservatives—None Found

Date	Kind	Bought of	Manufacturer or Jobber
1921			
Sept. 12	Strawberry	E. Sangster, Platteville	Platteville Bottling Works, Platteville.
Sept. 12	Chocolat-Cremo	Christ Cacrades, Platteville	List Products Corporation, Platteville.
Sept. 12	Grape-O	Christ Cacrades, Platteville	List Products Corporation, Platteville.
Sept. 12	Orange Soda	E. Sangster, Platteville	Platteville Bottling Works, Platteville.
Sept. 13	Lemon Soda	Platteville Bottling Works, Platteville	Platteville Bottling Works, Platteville.
Sept. 13	Lemon Soda	List Products Corporation, Platteville	List Products Corporation, Platteville.
Sept. 13	Root Beer	List Products Corporation, Platteville	List Products Corporation, Platteville.

BEVERAGES—Submitted Samples Tested for Percentage of Alcohol

Date	Brand	Submitted by	Per cent Alcohol by Volume
1921			
July 1	Beer	Otto Breitenbach, Madison	46.0
July 9	Beer	F. C. Rath, Madison	3.10
July 9	Beer	L. W. White, Keshena	2.50
Sept. 20	Beech Nut Ginger Ale	Mr. Messerschmidt, Madison	0.16
Sept. 20	Heibels Lemon Soda	Mr. Messerschmidt, Madison	0.10
Sept. 20	Heibels Root Beer	Mr. Messerschmidt, Madison	0.025
Sept. 20	Coco-Cola	Mr. Messerschmidt, Madison	0.00

Miscellaneous Beverages

Date	Bought for	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1921				
July 11	Cream Soda	T. Thersen, Antigo	T. Thersen, Antigo	No ether soluble residue.
July 13	Pop	T. Thersen, Antigo	T. Thersen, Antigo	No ether soluble residue.
July 14	Lemon Soda	Robert Fett, Eagle River		No ether soluble residue.
July 15	Pop	T. Thersen, Antigo	T. Thersen, Antigo	No ether soluble residue.
July 21	Allouez Orange	*Dr. L. Kahlenberg, Madison	Allouez Mineral Spring Co., Green Bay	Tested for saccharine. None found.
Aug. 1	Fruitti Punch	*Mr. J. H. Pomeroy, Wausau		No saccharine nor benzoic acid present. No net contents stated.
Oct. 11	Rocho-Rye	Gregor Durst, Hewitt	F. H. Linder, Wausau	Adulterated. Contains benzoic acid.
Oct. 11	Ginger Cordial	Gregor Durst, Hewitt	F. H. Linder, Wausau	Not standard. Preserved with benzoate of soda.
1922				
Mar. 9	Duroy's Grape Juice	C. H. Teal, Almena		Adulterated. Contains sulphuric acid.
May 22	Raspberry	*Mr. Robinson, Richland Center		Tested for chemical preservatives. None found.
May 22	Orange	*Mr. Robinson		Tested for chemical preservatives. None found.

*Submitted Samples.

DAIRY PRODUCTS

Butter—Standard

Date	Bought of	Manufacturer or Jobber
1921		
Aug. 23	A. E. Duescher, Lena	Arthur Mallien, Lena.
Aug. 29	Kielsmeier Co., Plymouth	Arthur Wendtland, Plymouth.
Dec. 2	Mott & Wood Co., Cream Station, Mosinee	Mott & Wood Co., Wisconsin Rapids.
Dec. 13	Fred Kohlhoff, Watertown	Fred Kohlhoff, Watertown.
Dec. 30	Spindler Grocery, Superior	Maktown Co-operative Creamery Co., Maktown, Minnesota.
Dec. 20	Fritz and Sanford, Superior	Palisade Creamery Co., Palisade, Minnesota.
Dec. 21	Rhinelander Creamery & Produce Co., Rhinelander	Rhinelander Creamery & Produce Co., Rhinelander.
Dec. 23	Mrs. Ed. McTier, Grand Marsh	E. R. Godfrey & Sons Co., Friendship.
1922		
Jan. 3	John A. Fox, Janesville	F. C. Jennings, Milton.
Jan. 3	Max Altshul, Oconomowoc	Louis Dobbratz Co., Milwaukee.
Jan. 3	Waukegan Tea Co., Watertown	Waukegan Tea Co.
Jan. 18	Theilman Meat & Grocery Co., Merrill	Plautz Creamery Co., Merrill.
Jan. 18	A. & P. Tea Co., Merrill	Scott and Corning Creamery Co., Merrill.
Jan. 18	Theilman Meat and Grocery Co., Merrill	J. A. Newell, Irma.
Jan. 21	Prairie du Chien Cry. Co., Prairie du Chien	Prairie du Chien Creamery Co., Prairie du Chien.
Jan. 23	Hertgen Dairy Co., Oconomowoc	Robert Adams, Oconomowoc.
Jan. 23	Babcock Creamery, Randecker Creamery Co., Stoughton	Randecker Creamery Co., Creamery at Babcock, Stoughton.
Jan. 23	Mott & Wood Co., Wisconsin Rapids	Mott & Wood Co., Wisconsin Rapids.
Jan. 24	Lodi Creamery Co., Lodi	
Jan. 28	W. H. Scott, Kenosha	North Shore Distributing Co., Waukegan, Illinois.
Jan. 28	C. Sweet, Kenosha	Lodi Creamery Co., Lodi.
Jan. 28	C. Sweet, Distributor, Kenosha	J. J. Dorcey, Huron Creamery, Stanley.
Jan. 28	John G. Senken, Racine	Huron Creamery, Stanley.
Feb. 1	Whitehall Creamery Association, Whitehall	Whitehall Creamery Association, Whitehall.
Feb. 3	John Habhegger Co., Watertown	John Habhegger Co., Watertown.
Feb. 3	John Habhegger Co., Watertown	John Habhegger Co., Watertown.
Feb. 10	Arctic Springs Creamery, Galesville	Arctic Springs Creamery Co., Galesville.
Feb. 13	John Weis, Racine	Kielsmeier Co., Plymouth.
Feb. 15	Cash Meat Market, Ladysmith	Keatings, Yankton, South Dakota.
Feb. 15	Thos. Markos & Bros., La Crosse	Hokah Creamery Co., Hokah, Minnesota.
Feb. 18	Neenah Dairy Co., Neenah	
Feb. 21	Medford Co-operative Creamery, Medford	Medford Co-operative Creamery Co., Medford.
Feb. 21	Chelsea Dairy Products, Chelsea	Chelsea Dairy Products Co., Chelsea.
Mar. 4	Peshtigo Dairy Co., Marinette	J. A. McDonald, Peshtigo Dairy Co., Marinette.

Butter—Standard—Continued

Date	Bought of	Manufacturer or Jobber
1920		
Mar. 9	P. J. Strassen, Burlington	S. C. Jensen Creamery Co., Milwaukee.
Mar. 20	Louis C. Ostermann, Delafield	Peter Higgins, Oconomowoc.
Mar. 24	R. W. Humphrey Co., Monroe	Beatrice Creamery Co., Dubuque, Iowa.
Mar. 24	A. G. Kuhn, Pt. Washington	Kielsmeier Co., Manitowoc.
Mar. 27	Fall Creek Creamery Co., Fall Creek	Fall Creek Creamery Co., Fall Creek.
Mar. 30	S. W. Hines Merc. Co., Cumberland	Wm. Mackie, Cumberland.
Mar. 30	Johnson-Echlie Co., Cumberland	Sam Johnson, Cumberland.
April 8	J. J. Gulgat, Waukesha	Midwest Creamery Co., Plymouth.
April 15	North End Store, Two Rivers	Ed. Rhode, Timothy.
April 19	Hager City Creamery Co., Hager City	Hager City Creamery Co., Hager City.
May 18	Apple River & Beaver Creamery, Amery	Apple River & Beaver Creamery Co., Amery.
June 3	Oshkosh Dairy Co., Oshkosh	Oshkosh Dairy Co., Oshkosh.
June 3	Winnebago Dairy Co., Oshkosh	Winnebago Dairy Co., Oshkosh.
June 3	Peter Nottlemann, Oshkosh	Peter Nottlemann, Oshkosh.
June 26	Turtle Lake Co-operative Creamery Co., Turtle Lake	Turtle Lake Co-operative Creamery Co., Turtle Lake.
June 26	Wood River Creamery, Grantsburg	

Butter—Not Standard

Date	Bought of	Manufacturer or Jobber	Per cent moisture	Per cent fat	Per cent salt and curd
1921					
July 26	John F. Fox, Janesville	Rock River Creamery Co., Janesville	16.08	80.12	3.80
Aug. 16	R. C. Kielsmeier, Milwaukee	Mellon Produce Co., Mellon	13.30	82.15	4.55
Aug. 23	Fritz & Sanford, Superior	Moose Lake Creamery Co.	15.53	80.37	4.10
Dec. 1	Rhinelander Creamery & Prod. Co., Rhinelander	Rhinelander Creamery & Prod. Co., Rhinelander	16.21	79.62	4.17
Dec. 16	Fair Store, Wausau	Kielsmeier Co., Wausau	16.97	79.44	3.59
1922					
Jan. 6	Universal Grocery Co., Monroe	Lodi Creamery Co., Lodi	14.53	79.62	5.85
Jan. 17	Viola Creamery, Viola	W. K. Thiede, Viola	15.86	79.85	4.29
Jan. 17	The Fair Store, Wausau	Kielsmeier Co., Wausau	16.86	78.44	4.70
Jan. 18	Five Corner Creamery Co., Cedarburg	Jerome Sherhutt, Cedarburg	19.85	75.94	4.21

Jan. 18	Antigo Sheboygan Dairy Prod. Co.	Antigo Sheboygan Dairy Prod. Co., Antigo	15.68	79.77	4.55
Jan. 19	Fischer Bros., Wisconsin Rapids	Fischer Bros., Wisconsin Rapids	23.41	71.87	4.72
Feb. 2	Ratzlaff Bros., Edgerton	Geo. H. Kothlow, Edgerton	19.22	76.58	4.20
Feb. 15	The Fair Store, Wausau	Kielsmeier Co., Wausau	18.32	77.19	4.49
Feb. 17	Hillsboro Creamery Co., Hillsboro	Hillsboro Creamery Co., Hillsboro	16.18	79.41	4.41
Mar. 2	Wm. Hertgen, Oconomowoc	Wm. Hertgen, Oconomowoc	17.41	77.88	3.60
Mar. 22	Shawano Creamery Co., Shawano	Rhinelander Creamery Co., Rhinelander	17.22	78.23	4.55
Mar. 31	J. J. Gulyas, Waukesha	Kielsmeier Co., Manitowoc	18.17	78.04	3.79
April 3	Sparta Co-op. Creamery Assn., Sparta	Sparta Co-op. Creamery Assn., Sparta	16.33	79.10	4.57
April 28	Sheboygan Dairy Prod. Co., Sheboygan	Sheboygan Dairy Prod. Co., Sheboygan	18.25	79.20	2.55
April 28	Sheboygan Falls Creamery Co., Sheboygan	Sheboygan Falls Creamery Co., Sheboygan Falls	16.82	79.45	3.73
May 3	F. Pantke Grocery Store, Winneconne	Omro Co-op. Creamery & Cheese Co., Omro	16.51	77.77	5.72
May 9	Zala Baldwin, Madison	Springfield Corners Creamery, Waunakee	16.06	79.53	4.41
May 9	Zala Baldwin, Madison	Springfield Corners Creamery, Waunakee	15.60	79.45	4.95
May 9	Zala Baldwin, Madison	Springfield Corners Creamery, Waunakee	15.27	79.44	5.29
May 9	Zala Baldwin, Madison	Springfield Corners Creamery, Waunakee	15.53	79.48	4.99
May 17	L. J. Berher, Sheboygan Falls	Midwest Creamery Co., Plymouth	17.29	79.87	2.84
May 31	Carvers Ice Cream Co., Oshkosh	Carvers Ice Cream Co., Oshkosh	17.46	78.59	3.95
June 19	Ripon Produce Co., Ripon	Ripon Produce Co., Ripon	21.71	72.75	5.54

Butter—Submitted Samples

Date	Submitted by	Remarks
1921		
July 8	Mrs. C. F. Lamb, Madison	Free from adulteration.
Aug. 1	C. Sweet, Kenosha	Tested for foreign fat. None found.
Aug. 17	Ernest Laaser, Cornell	No foreign fat present.
Oct. 14	F. Meisner, Boyceville	No foreign fat found.
Oct. 18	W. P. Hyland, Ashland	Standard. Free from adulteration with any foreign fat.
Nov. 2	Ashland Dairy Products Co., Ashland	Not standard. Low in fat.
Nov. 9	Fountain City Dairy Co., Fond du Lac	Found to be pure butter fat. Contained little or no moisture. Contained only slight amount of curd. Seems to be sample of butter fat.
Nov. 9	Fountain City Dairy Co , Fond du Lac	Standard.
Dec. 23	John Becker & Sons, Green Bay	No foreign fat found.
Dec. 23	Ed. Barclay, La Farge	Tested for foreign fat. None found.
1922		
Jan. 24	H. W. Selden, Pittsville	Free from adulteration with any foreign fat.
Feb. 7	Farmers Co-operative Creamery Association, Superior	Standard.
Feb. 17	R. M. Hadley, Kaukauna	Tested for foreign fat. None found.

Butter—Submitted Samples—Continued

Date	Submitted by	Remarks
1922		
Feb. 27	Armour & Company, Bloomer	Standard.
Mar. 17	Beck & Schwartz, Lancaster	Standard.
April 29	Herbert Bassuener, Sheboygan Falls	Not standard.
May 2	F. H. Whiting, Waunakee	Adulterated. Below standard in fat.
May 2	F. H. Whiting, Waunakee	Adulterated. Below standard in fat.
May 2	F. H. Whiting, Waunakee	Adulterated. Below standard in fat.
May 2	F. H. Whiting, Waunakee	Adulterated. Below standard in fat.
May 29	Briggsville Co-operative Creamery Co., Briggsville	Standard.
May 31	Juza Bros., Haugen	Tested for foreign fat. None found.
May 31	Sarona Creamery Co., Sarona	Tested for foreign fat. None found.
June 5	Springfield Corners Creamery Co., Waunakee	Standard.
June 17	C. E. Hopkins, Sheldon	Free from adulteration with any foreign fat.
June 20	H. C. Larson, Madison	Free from adulteration with any foreign fat.

Cheese—Found to contain in cheese known as American or Cheddar cheese not more than 38 per cent moisture and in cheese known as Brick cheese not more than 42 per cent moisture.

Date	Bought of or Collected at	Manufacturer or Jobber
1921		
Sept. 13	J. Kirkpatrick, Lone Rock	J. L. Keegan, Sandusky, Ohio.
Sept. 13	J. Kirkpatrick, Lone Rock	J. L. Keegan, Sandusky, Ohio.
Sept. 20	John Beymers, Vesper	John Beymers, Vesper.
Sept. 28	C. A. Straubel, Green Bay	Adolph Bittolph, New London.
Oct. 8	C. A. Carlson, Cameron	Jacob Rolhenbuehler, Prairie Farm.
Oct. 18	Herman Schukot Cheese Factory, West Bend	Hugo Reis, West Bend.
Oct. 25	West Salem Canning Co., West Salem	West Salem Canning Co., West Salem.
Nov. 7	Birnamwood Cheese Co., Birnamwood	Victor Malueg, Tigerton.
Nov. 15	Dow Cheese Co., Merrill	Herman Golz, Merrill.
Nov. 15	Dow Cheese Co., Merrill	W. A. Zamzow, Hamburg.
Nov. 17	County Corners Co-op. Cheese Co., Clear Lake	County Corners Co-op. Cheese Co., Clear Lake.
Nov. 18	C. E. Blodgett C. B. & Egg Co., Marshfield	Millcreek Cheese & Butter Co., Stevens Point.

Nov. 20	Dow Cheese Co., Fond du Lac	Jack Otto, Malone.
Dec. 2	Kraft Bros. Storage, Marshfield	Clover Hill Dairy Co., Stratford.
Dec. 7	Pauly & Pauly Cheese Co., Seymour	Mr. Wire, Seymour.
Dec. 7	A. Grossenbach Co., Milwaukee	Fred Buss, Little Black.
Dec. 9	Wisconsin Cheese Producer's Fed., Spring Green	Walter Zbinden, Neillsville.
Dec. 14	C. E. Blodgett C. B. & Egg Co., Marshfield	Loehr Bros., Calvary.
Dec. 15	Dow Cheese Co., Plymouth	Louis Ruegger, Arpin.
Dec. 15	Dairy Belt Cheese Co., Spencer	Star Prairie Cheese Co., New Richmond.
Dec. 20	Star Prairie Cheese Co., New Richmond	Popal Grove Cheese Co., New Richmond.
Dec. 20	Popal Grove Cheese Co., New Richmond	Spring Brook Dairy Co., Merrill.
Dec. 21	N. Simon Cheese Co., Merrill	Dew Run Co-op. Dairy Co., Merrill
Dec. 22	N. Simon Cheese Co., Merrill	
1922		
Jan. 17	Birnamwood Cheese Co., Birnamwood	R. J. Vogt, Birnamwood.
Jan. 17	Birnamwood Cheese Co., Birnamwood	David Korth, Antigo.
Jan. 17	Kirkpatrick's Cheese Warehouse, Viola	Maple Grove Cheese Factory, Viola.
Jan. 17	Kirkpatrick's Cheese Warehouse, Viola	Ross Cheese Factory, Viola.
Jan. 17	Kirkpatrick's Cheese Warehouse, Viola	Sylvan Creamery Co., Sylvan.
Jan. 19	C. A. Straubel Cheese Co., Antigo	J. A. Bartelt, Aniwa.
Jan. 19	C. A. Straubel Cheese Co., Antigo	J. A. Bartelt, Aniwa.
Jan. 19	C. E. Blodgett Cheese Warehouse, Wisconsin Rapids	Farmers Co-op. Society of Pittsville.
Jan. 19	C. E. Blodgett Cheese Warehouse, Wisconsin Rapids	Mott & Wood Co., Wisconsin Rapids.
Jan. 20	C. E. Blodgett C. B. & Egg Co., Marshfield	Maple Grove Dairy Co., Sherry.
Jan. 30	C. A. Straubel Cheese Co., Green Bay	John Greatz, Pound.
Jan. 30	C. A. Straubel Cheese Co., Green Bay	John Levark, Little Suamico.
Feb. 3	Lutze Cheese Co., Cleveland	Alfred Ounik, Cleveland.
Feb. 9	C. A. Straubel Cheese Co., Warehouse, Green Bay	River Side Cheese Factory, Coleman.
Feb. 9	C. A. Straubel Cheese Co., Warehouse, Green Bay	R. J. Patton, Weyauwega.
Feb. 11	C. E. Blodgett C. B. & Egg Co., Marshfield	Hickman Bros., Marshfield.
Feb. 11	C. E. Blodgett C. B. & Egg Co., Marshfield	Rock Cheese & Butter Co., Auburndale.
Feb. 11	C. E. Blodgett C. B. & Egg Co., Marshfield	Fred Ogi, Junction City.
Feb. 18	Kraft Bros. Cheese Co., Marshfield	Ripon Produce Co., Marshfield.
Feb. 23	B. D. Alton, Pewaukee	John Hoffman & Son Co., Milwaukee.
Feb. 23	C. E. Blodgett C. B. & Egg Co., Marshfield	Loyal Co-op. Dairy Co., Loyal.
Mar. 3	A. Deland Cheese Co., Bear Creek	Henry Collard, Sugar Bush.
Mar. 4	Peshtigo Dairy Co., Marinette	Peshtigo Dairy Co., Marinette.
Mar. 7	Pauly & Pauly Cheese Co., Warehouse, Sturgeon Bay	Silver Creek Dairy Co., Brussels.
Mar. 7	Pauly & Pauly Cheese Co., Warehouse, Sturgeon Bay	Gust Klinke, Ellison Bay.
Mar. 8	Pauly & Pauly Cheese Co., Warehouse, Sturgeon Bay	West Jacksonport Dairy Co., Jacksonport.
Mar. 8	Pauly & Pauly Cheese Co., Warehouse, Sturgeon Bay	Sugar Creek Dairy Co., Brussels.
Mar. 9	Wisconsin Cheese Producers' Fed., Wausau	R. J. O'Keefe, Ringle.
Mar. 14	Fred W. Buss, Little Black	Fred W. Buss, Little Black.
Mar. 15	Peacock Cheese Co., Cobb	Aug. Ipsen, Cobb.
Mar. 16	Tea Garden Cheese Co., Menomonie	Tea Garden Cheese Co., Menomonie.
Mar. 17	C. A. Straubel Co., Shawano	Carl Peters, Shawano.

Cheese—Standard—Continued

Date	Bought of or Collected at	Manufacturer or Jobber
1922		
Mar. 17	Pauly & Pauly Cheese Co., Edgar	Marathon Co-op. Farmers Creamery Co., Athens.
Mar. 17	New Richmond Cheese & Dairy Co., New Richmond	New Richmond Cheese & Dairy Co., New Richmond.
Mar. 17	Wright & Kampine Cheese Co., Warehouse, Marinette	Dagget Farmers Co-op. Cheese & Creamery Co., Dagget.
Mar. 17	Wright & Kampine Cheese Co., Warehouse, Marinette	Ellen Grover Factory, Peshtigo.
Mar. 17	Wisconsin Cheese Producers' Fed., Spring Green	Wm. Torphy, Ridgeway.
Mar. 18	John Kirkpatrick, Richland Center	Henry Olson, Richland Center.
Mar. 20	Cheese Warehouse of Algoma Prod. Co., Algoma	Algoma Creamery, Algoma.
Mar. 21	C. A. Straubel Co., Cheese Warehouse, Lena	Lena Cheese Factory, Lena.
Mar. 22	Hartford Cheese & Butter Association, Hartford	John Disler, Hartford.
Mar. 22	A. H. Barber Cheese Co., Dodgeville	Fred Schroeder, Ridgeway.
Mar. 22	C. A. Carlson Co., Cameron	Ernest Gross, Rice Lake.
Mar. 25	C. E. Blodgett C. B. & Egg Co., Marshfield	Fred Ogi, Junction City.
Mar. 25	C. E. Blodgett C. B. & Egg Co., Marshfield	Maple Grove Dairy Co., Milladore.
Mar. 25	Plymouth Merc. Co., Plymouth	Kraft Cheese Co., Plymouth.
Mar. 27	Wisconsin Cheese Prod. Federation, Wausau	Spring Brook Co-op. Dairy Co., Merrill.
Mar. 27	C. A. Straubel Co., Cheese Warehouse, Green Bay	H. E. Jahnki, Oconto Falls.
Mar. 31	A. H. Barber Cheese Co., Dodgeville	Paul Schroeder, Dodgeville.
April 3	John Kurith, Milwaukee	Louis Dobbrats Co., Milwaukee.
April 3	Louis Dobbratts, Milwaukee	Winkler Bros., Platt.
April 3	A. Grossenbach, Milwaukee	T. F. Buss, Colby.
April 4	Car in Curtiss	Otto E. Peterson, Curtiss.
April 6	Birnamwood Cheese Co., Birnamwood	
April 18	Pauly & Pauly Cheese Co., Warehouse, Sturgeon Bay	Fairland Dairy Co., Brussels.
April 20	C. E. Blodgett C. B. & Egg Co., Athens	Walter Schmidt, Hamburg.
April 21	Glandt, Kuffan & Priebe Co., Warehouse, Kewaunee	A. H. Krause, Kewaunee.
April 21	Glandt, Kuffan & Priebe Co., Warehouse, Kewaunee	A. H. Krause, Kewaunee.
April 21	C. A. Straubel Co., Cheese Warehouse, Green Bay	Brown County Milk Exchange, Green Bay.
April 21	C. A. Straubel Co., Cheese Warehouse, Green Bay	Brown County Milk Exchange, Green Bay.
April 25	Peacock Cheese Co., Cobb	Theo Undesser, Montfort.
May 1	S. J. Stevens Co., Campbellsport	Kewaskum Creamery Co., Kewaskum.
May 2	Algoma Produce Warehouse, Algoma	A. P. Stengel, Algoma.
May 2	Algoma Produce Co., Warehouse, Algoma	Ahnapee Cheese Co., Algoma.
May 17	Gerritt J. Ten Dollen, Oostburg	Gerritt J. Ten Dollen, Oostburg.
May 19	Wisconsin Cheese Producer's Fed., Spring Green	Torge Goderstad, Black Earth.
May 25	Pauly & Pauly Warehouse, Merrillan	Brookside Cheese Co., Alma Center.
June 16	C. A. Straubel Cheese Warehouse, Lena	Edwin Krause, Lena.
June 16	C. A. Straubel Cheese Warehouse, Lena	Edwin Krause, Lena.
June 16	C. A. Straubel Cheese Warehouse, Lena	Meadow Brook Cheese Factory, Lena.
June 16	C. A. Straubel Cheese Warehouse, Lena	Elm Ridge Cheese Factory, Lena.

Cheese—Found to contain in cheese known as American or Cheddar cheese more than 38 per cent moisture and in cheese known as Brick cheese more than 42 per cent moisture.

Date	Kind	Bought of or Collected at	Manufacturer or Jobber	Per cent moisture
1921				
Aug. 22	American	Mike Possley, Fredonia	Mike Possley, Fredonia	39.88
Sept. 26	American	Fred Pollnow, Neillsville	Fred Pollnow, Neillsville	40.42
Oct. 3	American	John Hobhagger Co., Watertown	Henry Ruegg, Watertown	41.72
Oct. 4	American	Pauly & Pauly, Green Bay	W. O. Stanton, De Pere	41.37
Oct. 10	American	Fredonia Clover Valley Cheese Co., Fredonia	Dan H. Wittlinger, Fredonia	39.82
Oct. 10	American	A. H. Bley, Belgium	A. H. Bley, Belgium	42.04
Oct. 18	Brick	Otto Wollner Co., Hartford	Carl Cuberbuhler, Iron Ridge	43.69
Oct. 19	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Wm. Lucht, Spencer	42.05
Oct. 19	American	C. E. Blodgett C. B. & Egg Co., Marshfield	John Froehlich, Marshfield	39.86
Oct. 19	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Elmer W. Gorges, Neillsville	40.30
Oct. 19	American	Winnebago Cheese Co., Fond du Lac	Albert M. Kohlmann, Fond du Lac	42.32
Oct. 19	American	Dow Cheese Co., Fond du Lac	Lawrence Eggers, Rosendale	41.20
Oct. 28	American	Winnebago Cheese Co., Fond du Lac	Earnest Kaufmann, Fond du Lac	40.24
Oct. 29	American	Jacquot Cheese Co., Appleton	Ed. Meichels, Brillion	39.42
Oct. 29	American	Jacquot Cheese Co., Appleton	A. E. Law, Brillion	39.27
Oct. 29	American	Jacquott Cheese Co., Appleton	J.W. Trojan, West Bloomfield	40.28
Oct. 31	Brick	North Star Cheese Factory, Oconomowoc	Gustave Carlsone, Oconomowoc	45.04
Nov. 2	American	Dairy Belt Cheese Co., Spencer	E. J. Adams, Vesper	40.31
Nov. 2	American	C. E. Blodgett C. B. & Egg Co., Marshfield	East Arpin Dairy Association, Arpin	38.96
Nov. 2	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Joe Schefuect, Dorchester	40.50
Nov. 2	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Leonard Heibel, Withee	39.88
Nov. 2	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Campia C. & B. Co., Rice Lake	43.82
Nov. 2	American	Polly & Polly Cheese Co., Edgar	Poplar Grove Cheese Co., Edgar	38.85
Nov. 14	American	Alfred Antonie, Belgium	Alfred Antonie, Belgium	44.19
Nov. 14	American	A. H. Bley, Belgium	A. H. Bley, Belgium	43.55
Nov. 14	American	A. H. Bley, Belgium	A. H. Bley, Belgium	43.60
Nov. 15	American	C. E. Blodgett C. B. & Egg Co., Greenwood	Wm. Laabs, Greenwood	39.75
Nov. 16	American	Birnamwood Cheese Co., Birnamwood	N. J. Mechelke, Birnamwood	39.15
Nov. 22	American	J. S. Steven Co., Campbellsport	Edgar Becker, Campbellsport	42.59
Nov. 22	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Rudolph Stock, Colby	41.73
Nov. 22	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Leonard Hiebel, Withee	39.81
Nov. 28	American	Arland Cheese Factory, Clayton	A. R. Shornshoh	39.79
Nov. 28	American	Maple Ridge Co-op. Cheese Co., Comstock	Maple Ridge Co-op. Cheese Co., Comstock	39.80
Nov. 28	American	Beslerton Cheese Co., Cumberland	Beslerton Cheese Co., Cumberland	38.54
Nov. 25	American	Jacquot Cheese Co., Appleton	R. O. Freund, Hilbert	40.73
Nov. 25	American	Jacquot Cheese Co., Appleton	David Struense, Allenville	39.27
Nov. 25	American	Dow Cheese Co., Plymouth	D. L. Donovan, Random Lake	42.90

Cheese—Not Standard—Continued

Date	Kind	Bought of or Collected at	Manufacturer or Jobber	Per cent moisture
1921				
Nov. 25	American	H. B. Stanz, Milwaukee	Alfred Antonie, Belgium	43.93
Nov. 29	American	Colby Cheese Co., Colby	Clarence Olson, Colby	42.18
Nov. 29	American	H. B. Stanz Co., Milwaukee	John Tesmer, Colby	40.28
Nov. 29	American	A. Grossenbach Co., Milwaukee	Louis Schorer, Curtiss	41.72
Nov. 29	American	Colby Cheese Co., Colby	Albert Bahn, Colby	39.91
Dec. 2	American	Jacquot Cheese Co., Wausau	E. Emmerich, Mosinee	41.67
Dec. 2	American	Dow Cheese Co., Merrill	Chas. W. Miller, Merrill	38.85
Dec. 2	American	Jacquot Cheese Co., Wausau	R. J. O'Keefe, Ringle	38.56
Dec. 2	American	N. Simon Cheese Co., Merrill	Ed. Schielke, Merrill	40.70
Dec. 5	Brick	Kraft Cheese Co., Watertown	John Van Buskirk, Oconomowoc	45.37
Dec. 5	Brick	Fleischman Cheese Factory, Templeton	George Fleischman, Templeton	44.41
Dec. 8	American	C. E. Blodgett C. B. & Egg Co., Marshfield	F. W. Laabs, Curtiss	39.77
Dec. 8	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Woodland Dairy Co., Unity	41.42
Dec. 8	Brick	C. E. Blodgett C. B. & Egg Co., Marshfield	Hunke Bros., Greenwood	45.47
Dec. 10	American	Jacquot Cheese Co., Appleton	Burnard Draeger, Hortonville	39.22
Dec. 10	American	Jacquot Cheese Co., Appleton	David Struensee, Allenville	39.93
Dec. 10	American	Pauly & Pauly Cheese Co., Seymour	Joe Lubinski, Seymour	39.18
Dec. 10	American	H. B. Stanz, Milwaukee	John Tesmer, Little Black	40.99
Dec. 12	American	H. J. Noyes & Son, Muscoda	John Daugherty, Avoca	42.54
Dec. 12	American	H. J. Noyes & Son, Muscoda	E. E. Gerlack, Prairie du Chien	41.14
Dec. 14	American	Hamlyn Dairy, West Bend	Oscar Garlack, West Bend	43.01
Dec. 16	American	S. J. Stevens Co., Campbellsport	Adolph Heberer, Kewaskum	38.51
Dec. 16	American	Dow Cheese Co., Fond du Lac	Oswald Reitz, Fond du Lac	40.17
Dec. 16	American	Winnebago Cheese Co., Fond du Lac	H. J. Kohlmann, Calvary	42.42
Dec. 17	American	A. D. DeLand Cheese Co., Sheboygan	John Gosse, Sheboygan	41.54
Dec. 17	American	Peacock Cheese Co., Sheboygan	Aug. Dedow, Sheboygan	40.18
Dec. 17	American	Dow Cheese Co., Plymouth	D. L. Donovan, Random Lake	39.56
Dec. 17	American	Dow Cheese Co., Plymouth	Ernest Tracy, Plymouth	41.60
Dec. 17	American	A. H. Barber, Plymouth	E. H. Fischer, Random Lake	39.48
Dec. 17	American	A. H. Barber Co., Plymouth	W. A. Scott, Waldo	39.94
Dec. 17	American	S. H. Conover, Plymouth	A. J. Reiss, Cascade	39.39
Dec. 21	American	Dow Cheese Co., Plymouth	Richard Berket, Oostburg	40.08
Dec. 21	American	Dow Cheese Co., Plymouth	Chas. Humphry, Random Lake	40.32
Dec. 21	American	Davis Cheese Co., Plymouth	James Lord, Oostburg	40.45
Dec. 21	American	Wisconsin Cheese Producers Federation, Plymouth	Walter Seefeldt, Plymouth	40.97
Dec. 21	American	Planke Cheese Co., Plymouth	G. G. Kreuger, New Holstein	41.15
Dec. 21	American	Davis Cheese Co., Plymouth	Otto Fick, Campbellsport	41.67
Dec. 21	American	C. E. Blodgett C. B. & Egg Co., Marshfield	John Boehlein, Auburndale	40.06

Dec.	23	American	Jacquot Cheese Co., Appleton	August Larson, Nichols	40.55
Dec.	23	Brick	Arn & Zweifel Cold Storage, Monticello		51.88
Dec.	28	American	Teagarden Cheese Co., Menomonie	Teagarden Cheese Co., New Richmond	38.56
Dec.	28	American	A. H. Barber & Co., Dodgeville	Theodore Otter, Avoca	42.70
Dec.	28	American	A. H. Barber & Co., Dodgeville	Fred Schroeder, Ridgeway	39.23
Dec.	28	American	Banner Cheese Co., New Richmond	Banner Cheese Co., New Richmond	39.29
Dec.	28	American	New Richmond Cheese & Warehouse Co., New Richmond	New Richmond Cheese & Warehouse Co., New Richmond	39.63
Dec.	28	American	Erin Cheese Co., New Richmond	Erin Cheese Co., New Richmond	40.11
1922					
Jan.	3	American	Blanke Cheese Co., Plymouth	John Scannell, Plymouth	39.09
Jan.	3	American	Dow Cheese Co., Plymouth	Richard Berkett, Oostburg	39.57
Jan.	3	American	Dow Cheese Co., Plymouth	D. L. Donovan, Random Lake	39.66
Jan.	5	American	C. E. Blodgett C. B. & Egg Co., Greenwood	Edwin Meyer, Owen	39.67
Jan.	5	American	C. E. Blodgett C. B. & Egg Co., Greenwood	Emil Luther, Greenwood	39.03
Jan.	5	American	C. E. Blodgett C. B. & Egg Co., Marshfield	North Arpin Cheese & Butter Co., Arpin	43.85
Jan.	5	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Joe Fischer, Stratford	38.77
Jan.	5	American	Conover Cheese Co., Plymouth	A. J. Reiss, Cascade	42.79
Jan.	5	American	B. Schreiber Cheese Co., Sheboygan	E. C. Woepse, Belgium	41.65
Jan.	5	American	Blanke Cheese Co., Plymouth	Ervin Hinnemann, Campbellsport	40.95
Jan.	5	American	Birnamwood Cheese Co., Birnamwood	E. J. Mechelke, Birnamwood	38.78
Jan.	17	American	C. A. Straubel Cheese Co., Antigo	A. F. Schulz Cry. Co., Phlox	39.26
Jan.	18	American	C. A. Straubel Cheese Co., Antigo	James W. Matek, Deer Brook	39.49
Jan.	18	American	C. A. Straubel Cheese Co., Antigo	Dieck & Draheim, Mattoon	38.83
Jan.	19	American	A freight car in freight yards of C. & N. W., Antigo	W. L. Plzak, Bryant	39.09
Jan.	19	American	C. A. Straubel Cheese Co., Antigo	Fernwood Dairy & Produce Co., Antigo	38.61
Jan.	19	American	C. A. Carlson Co., Cameron	Pleasant View Cheese Co., Rice Lake	39.51
Jan.	20	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Aug. Busse, Arpin	38.56
Jan.	20	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Fred Bennett, Stratford	39.28
Jan.	20	American	Jackson Dairy Co., Jackson	Ed. Zohn, Jackson	39.71
Jan.	23	American	Jackson Dairy Co., Jackson	Herman Dodge, West Bend	38.81
Jan.	23	American	E. S. Jacobsen, Almena	Peter Thil, Clayton	43.35
Jan.	24	Brick	C. E. Blodgett Co., Osceola	Osceola Cheese Co., Osceola	39.61
Jan.	24	American	C. A. Straubel Cheese Co., Green Bay	F. E. Schwartz, Sobieski	38.72
Jan.	30	American	H. B. Stanz, Milwaukee	Peter Pauly, Saukville	44.07
Jan.	30	American	Milwaukee Cheese Co., Milwaukee	John Fleischmann, Templeton	44.09
Jan.	30	Brick	A. H. Barber Co., Dodgeville	Theodore Otter, Avoca	41.35
Jan.	31	American	Silver Lake Cheese Co., Cumberland	Silver Lake Cheese Co., Cumberland	40.82
Feb.	6	American	Fairmont Creamery Co., Green Bay	Joe Woshniak, Pulaski	40.03
Feb.	8	American	Fairmont Creamery Co., Green Bay	Joe Woshniak, Pulaski	40.77
Feb.	8	American	Fairmont Creamery Co., Green Bay	Laurence Schommer, Kaukauna	42.33
Feb.	8	American	Kraft Bros. Cheese Co., Marshfield	C. E. Blodgett C. B. & Egg Co., Marshfield	38.85
Feb.	18	American	Jacquot Cheese Co., Wausau	Geo. Fischer, Marathon	40.98
Feb.	18	American	Jacquot Cheese Co., Wausau	Geo. Fischer, Marathon	41.28
Feb.	18	American	Fairmont Creamery Co., Green Bay	O. P. Safford, Oconto	38.71
Feb.	20	American	Peacock Cheese Co., Platteville	Louis Rudersdorf, Platteville	40.86
Feb.	23	American			

Cheese—Not Standard—Continued

Date	Kind	Bought of or Collected at	Manufacturer or Jobber	Per cent moisture
1922				
Feb. 23	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Harry Ostrich, Loyal	39.08
Feb. 23	American	C. E. Blodgett C. B. & Egg Co., Marshfield	The Standard Cheese Co., Stanley	40.88
Mar. 1	American	Wright & Kampine Ch. Warehouse, Marinette	Clover Leaf Co-op. Ch. Co., Dagget, Mich.	39.29
Mar. 4	American	Birnamwood Cheese Co., Birnamwood	Otto Umland, Antigo	40.70
Mar. 4	American	Birnamwood Cheese Co., Birnamwood	F. W. Umland, Birnamwood	39.16
Mar. 6	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Conrad Jakobi, Dorchester	40.71
Mar. 6	American	C. E. Blodgett C. B. & Egg C., Marshfield	Walter Volk, Marshfield	40.35
Mar. 7	American	Clover Valley Cheese Factory, Fredonia	Dan. H. Wittlinger, Fredonia	38.82
Mar. 7	Brick	Gimbel Bros., Milwaukee		44.07
Mar. 8	American	Secher Cheese Factory, Fredonia	Wm. P. Secher, Fredonia	39.40
Mar. 9	American	In car at Dorchester	Otto Braun, Dorchester	38.57
Mar. 9	American	Peacock Cheese Co., Platteville	Dave Baker, Platteville	39.11
Mar. 13	American	C. A. Straubel Ch. Warehouse, Green Bay	Chilton Creamery Co., Elkhart Lake	39.71
Mar. 13	American	C. A. Straubel Co., Warehouse, Green Bay	Chilton Creamery Co., Elkhart Lake	41.03
Mar. 15	American	Peacock Cheese Co., Cobb	Aug. Ipsen, Cobb	40.29
Mar. 16	American	Hubbleton Depot from car	Hubbleton Co-op. Cry., Hubbleton	44.55
Mar. 16	American	Hubbleton Depot from car	Cold Spring Cheese Factory, Reeseville	40.22
Mar. 16	American	Hubbleton Depot from car	Granite Hill Creamery Co.	40.09
Mar. 16	American	A. H. Barber Cheese Co., Dodgeville	Paul Schroeder, Dodgeville	41.85
Mar. 20	American	Ast Bros. Cheese Co., Dodgeville	Theo. Darling, Jonesdale	39.87
Mar. 22	Brick	Algoma Produce Co., Algoma	Geo. J. Steinhart, Algoma Creamery Co., Algoma	39.68
Mar. 22	Brick	John Rubner, Hartford	John Rubner, Hartford	42.77
Mar. 22	Brick	Huilsburg Cheese Factory, Rubicon	Fred Schelberger, Rubicon	43.53
Mar. 23	American	The Grove Cheese Factory, Hartford	Ernst Stucke, Hartford	43.42
Mar. 23	American	C. A. Straubel Co., Shawano	Theodore Mech, Shawano	38.78
Mar. 25	American	C. A. Straubel Co., Shawano	Carl Peters, Shawano	39.19
Mar. 25	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Fred Laabs, Curtiss	39.85
Mar. 27	American	C. E. Blodgett C. B. & Egg Co., Marshfield	Richard Gotter, Spencer	40.04
Mar. 27	American	Frank Schilling Co., Green Bay	J. L. Kraft & Bros., Chicago	42.02
Mar. 29	American	Frank Schilling Co., Green Bay	J. L. Kraft & Bros. Co. Chicago	42.08
Mar. 29	American	At car in Colby	Rudolph Stock, Colby	40.05
Mar. 30	American	At car in Colby	A. W. Buss, Colby	40.65
Mar. 30	American	Longwood Cheese Factory, Withee	E. A. Laabs, Withee	39.66
Mar. 31	Brick	Longwood Cheese Factory, Withee	E. A. Laabs, Withee	40.76
April 1	American	New York Market Co., Waukesha		44.41
April 1	American	John Kirkpatrick, Lone Rock	Arthur Dederick, Lone Rock	40.17
April 3	American	John Kirkpatrick, Lone Rock	Arthur Dederick, Lone Rock	39.48
		South Green Grove Co-op. Dairy Association, Owen	South Green Grove Dairy Association, Owen	42.15

April	3	American	South Green Grove Co-op. Dairy Association, Owen	South Green Grove Co-op. Association, Owen	40.97
April	3	American	A. Grossenback, Milwaukee	Harry Rhymer, Medford	42.46
April	3	Brick	A. Grossenback, Milwaukee	A. F. Guelzaw, Portage	45.55
April	3	American	John Kurith, Milwaukee	H. B. Stanz Co., Milwaukee	39.70
April	4	American	Antone & Bley, Belgium	Alfred Antone, Belgium	40.31
April	4	American	Antone & Bley, Belgium	A. H. Bley, Belgium	42.49
April	4	American	At car in Curtiss	Geo. Hamm, Curtiss	43.80
April	4	American	At car in Curtiss	Gust C. Sampe, Curtiss	41.09
April	4	American	At depot in Curtiss	Louis Schorer, Curtiss	40.16
April	5	Brick	H. B. Stanz Co., Milwaukee	Arn & Zweifel Co., Monticello	46.06
April	5	Brick	H. B. Stanz Co., Milwaukee	Arn & Zewifel Co., Monticello	45.17
April	5	Brick	H. B. Stanz Co., Milwaukee	Arn & Zweifel Co., Monticello	45.00
April	5	American	Peacock Cheese Co., Cobb	Aug. Ipsen, Cobb	40.47
April	5	American	Peacock Cheese Co., Cobb	F. H. Rohde, Lancaster	42.62
April	6	American	Random Lake Depot, Random Lake	John Wetor, Random Lake	39.06
April	6	American	Fairmont Creamery Co., Green Bay	Lawrence Schommer, Kaukauna	42.49
April	6	Brick	H. B. Stanz, Milwaukee	H. Reis, Slinger	43.88
April	7	Brick	New York Market Co., Waukesha	Swift & Co., Chicago	46.76
April	7	American	Kraft Bros. Cheese Co., Mineral Point	Thos. Cornish, Highland	38.93
April	8	American	Louis Trazer, Richland Center	J. L. Kraft & Bros. Co., Chicago	44.05
April	10	American	Nelson Bros., Oconomowoc	J. L. Kraft & Bros. Co., Chicago	43.62
April	10	American	Kraft Bros. Cheese Co., Wausau		44.89
April	11	American	N. W. Depot, Juneau	Ernst Looser, Juneau	39.52
April	12	American	A. H. Barber Cheese Co. Dodgeville	Theo. Otter, Avoca	39.77
April	12	American	Schreiber Cheese Co., Newton	Wm. Funkel, Timothy	41.02
April	13	American	Capital Dairy Co.. Madison	Capital Dairy Co., Madison	43.53
April	13	American	Max P. Radloff, Hustisford	Leonard Langley, Fox Lake	42.74
April	13	American	Max P. Radloff, Hustisford	Arnold Feller, Hustisford	41.03
April	18	American	Pauly & Pauly Cheese Co., Sturgeon Bay	W. E. Poppendorf, Sister Bay	40.03
April	18	American	Pauly & Pauly Cheese Co., Sturgeon Bay	W. E. Poppendorf, Sister Bay	40.83
April	18	American	Pauly & Pauly Cheese Co., Sturgeon Bay	Fairland Dairy Co., Brussels	39.69
April	20	American	Frank & Co., Milwaukee	Frank Schroeder Co., Milwaukee	39.16
April	20	American	C. E. Blodgett C. B. & Egg Co., Marshfield	South Green Grove Dairy Association, Owen	42.31
April	20	American	C. E. Blodgett C. B. & Egg Co., Marshfield	South Green Grove Dairy Association, Owen	43.03
April	20	American	C. E. Blodgett C. B. & Egg Co., Athens	Carl Wilcox, Corinth	38.93
April	21	Colby	Hubbleton	Otto Moldenhauer, Hubbleton	44.96
April	21	Colby	Hubbleton	Otto Moldenhauer, Hubbleton	42.81
April	21	American	Frank Schroeder Co., Milwaukee	Kraft Bros. Cheese Co., Plymouth	41.97
April	21	American	Milwaukee Cheese Co., Milwaukee	Peter Pauly Cheese Factory, Saukville	42.13
April	25	American	Peacock Cheese Co., Cobb	Rudolph Ipsen, Sinsinawa	40.52
April	26	American	B. A. Fessler & Co. Grocer, Sheboygan Falls	Liersch Butterine Co., Sheboygan	42.70
April	27	American	Brehm Cheese Co., Fennimore	Geo. Pfingston, Mount Hope	41.35
April	28	American	C. A. Straubel Ch. Co., Antigo	Protratz & Hartman, Marion	38.65
April	28	American	C. A. Straubel Ch. Co., Antigo	Emil Krammer, Polar	38.69
May	2	American	O. Weyer Cheese Factory, Manitowoc	Otto Weyer, Manitowoc	39.73
May	3	American	M. Uhlmann & Co., Mineral Point	H. Mills, Mineral Point	42.51

Cheese—Not Standard—Continued

Date	Kind	Bought of or Collected at	Manufacturer or Jobber	Per cent moisture
1922				
May 4	American	A. H. Barber, Dodgeville	Walter Stewart, Avoca	39.91
May 9	Brick	A. Grossenback, Milwaukee	A. F. Guelzaw, Portage	44.12
May 9	American	H. B. Stanz Co., Milwaukee	A. H. Bley, Belgium	43.49
May 9	American	H. B. Stanz Co., Milwaukee	A. H. Bley, Belgium	42.30
May 9	American	H. B. Stanz Co., Milwaukee	A. H. Bley, Belgium	43.87
May 18	American	A. H. Barber & Co., Dodgeville	Paul Schroeder, Dodgeville	40.71
May 31	Brick	Milwaukee Cheese Co., Milwaukee	J. L. Kraft & Bros. Co., Plymouth	46.18

Cream—Standard—Delivered to Creameries

Date	Delivered by	Delivered to
1921		
July 11	C. F. Hardwick, Stoughton	Kothlow Creamery, Edgerton.
July 13	C. F. Hardwick, Stoughton	Kothlow Creamery, Edgerton.
July 15	C. F. Hardwick, Stoughton	Kothlow Creamery, Edgerton.
1922		
Jan. 17	William Kilps, Dancy	Mott & Wood Cream Station.
Feb. 7	Perry Brothers, Ft. Atkinson	Cambridge Creamery.
Feb. 9	Perry Brothers, Ft. Atkinson	Cambridge Creamery.
Feb. 14	Perry Brothers, Ft. Atkinson	Cambridge Creamery.
April 6	Frank Modar, Marengo	North York Cream Station.
April 6	Oscar Hintsa, Marengo	North York Cream Station.
April 25	F. M. Sharp, Catawba	Mott & Wood Cream Station.
April 28		Mellon Produce Co. Cream Station at Sanborn.
May 5	R. E. Poppe, Highbridge	Nybeck & Louma Store.
May 5	Barney Gehrman, Mellen	Nybeck & Louma Store.

Cream Samples Tested for Per Cent of Butter Fat to Determine Overreading or Underreading of Babcock Test

During the period covered by this report thirty-four samples of cream were collected by members of the commission with the view of determining whether or not overreading or underreading of the Babcock test was being practiced by the purchasers of cream who were paying for the same on the basis of the butter fat contained therein as determined by the Babcock test. The percentage of fat in these samples was determined in the laboratory.

Cream From City Milk Supply—Standard

Date	Bought of
1921	
Sept. 23	Ed. Lalor, Madison.
Sept. 23	Ed. Lalor, Madison.
Oct. 25	West Salem Canning Co., West Salem.
Oct. 25	West Salem Canning Co., West Salem.
Dec. 22	Walter Behrend, Hortonville.
1922	
Jan. 31	Vanden Brook Milk Co., Green Bay.
Feb. 6	Emil Bentz, Wausau.
May 20	E. C. Schuchardt, Madison.

Cream From City Milk Supply—Not Standard

Date	Bought of	Per cent butter fat
1921		
Nov. 15	Robert Stillman, Osseo	16.50
Nov. 30	Mrs. Louis Hebert, Chippewa Falls	16.78
Dec. 7	James Nelson, Frederic	17.0
Dec. 7	W. Vehlon, Watertown	15.0
Dec. 13	Nick Vogt, West Bend	14.80
Dec. 15	Nelson Dairy, Superior	16.50
Dec. 15	Simon & Graff, Superior	13.0
Dec. 15	D. Carsten, Waukesha	16.0
Dec. 16	Shirley Harrison, Waukesha	13.50
1922		
Jan. 17	James Coenen, Appleton	15.50
Jan. 17	Albert West, Appleton	16.00
Jan. 20	Anthony Tynor, Prairie du Chien	17.0
Jan. 20	River Side Dairy, Oconomowoc	16.16
Jan. 25	G. T. Bergseth, Taylor	16.0
Jan. 25	Oscar Meinhardt, Sheboygan	16.0
Jan. 30	Lucien Delakant, Green Bay	14.50
Jan. 31	Mrs. C. Calhane, Ashland	16.0
Jan. 31	A. P. Linrude, Ashland	16.5
Jan. 31	Alex Champeau, Green Bay	14.0
Feb. 1	Purity Creamery Co., Ashland	16.0
Feb. 1	Tip Top Dairy Co., Manitowoc	16.0
Feb. 6	Henry Murett, Wausau	16.16
Feb. 6	Peter Testine, Wausau	14.84
Feb. 7	N. J. Moon & Son, Oshkosh	16.20
Feb. 7	Henry Wood, Wausau	12.0
Feb. 28	D. S. Miles & Sons Dairy, Marinette	14.50
Mar. 21	J. M. Dodmead, Eau Claire	13.50
Mar. 21	W. J. Bye, Eau Claire	15.50
Mar. 22	Lynn Falcon, Eau Claire	15.66
April 25	J. A. Becker, Hurley	16.50
May 20	W. Warringer, Madison	16.0

Cream—Submitted Samples

Date	Submitted by	Remarks
1921		
July 5	Homer Jacobson, Barron	Standard.
July 7	Windsor Bristol Dairy Co., Sun Prairie	Standard.
July 7	Jsopels, Adraktis Co., Manitowoc	Standard.
July 11	Albert James, Antigo	Standard.
July 11	W. M. Johnson, Rice Lake	Standard.
July 29	Wisconsin Butter & Cheese Co., Elkhorn	Tested for neutralizer. No sodium carbonate, no boric acid, no formaldehyde present.
Aug. 22	Wm. Wagner, Suring	Standard.
Aug. 22	E. W. Owen, Fall Creek	Standard.
Aug. 22	E. W. Owen, Fall Creek	Standard.
Oct. 3	Atlee Midje, Prairie Farm	Standard.
Oct. 13	Acher E. Rost, Big Falls	Standard.
Oct. 21	H. A. Curt, Almena	Standard.
Nov. 14	H. P. Nielsen, Deerfield	Standard.
Nov. 28	H. Schrenick, Pickett	Standard.
Nov. 29	B. P. Southworth, La Farge	Standard.
Dec. 8	C. F. Schultz, Osseo	Standard.
Dec. 21	Perry Brothers, Ft. Atkinson	Standard.
Dec. 23	Eagle River Co-operative Co., Eagle River	Standard.
Dec. 23	Perry Brothers, Ft. Atkinson	Standard.
Dec. 29	Kielsmeier Co., Manitowoc	Standard. Tested for foreign fat. None found.
1922		
Jan. 16	Roy L. Schermerhorn, Winneconne	Standard.
Jan. 16	Edwin Thomley, Osseo	Standard.
Jan. 18	Ladysmith Co-operative Creamery Co., Ladysmith	Standard.
Jan. 18	Kielsmeier Co., Plymouth	Tested for foreign fat. None found.
Jan. 25	Peter Hilgers, Dane	Standard.
Jan. 25	Richmond Creamery Co., New Richmond	Standard.
Jan. 30	Chas. F. Schultz, Osseo	Standard.
Feb. 2	Henry Spangler, Midway	Standard.
Feb. 3	Gus Bandt, Neshkora	Standard.
Feb. 10	Wenzel Yelk, Marshall	Standard.
Feb. 10	New Lisbon Co-operative Co., New Lisbon	Standard.
Feb. 16	Andrew Nordness, Waunakee	Standard.
Feb. 20	Carl Simonson, Centuria	Standard.
Mar. 2	A. Kresheck, Kennan	Not standard.
Mar. 3	Frank Doudna, Poynette	Standard.
Mar. 13	New Lisbon Co-operative Creamery Co., New Lisbon	Standard.

Mar. 21	Alb. Radtke, Ogema	Standard.
Mar. 22	P. W. Hales, Poynette	Standard.
Mar. 24	County Agent, Waukesha	Not standard.
Mar. 30	Kate Anderson, Prairie Farm	Standard.
April 6	Chas. Zander, Black Earth	Standard.
April 10	Chas. Olson, Grantsburg	Standard.
April 13	New Lisbon Co-operative Creamery Co., New Lisbon	Standard.
April 13	Annie Gilbert, Prairie Farm	Standard.
April 17	C. F. Schultz, Osseo	Standard.
April 19	J. F. Thomas, County Agent, Waukesha	Standard.
April 21	G. E. Campbell, Lone Rock	Standard.
April 24	Alfred Solum, Baldwin	Standard.
April 24	Philip Matott, Cadott	Standard.
May 11	F. C. Rath, Madison	Not standard.
May 15	Minor R. Brown, Prairie Farm	Standard.
May 18	F. C. Rath, Madison	Not standard.
May 22	Tsopels & Adraktis Co., Manitowoc	Standard.
May 22	Frank A. Jererzek, Jr., Dodge	Standard.
June 1	Dr. F. J. Check, Webster	Standard.
June 12	E. L. Schendel, Wilton	Standard.
June 12	Roy Sosalla, Whitehall	Standard.
June 12	Fred Baumann, Hartford	Standard.
June 17	Farmers Creamery Co., Bangor	Standard.
June 17	Louis Gloede, Kendall	Standard.
June 20	Wm. R. Patzwald, Fall Creek	Not standard.
June 20	Wm. R. Patzwald, Fall Creek	Standard.
June 20	Wm. R. Patzwald, Fall Creek	Standard.
June 20	Wm. R. Patzwald, Fall Creek	Standard.

Ice Cream—Standard

Date	Bought of or Submitted by	Manufacturer or Jobber
1921		
July 11	C. H. Rounds, Bangor	Gibson Ice Cream Co., La Crosse.
July 12	Gus Pappas, La Crosse	Gus Pappas, La Crosse.
July 12	Boerner's Drug Store, La Crosse	C. A. Boerner, La Crosse.
July 26	F. F. Kelley, Janesville	Cronin Dairy Co., Janesville.
July 26	Axel Madsen, Plymouth	Bade's Drug Co., Plymouth.
Aug. 9	Coliseum Billiard Hall, Janesville	.....
Aug. 17	B. Drook, Rice Lake	B. Drook, Rice Lake.
Aug. 17	C. C. Morrison, Barron	Eau Claire Creamery Co., Eau Claire.
Aug. 17	A. P. Stebbins Co., Barron	A. P. Stebbins Co., Barron.

Ice Cream—Standard—Continued

Date	Bought of or Submitted by	Manufacturer or Jobber
1921		
Aug. 17	Paulson Co., Rice Lake	G. O. Gustafson, Rice Lake.
Aug. 18	Roddys Drug Store, Camp Douglas	Tri State Ice Cream Co., La Crosse.
Aug. 24	*F. C. Rath, Madison	
Sept. 13	D. H. Sheppard, Platteville	D. H. Sheppard, Platteville.
Sept. 20	*F. C. Rath, Madison	
Sept. 20	*F. C. Rath, Madison	
Sept. 20	*F. C. Rath, Madison	
Sept. 20	*F. C. Rath, Madison	
Sept. 20	*F. C. Rath, Madison	Kennedy Co., Madison.
Sept. 20	*F. C. Rath, Madison	American Ice Cream Co., Madison.
Sept. 20	*F. C. Rath, Madison	Mansfield Ice Cream Co., Madison.
Oct. 13	Holman & Thorson, Westby	Gibson Ice Cream Co., La Crosse.
Oct. 14	M. Bell, Cashton	Tri State Ice Cream Corp., La Crosse.
Nov. 16	*A. King, Oshkosh	
1922		
Jan. 9	*Krohn & Brannon, Plymouth	Geo. H. Kothlow, Edgerton.
Feb. 2	Schvenfeld Bros., Edgerton	Gibson Ice Cream Co., La Crosse.
Feb. 7	T. E. Jensen & Co., Galesville	Tri State Ice Cream Corp., La Crosse.
Feb. 13	Levy News Agency, La Crosse	Tri State Ice Cream Co., La Crosse.
Mar. 9	Jas. G. Norris, Wonewoc	Central Wisconsin Creamery Co., Reedsburg.
Mar. 10	G. A. Saschinski, Reedsburg	Cronin Dairy Co., Janesville.
Mar. 22	A. W. Zilmer, Monroe	Shawano Ice Cream Co., Shawano.
Mar. 23	Ruby Inn Confectionery Store, Shawano	Gibson Ice Cream Co., La Crosse.
April 4	Rathbim's Restaurant, Sparta	
April 11	*E. Babcock, Madison	
April 11	*E. Babcock, Madison	
April 11	*E. Babcock, Madison	
May 11	*Tiedeman Pharmacy, Madison	Tri State Ice Cream Corp., Prairie du Chien.
May 11	Geo. Fries, Lone Rock	Prairie du Chien Creamery Co., Prairie du Chien.
May 12	W. S. Kite, Lone Rock	
May 22	*Tsopels & Adraktis Co., Manitowoc	Gibson Ice Cream Co., La Crosse.
May 23	Charles H. Miles, Sparta	Tri State Ice Cream Corp., La Crosse.
May 23	Wm. Wittstein, Sparta	Central Wisconsin Creamery Co., Reedsburg.
June 9	G. H. Kothlow, Edgerton	
June 15	*F. C. Rath, Madison	
June 15	*F. C. Rath, Madison	Shurtliff Co., Janesville.
June 16	Coliseum Billiard Hall, Janesville	

*Submitted samples.

Ice Cream—Not Standard

Date	Bought of or Submitted by	Manufacturer or Jobber	Per cent fat
1921			
July 11	H. C. Holtze, Bangor	Tri State Ice Cream Co., La Crosse	4.78
July 19	J. Gregory, Janesville	Cronin Dairy Co., Janesville	7.83
July 19	Savoy Lunch Room, Janesville	Shurtliff Co., Janesville	11.17
July 26	Newman & Grebe, Janesville	Shurtliff Co., Janesville	10.84
Aug. 17	Geo. Johnson Restaurant, Barron	Rice Lake Creamery Co., Rice Lake	11.19
Aug. 17	Aug. Wright, Fond du Lac	Session Ice Cream Co., Fond du Lac	11.38
Aug. 22	*L. S. Rodgers, Madison		7.65
Sept. 9	Cronin Dairy Co., Janesville	Cronin Dairy Co., Janesville	11.47
1922			
April 10	C. Rannenberg, Madison	American Ice Cream Co., Madison	11.36
May 19	Benedicts Ice Cream Parlor, Eau Claire	Benedicts Ice Cream Parlor, Eau Claire	9.42
June 16	A. Razook, Janesville	G. H. Kothlow, Edgerton	11.07

*Submitted samples.

Milk—Standard—Delivered to Creamery, Cheese Factory or Condensary

Date	Delivered by	Delivered to
1921		
Aug. 2	Joseph Stuckmeyer, Lomira	Shell Rock Cheese Factory.
Sept. 7	Wm. Brunhoefer, Reedsburg	Nestles Food Co.
Sept. 7	Fred Harder, Reedsburg	Nestles Food Co.
Sept. 13	Henry Dohlquist, Oconto Falls	North Branch Cheese Factory.
Sept. 13	Henry Dohlquist, Oconto Falls	North Branch Cheese Factory.
Oct. 15	L. G. Schubert, West Salem	West Salem Canning Co.
Oct. 15	L. G. Schubert, West Salem	West Salem Canning Co.
Nov. 22	J. Thiuem, Hartford	North Rubicon Cheese Factory.
Nov. 22	Geo. Troller, Hartford	North Rubicon Cheese Factory.
Nov. 22	G. Guetscheurider, Hartford	North Rubicon Cheese Factory.
Nov. 22	E. Belke, Hartford	North Rubicon Cheese Factory.

Milk—Standard—Continued

Date	Delivered by	Delivered to
1922		
Feb. 21	Waterloo Canning Co., Waterloo	Fountain Creamery.
Feb. 21	Otto Dorchader, Waterloo	Fountain Creamery.
Feb. 28	L. Borst & Son, Marinette	Two Mile Dairy.
Mar. 3	Frank Talbert, Birnamwood	Amity Co-op. Cheese Factory.
Mar. 9	Theo. Abramson, Sawyer	John Stoneman's Meat Market.
Mar. 9	Theo. Abramson, Sawyer	Van Camp's Condensary.
May 10	R. Schoreder, Marion	Marion Cheese Factory.
May 11	Mr. RacKorn, Martintown	Martintown Cheese Factory.
June 1	Max Dieck, Marion	Marion Cheese Factory.

Milk—Not Standard—Delivered to Cheese Factories, Creameries or Condensaries

Date	Sold or Delivered by	Sold or Delivered to	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey	Remarks
1921								
July 19	Hunt Bros., Riley	Kranz Cheese Factory	1.0287	3.35	11.32	7.97	39.2	Below standard in solids not fat.
July 24	C. Larson, So. Wayne	Wista Butter and Cheese Factory	1.0355	2.8	12.41	9.61	43.1	Skimmed.
Aug. 2	Joseph Baiele, Lomyra	Shell Rock Cheese Factory	1.0254	2.80	9.73	6.93	35.15	Badly watered.
Aug. 11	Joe Madden, East Troy	Troy Milk Prod. Plant	1.0279	3.55	11.41	7.86	38.90	Below standard in solids not fat.
Aug. 11	Frank Wendt, East Troy	Troy Milk Prod. Plant	1.0292	3.3	11.41	8.11	40.0	Below standard in solids not fat.
Aug. 11	Bert Mitchell, Troy Center	Troy Milk Prod. Plant	1.0242	2.70	9.24	6.54	35.0	Heavily watered.
Aug. 11	W. Wendt, East Troy	Troy Milk Prod.	1.0295	3.05	11.08	8.03	38.95	Below standard in solids not fat.
Aug. 24	Dan Bucle, Hartford	West Side Cheese Factory	1.0278	3.6	11.77	8.17	39.0	Watered.
Aug. 27	R. W. Olson, Brownstown	Hurli Cheese Factory	1.0234	2.3	8.71	6.41	34.75	Badly watered.
Sept. 6	Wm. Brunkaefer, Reedsburg	Nestles Food Co.	1.0272	3.5	10.62	7.12	36.8	.....
Sept. 13	John Sauter, Brodhead	Brodhead Cheese Factory	1.0290	2.5	10.28	7.78	37.5	.....
Sept. 13	Aug. Numeman, Brodhead	Brodhead Cheese Factory	1.0317	2.7	11.43	8.73	40.5	.....
Sept. 13	Henry Noll, Brodhead	Brodhead Cheese Factory	1.0279	2.8	10.335	7.67	37.25	.....

Sept. 13	Art. Marcus, Brodhead	Brodhead Cheese Factory	1.0310	2.75	11.24	8.49	40.1	
Sept. 13	Ed. Fleming, Brodhead	Brodhead Cheese Factory	1.0309	2.9	11.36	8.46	39.55	
Nov. 13	Truckman, West Bend	Whitehouse Condensery	1.0192	2.7	8.14	5.44	31.2	Badly watered.
Nov. 22	Henry Grundahl, Mt. Horeb	Soyftestad Cheese Factory	1.0322	3.6	12.50	8.90	40.9	Partly skimmed.
1922								
Jan. 27	Wm. Edler, Sheboygan	U. Seigl Dairy	1.0273	2.8	10.06	7.26	38.10	Watered.
Jan. 27	Wm. Edler, Sheboygan	U. Seigl Dairy	1.0280	2.8	10.15	7.35	38.00	Watered.
Feb. 2	H. Carsten, Green Bay	Green Bay Ice Cream and Dairy	1.0300	3.35	11.29	7.94	40.40	Not standard in solids not fat.
Feb. 2	Wm. Millter, Green Bay	Green Bay Ice Cream and Dairy	1.0315	3.0	11.32	8.32	41.0	Not standard in solids not fat.
Feb. 7	Wm. Woodke, West Depere	Clover Leaf Dairy	1.0210	2.8	8.36	5.56	33.60	Badly watered.
Feb. 9	Herman Bublitz, Birnamwood	Town Line Cheese Factory		1.8				Skimmed.
Feb. 9	Herman Bublitz, Birnamwood	Town Line Cheese Factory	1.0330	1.8	10.46	8.66	42.80	Skimmed.
Feb. 21	Otto Splitgarber	Fountain Creamery	1.0302	3.20	11.08	7.88	40.70	Below standard in solids not fat.
Feb. 21	M. Woelffer, Waterloo	Fountain Creamery	1.0312	3.1	11.22	8.12	41.70	Below standard in solids not fat.
Feb. 21	Alvin Eichel, Waterloo	Fountain Creamery	1.0300	3.1	11.02	7.92	39.50	Below standard in solids not fat.
Mar. 2	Frank Wehling, Spencer	Spokeville Cheese Factory	1.0265	2.65	9.70	7.05	36.5	Watered.
Mar. 2	Gust Wehling, Spencer	Spokeville Cheese Factory	1.0315	2.85	11.23	8.38	41.15	Skimmed.
Mar. 3	Frank Talbert, Birnamwood	Amity Co-op. Cheese Factory		2.85				Skimmed.
Mar. 3	Rudolph Talbert, Birnamwood	Amity Co-op. Cheese Factory	1.0320	2.9	11.24	8.34	41.80	Skimmed.
Mar. 3	Rudolph Talbert, Birnamwood	Amity Co-op. Cheese Factory		3.1				Skimmed.
Mar. 3	Frank Vogel, Spencer	Spokeville Cheese Factory	1.0318	2.6	10.98	8.38	39.90	Skimmed.
Mar. 3	R. R. Stevens, Spencer	Spokeville Cheese Factory	1.0304	2.8	10.69	7.89	40.50	Delivered as produced by the herd.
Mar. 16	Wm. McMillon, Neillsville	Shortville Cheese Factory		1.8			42.15	
Mar. 17	Fr. Beach, Monroe	Franklin Cheese Factory	1.0305	3.3	11.21	7.91	42.05	Not standard in solids not fat.
Mar. 18	Theo. Abramson, Sawyer	John Stoneman's Meat Market	1.0342	2.60	11.41	8.81	42.15	Skimmed.
Mar. 23	W. Kuehn, Shawano	Rose Brook Co-op. Association	1.0310	3.1	11.38	8.28	40.80	
April 14	F. Leiskan, Birnamwood	Elm Grove Cheese Factory		2.40				Skimmed.
April 14	F. Leiskan, Birnamwood	Elm Grove Cheese Factory		2.60	11.15	8.55		Skimmed.
April 17	C. Wendorf, Wausau	Kleinheinz Dairy Co.	1.0314	3.9	10.96	7.96	39.35	
April 17	A. Kolinsinki, Wausau	Kleinheinz Dairy Co.	1.0314	2.90	10.94	8.04	39.05	
April 18	Louis Bloedern, Reedsville	Reedsville Cheese Factory	1.0280	2.95	10.35	7.40	38.10	
April 18	F. Maertz, Reedsville	Reedsville Cheese Factory	1.0278	3.3	10.76	7.46	37.95	
April 21	John Zuhuranie, Clayton	Maple Leaf Cheese Factory	1.0276	3.9	11.24	7.34	37.10	Watered.
April 21	Ferdinand Grunke, Clayton	Maple Leaf Cheese Factory	1.0322	4.2	12.82	8.62	42.20	
April 21	Steve Zuhuranie, Clayton	Maple Leaf Cheese Factory	1.0295	3.2	10.95	7.75	39.95	
April 21	Wm. Schroeder, Sr., Birnamwood	Birnamwood Cheese Factory	1.0292	3.0	10.41	7.41	38.50	
April 21	Joe Barberick, Clayton	Maple Leaf Cheese Factory	1.0276	3.4	10.88	7.48	38.10	Watered.
April 25	Fr. Polifks, Whitelaw	Cream Valley Co-op. Co.	1.0280	3.3	10.55	7.25	37.50	Watered.

Milk—Not Standard—Continued

Date	Sold or Delivered by	Sold or Delivered to	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey	Remarks
1922								
May 1	A. Schneiden, Wausau	Kleinheinz Dairy Co.	1.0314	3.3	11.36	8.06	40.10	Below standard in solids not fat.
May 1	Otto Dehnall, Wausau	Kleinheinz Dairy Co.	1.0304	3.5	11.43	7.93	40.40	Below standard in solids not fat.
May 1	Joe Kaiser, Wausau	Kleinheinz Dairy Co.	1.0306	3.5	11.64	8.14	40.25	Below standard in solids not fat.
May 2	Chas. Koepler, Oconomowoc	Summit Valley Cheese Factory	.....	3.2	10.66	7.46	.....	Below standard in solids not fat.
May 10	Max Dieck, Marion	Marion Cheese Factory	1.0282	3.3	11.05	7.75	39.1	Watered.
May 11	James Vermider, Martintown	Martintown Cheese Factory	1.0308	2.50	10.73	8.23	39.70	Skimmed.
May 11	W. Kindert, Martintown	Martintown Cheese Factory	1.0308	3.0	11.26	8.26	40.70	Not standard as produced by the herd.
May 11	Mr. McKeely, Martintown	Martintown Cheese Factory	1.0318	3.0	11.36	8.36	41.40	Not standard in solids not fat.
May 11	H. Eells, Martintown	Martintown Cheese Factory	1.0310	3.1	11.23	8.13	39.65	Not standard in solids not fat.
May 17	Matt Meyer, Conrath	Conrath Co-op. Dairy Co.	1.0324	2.9	11.41	8.51	.....	Below standard in fat. Delivered as produced by the herd.
May 17	B. C. French, Conrath	Conrath Co-op. Dairy Co.	1.0340	2.6	11.29	8.66	40.40	Not standard in fat. Delivered as produced by the herd.
May 18	Marshall Moltzah, Strum	Receiving Station at Allen	1.0313	2.9	11.28	8.38	39.70	Below standard in fat and solids not fat.
June 1	F. Wyse, Monroe	Green Valley Cheese Factory	1.0303	2.9	11.06	8.16	39.30	Not standard in solids not fat.
June 1	H. Vetterli, Monroe	Green Valley Cheese	1.0301	2.9	11.30	8.40	40.30	Not standard in fat.
June 1	G. Berchtold, Monroe	Green Valley Cheese Factory	1.0320	2.7	11.24	8.54	40.80	.....
June 14	Gus Jago, Mayville	Perfection B. and C. Co.	1.0290	2.40	10.03	7.63	38.55	Watered.
June 17	Mr. Rueggsegger, South Wayne	Johnson Cheese Factory	1.0316	3.0	11.17	8.17	40.78	.....
June 17	Mr. Stewart, South Wayne	Johnson Cheese Factory	1.0310	2.6	10.83	8.13	40.0	.....
June 17	Mr. Koeplinck, South Wayne	Johnson Cheese Factory	1.0303	3.0	11.35	8.35	42.75	.....
June 17	J. Dunac, South Wayne	Johnson Cheese Factory	1.0310	2.7	10.86	8.16	40.0	.....
June 17	F. Hoffman, S. Wayne	Johnson Cheese Factory	1.0309	2.9	11.06	8.16	39.90	.....
June 17	Mr. Stauffer, South Wayne	Johnson Cheese Factory	1.0313	2.9	11.46	8.56	40.78	Not standard in fat.
June 21	U. Bruns Koroch., Darlington	Bruns Koro Cheese Factory	.....	2.8	11.43	8.63	41.20	Not standard in fat.
June 21	Lee White, Darlington	Bruns Koro Cheese Factory	.....	2.7	11.40	8.70	40.55	Not standard in fat.
June 1	Clarence White, Darlington	Bruns Koro Cheese Factory	.....	2.7	11.23	8.53	40.75	Not standard in fat.
June 24	A. Huber, Monroe	Ridge Cheese Factory	1.0287	3.1	11.03	7.93	38.75	Watered.
June 24	W. Weiss, Monroe	Ridge Cheese Factory	1.0285	2.9	10.75	7.85	39.45	Watered.

City Milk—Standard

Date	Delivered by or Purchased at	Date	Delivered by or Purchased at
1921		1922	
Oct. 25	West Salem Canning Co., West Salem.*	Mar. 3	L. Borst & Son, Marinette.
Oct. 25	West Salem Canning Co., West Salem.*	Mar. 7	Ambrose Delcorps, Sturgeon Bay.
Oct. 25	West Salem Canning Co., West Salem.*	Mar. 7	Lewis Blisk, Sturgeon Bay.
Dec. 29	A. M. Weiler Restaurant, Burlington.*	Apr. 7	Edward Korwitz, Berlin.
Dec. 29	F W. Boulden Restaurant, Burlington.*	May 6	Thomas Muhasky, Eagle.
Dec. 30	R. P. McAteer Restaurant, Oconomowoc.		

*Purchased at.

City Milk—Not Standard

Date	Delivered by or Purchased at	City	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey 20° C.	Remarks
1921								
Aug. 26	Earl Hadwick, Plymouth	Plymouth	1.0326	2.4	11.51	9.11	41.85	Skimmed.
Sept. 10	Wm. Worthman, La Crosse	La Crosse	1.0240	4.20	11.14	6.94	35.60	
Oct. 8	Harry Dennison, La Crosse	La Crosse	1.0271	3.3	10.89	7.59	35.75	
Oct. 8	Harry Dennison, La Crosse	La Crosse	1.0270	3.4	11.07	7.67	35.75	
Oct. 8	Herman Miller, La Crosse	La Crosse	1.0267	3.0	10.44	7.44	35.1	
Nov. 14	Platform*	Fredonia	1.0199	2.55	8.18	5.63	31.45	
Nov. 29	John Bernstein, Rhinelander	Rhinelander	1.0300	2.85	10.87	8.02	39.0	Skimmed.
Nov. 29	J. J. Hickey, Rhinelander	Rhinelander	1.0346	2.0	10.90	8.90	41.80	
Dec. 6	W. Frederick*	Watertown		2.60				Skimmed.
Dec. 6	E. Nettleton, Stevens Point	Stevens Point	1.0350	3.0	12.47	9.47	43.15	
Dec. 6	J. C. Altmann, New Glarus	New Glarus	1.0301	3.0	11.05	8.05	39.95	
Dec. 7	A. Wuillenmier, Monticello	Monticello	1.0340	2.90	12.05	9.15	42.30	Skimmed.
Dec. 8	R. J. Ellis, Packwaukee	Packwaukee,	1.0240	3.10	9.45	6.35	33.50	Badly adulterated.
Dec. 16	L. A. SaLautos,* Richland Center	Richland Center	1.0369	2.60	12.63	10.03	43.40	Skimmed.
Dec. 16	A. E. Barry,* Richland Center	Richland Center	1.0352	2.50	12.05	9.55	42.90	
Dec. 29	H. Ureck,* Burlington	Burlington		1.7				
Dec. 29	Badger Hotel Cafe., Burlington	Burlington	1.0336	1.9	10.66	8.76	42.40	Skimmed.

City Milk—Not Standard—Continued

Date	Delivered by or Purchased at	City	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey 20° C.	Remarks
1922								
Jan. 19	Harry Grundman, Menasha	Menasha	1.0333	3.0	11.94	8.94	41.80	Skimmed.
Jan. 20	Gear's Dairy,* Menasha	Menasha	1.0322	4.1	12.96	8.86	41.95	Skimmed.
Jan. 21	John Hanson, Monroe	Monroe	1.0278	3.35	11.02	7.67	40.1	Low in solids not fat.
Jan. 31	Brown County Milk Exchange, Green Bay	Green Bay	1.0267	3.0	10.13	7.13	37.0	Watered.
Jan. 31	Brown Co. Milk Exchange, Green Bay	Green Bay	1.0332	2.7	11.66	8.96	41.80	.....
Jan. 31	Brown Co. Milk Exchange, Green Bay	Green Bay	.....	2.5	10.57	8.07	39.70	.....
Jan. 31	Brown Co. Milk Exchange, Green Bay	Green Bay	.....	2.8	11.22	8.42	41.20	.....
Feb. 7	Henry Wood, Wausau	Wausau	1.0316	3.1	11.43	8.33	41.40	.....
Feb. 7	Charley Thiex, Oshkosh	Oshkosh	1.0340	3.0	11.98	8.98	43.20	Skimmed.
Feb. 10	F. H. Boyle, Fond du Lac	Fond du Lac	1.0324	2.68	11.29	8.61	40.1	Skimmed.
Feb. 10	Fred Ogie, Fond du Lac	Fond du Lac	1.0314	2.68	11.12	8.44	40.65	Skimmed.
Feb. 10	R. Peterson, Fond du Lac	Fond du Lac	1.0323	2.8	11.33	8.53	40.75	Skimmed.
Feb. 27	Edwin Bruss, Kaukauna	Kaukauna	1.0277	4.0	11.68	7.68	38.50	Watered.
Mar. 16	Martin G. Peterson, Baldwin	Baldwin	1.0300	2.7	10.66	7.96	40.65	Skimmed.
April 7	Alb. Liese, Berlin	Berlin	1.0288	2.80	10.23	7.43	37.90	Watered.
April 18	W. G. Maxey, Oshkosh	Oshkosh	1.0293	4.5	12.58	8.08	38.35	Watered.
April 20	Wm. Hammond, Mauston	Mauston	1.0348	2.50	11.62	9.12	41.35	Skimmed.

*Purchased at.

Herd Samples Collected by Inspectors in Connection with Samples Taken at Cheese Factories, Creameries, and City Milk Supplies, Sent to Laboratory for Analysis

Date	From Herd of	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.	Remarks
1921							
July 5	J. J. Miller, Brodhead	1.0290	2.9	11.43	8.53	40.00	.....
July 5	Elmer Austin, Brodhead	1.03084	3.1	11.43	8.33	40.45	.....
July 7	Aug. Stacke, Mayville	1.0304	3.0	11.19	8.19	39.7	Below standard in solids not fat as given by the herd.
July 8	Fred Guillaume, Edgar	1.0312	3.4	11.93	8.53	40.9	.....
July 19	Hunt Bros., Riley	1.0285	3.3	11.38	8.08	39.9	.....

July	21	Wm. Foot, Granton	.....	3.0	.....	.....	.....	.....
Aug.	2	Joseph Baiele, Lomira	1.0310	3.10	11.36	8.26	39.75	.....
Aug.	11	Bert Mitchell, Troy Center	1.0313	4.3	13.07	8.77	41.1	.....
Aug.	15	Frank Wendt, Honey Creek	1.0292	3.2	11.33	8.13	40.3	.....
Aug.	16	Joe Madden, Elkhorn	1.0282	3.7	11.66	7.96	39.25	.....
Aug.	16	W. Wendt, East Troy	1.0272	3.4	11.14	7.74	38.25	.....
Aug.	23	John Horst, Rubicon	1.0282	3.6	11.68	8.08	39.0	Below standard in solids not fat as given by the herd.
Aug.	23	Ed. Horst, Rubicon	1.0274	3.45	11.38	7.93	38.75	.....
Aug.	24	Dan Bucle, Hartford	1.0304	3.6	12.43	8.83	40.70	.....
Aug.	29	R. W. Olson, Brownstown	1.0280	3.8	11.73	7.93	39.55	Not standard as given by the herd.
Sept.	6	Wm. Brunkoefer, Reedsburg	.....	3.25	12.19	8.94	42.65	.....
Sept.	10	Wm. Worthman, La Crosse	1.0310	4.40	12.75	8.35	40.0	.....
Sept.	15	John Sauter, Brodhead	1.0310	3.50	12.24	8.74	40.45	.....
Sept.	22	Aug. Numeman, Brodhead	1.0314	3.7	12.38	8.68	40.7	.....
Sept.	23	Henry Noll, Brodhead	1.0306	3.05	11.45	8.40	39.5	Standard.
Sept.	24	Art. Marcus, Brodhead	1.0300	3.4	11.77	8.37	39.8	Standard.
Sept.	26	Wm. Coll, Theresa	1.03204	3.7	12.67	8.97	40.75	.....
Nov.	14	Jos. Bradley, Fredonia	1.0308	4.85	13.75	8.90	40.55	.....
Nov.	22	Henry Grundahl, Mt. Horeb	1.0320	4.8	13.62	8.82	40.8	.....
Nov.	22	E. Belke, Hartford	1.0322	3.6	12.41	8.81	40.95	.....
Nov.	22	G. Guetscheuridar, Hartford	1.0307	3.60	11.97	8.37	40.60	.....
Nov.	22	Geo. Troller, Hartford	1.0320	3.40	11.99	8.59	40.60	.....
Nov.	22	J. Thiuem, Hartford	1.0304	3.4	11.81	8.41	40.2	.....
Nov.	29	John Bernstein, Rhinelander	1.0328	4.60	13.57	8.97	42.30	.....
Dec.	6	E. Nettleton, Stevens Point	1.0324	4.5	13.62	9.12	43.20	.....
Dec.	8	R. G. Ellis, Packwaukee	1.0326	4.60	13.32	8.72	40.95	.....
Dec.	14	J. J. Hickey, Rhinelander	1.0332	4.5	13.54	9.04	43.30	.....
Dec.	19	A. Wuillenmier, Monticello	1.0328	4.5	13.59	9.09	42.60	.....
1922								
Jan.	3	J. C. Altmann, New Glarus	1.0310	3.0	11.23	8.23	40.80	Low in solids not fat as given by herd.
Jan.	27	Wm. Edler, Sheboygan	1.0314	3.2	11.62	8.42	41.65	.....
Feb.	7	Charley Thiese, Oshkosh	1.0310	4.5	12.95	8.46	42.45	.....
Feb.	7	Wm. Woodke, West Depere	1.0280	3.7	11.29	7.59	39.50	.....
Feb.	8	Mrs. Aug. Tasche, Wausau	1.0332	4.5	13.61	9.11	42.10	.....
Feb.	9	Herman Bublitz, Birnamwood	1.0314	3.6	12.06	8.46	41.80	.....
Feb.	11	Fred Ogie, Fond du Lac	1.0320	3.65	12.29	8.64	41.0	.....
Feb.	11	F. H. Boyle, Fond du Lac	1.0324	3.2	12.05	8.85	40.5	.....
Feb.	11	R. Peterson, Fond du Lac	1.0317	3.73	12.21	8.48	40.6	.....
Feb.	23	Waterloo Canning Co., Waterloo	1.0336	3.60	12.44	8.84	42.10	.....
Feb.	24	Alvin Eichel, Waterloo	1.0322	3.6	12.25	8.65	41.70	.....
Feb.	27	Edwin Bruse, Kaukauna	1.0335	5.20	14.47	9.27	42.90	.....
Feb.	27	Otto Dorchadis, Waterloo	1.0325	3.1	11.57	8.47	41.45	.....
Feb.	27	M. Woelffer, Waterloo	1.0320	3.5	12.03	8.53	40.70	.....

Herd Samples—Continued

Date	From Herd of	Sp. G. 15.5°	Per cent milk fat	Per cent total solids	Per cent solids not fat	I. R. of whey at 20° C.	Remarks
1922							
Feb. 28	Otto Splitgarber, Waterloo	1.0312	3.20	12.27	8.47	41.10	
Mar. 2	Frank Wehling, Spencer	1.0312	3.0	11.15	8.15	39.85	
Mar. 3	L. Brost & Son, Marinette	1.0319	3.9	12.67	8.77	41.0	
Mar. 3	Frank Vogel, Spencer	1.0310	3.45	11.95	8.50	40.45	
Mar. 3	Gust Wehling, Spencer	1.0308	3.25	11.47	8.22	40.65	
Mar. 3	Frank Talbert, Birnamwood	1.0318	3.8	12.11	8.31	41.80	
Mar. 3	Rudolph Talbert, Birnamwood	1.0310	4.40	12.57	8.17	41.50	
Mar. 13	Henry Wood, Wausau	1.0314	3.1	11.20	8.10	40.25	
Mar. 13	Henry Wood, Wausau	1.0320	3.40	11.73	8.33	40.70	
Mar. 16	A. Kolasinski, Wausau	1.0318	3.40	12.02	8.62	41.0	
Mar. 16	Frank Vogel, Spencer	1.0314	3.1	11.54	8.44	39.95	
Mar. 16	Martin C. Peterson, Baldwin	1.0306	4.1	12.35	8.25	41.90	
Mar. 20	R. R. Stevens, Loyal	1.0308	2.60	10.46	7.86	40.30	
Mar. 23	W. Kuehn, Shawano	1.0306	3.4	11.53	8.13	40.80	
April 7	Alb. Liese, Berlin	1.0310	2.90	11.03	8.13	39.25	
April 7	Edward Korwitz, Berlin	1.0315	3.60	12.28	8.68	40.15	
April 17	A. Kolasinski, Wausau	1.0300	3.3	11.44	8.14	38.90	
April 18	Louis Bloedorn, Reedsville	1.0317	3.4	11.84	8.44	40.70	
April 18	Fred Maertz, Reedsville	1.0317	3.5	11.67	8.17	40.30	
April 18	W. G. Maxey, Oshkosh	1.0339	5.30	14.93	9.63	42.65	
April 20	Wm. Hammond, Mauston	1.0320	3.6	12.22	8.62	40.00	
April 20	Fred Leiskan, Birnamwood	1.0310	3.2	11.36	8.16	39.90	
April 21	C. Wendorf, Wausau	1.0290	3.5	11.30	7.80	39.25	
April 21	Steve Zuhuranie, Clayton	1.0297	3.6	11.55	7.95	39.70	
April 21	John Zuhuranie, Clayton	1.0302	4.2	12.54	8.34	40.30	
April 22	Ferdinand Grunke, Clayton	1.0322	3.9	12.32	8.42	40.95	
April 24	Joe Baberick, Clayton	1.0312	4.1	12.58	8.48	41.55	
April 25	F. Polifka, Whitelaw	1.0298	3.2	11.11	7.91	39.70	
April 26	Frank Polifka, Whitelaw	1.0316	3.0	11.15	8.15	40.40	
May 2	Chas. Koepler, Oconomowoc	.....	3.2	11.03	7.83	40.60	
May 6	Thomas Neubasky, Eagle	1.0324	3.50	12.22	8.72	41.80	
May 11	James Vermider, Martintown	1.0312	2.90	10.89	7.99	40.15	
May 13	W. Kundert, Martintown	1.0320	3.0	11.21	8.21	41.10	
May 13	Mr. Rackhorn, Martintown	1.0320	3.3	11.93	8.63	40.60	
May 15	Joe Kaiser, Wausau	1.0304	3.5	11.95	8.45	39.60	
May 15	Otto Dehnall, Wausau	1.0307	3.8	12.19	8.39	39.30	
May 17	Matt Meyer, Conrath	1.0322	2.9	11.56	8.66	40.30	
May 17	B. C. French, Conrath	1.0330	3.0	11.66	8.66	40.10	
May 22	Arnold Schmeiden, Wausau	1.0324	3.0	11.74	8.74	39.95	
June 1	Max Dieck, Marion	1.0357	3.5	12.83	9.33	42.0	
June 14	Gus Jago, Mayville	1.0322	3.2	11.49	8.29	40.30	
June 19	Mr. Berchtold, Monroe	1.0310	2.5	10.44	7.94	39.60	

Milk—Submitted Samples

Date	Submitted by	Sp. G. 15.5°	Per cent fat	Per cent total solids	Per cent solids not fat	Z. I. R. 20° C.
1921						
July 13	Michael Klein, Clayton		3.4			
July 18	Wisconsin Butter & Cheese Co., Elkhorn		3.0	10.71	7.71	38.25
July 25	Fred C. Mansfield, Johnson Creek					41.75
Aug. 1	Fred Mansfield, Johnson Creek	1.0329	2.90	11.52	8.62	41.35
Aug. 3	Fred Mansfield Co., Johnson Creek	1.0305	3.00	11.05	8.05	40.8
Aug. 8	James Van Duser, Whitewater		3.05			
Aug. 8	James Van Duser, Whitewater		3.40			
Aug. 8	James Van Duser, Whitewater		3.10			
Aug. 8	James Van Duser, Whitewater		3.60			
Aug. 8	James Van Duser, Whitewater		3.35			
Aug. 10	F. C. Mansfield, Johnson Creek					39.65
Aug. 22	Fred C. Mansfield Co., Johnson Creek	1.031	3.2		9.08	
Aug. 27	Fred C. Mansfield Co., Johnson Creek	1.0296	2.70	10.98	8.28	39.40
Sept. 26	Theo. Otter, Avoca		3.30			
Sept. 26	Theo. Otter, Avoca		3.65			
Sept. 26	Theo. Otter, Avoca		3.60			
Sept. 26	Theo. Otter, Avoca		3.30			
Sept. 26	Theo. Otter, Avoca		3.80			
Sept. 26	Theo. Otter, Avoca		3.40			
Sept. 26	Theo. Otter, Avoca		3.95			
Sept. 26	Theo. Otter, Avoca		3.70			
Sept. 26	Theo. Otter, Avoca		3.45			
Sept. 26	Theo. Otter, Avoca		4.00			
Sept. 26	Theo. Otter, Avoca		4.00			
Sept. 26	Theo. Otter, Avoca		3.50			
Sept. 26	Theo. Otter, Avoca		3.60			
Sept. 26	Theo. Otter, Avoca		3.85			
Sept. 26	Theo. Otter, Avoca		3.50			
Sept. 26	Theo. Otter, Avoca		3.70			
Sept. 26	Theo. Otter, Avoca		3.40			
Sept. 26	Theo. Otter, Avoca		4.20			
Sept. 26	Theo. Otter, Avoca		3.40			
Sept. 26	Theo. Otter, Avoca		4.7			
Oct. 1	G. W. Kenyon, Beaver Dam		4.6			
Oct. 9	Edwin Sherbert, Weyauwega		4.5			
Oct. 11	Paul Lemmel, Sparta		3.7			
Oct. 19	S. J. Engeseth, De Forest		3.6			
Oct. 31	Selmer Syftestad, Mt. Horeb					

Milk—Submitted Samples—Continued

Date	Submitted by	Sp. G. 15.5°	Per cent fat	Per cent total solids	Per cent solids not fat	Z. I. R. 20° C.
1921						
Oct. 31	Selmer Syftestad, Mt. Horeb		3.65			
Oct. 31	Selmer Syftestad, Mt. Horeb		3.6			40.1
Nov. 3	Weyauwega Products Co., Weyauwega		3.6			
Nov. 3	Weyauwega Products Co., Weyauwega		3.5			
Nov. 10	J. Knaack, Watertown		3.0			
Nov. 23	James Van Duser, Whitewater		4.1			
Nov. 23	James Van Duser, Whitewater		4.9			
Dec. 1	George Dansig, Elkhorn	1.0289	3.15	10.81	7.66	38.75
Dec. 5	Miss Walter, Madison		2.3			
Dec. 7	C. R. Peters, Shawano		3.9			
Dec. 19	Forest Glen Creamery Co., Zenda		3.2			
Dec. 19	Forest Glen Creamery Co., Zenda		3.08			
Dec. 19	Forest Glen Creamery Co., Zenda		3.4			
Dec. 19	Forest Glen Creamery Co., Zenda		3.3			
Dec. 19	Forest Glen Creamery Co., Zenda		2.95			
Dec. 19	Forest Glen Creamery Co., Zenda		3.4			
Dec. 19	Forest Glen Creamery Co., Zenda		3.15			
Dec. 19	Forest Glen Creamery Co., Zenda		3.45			
Dec. 19	Forest Glen Creamery Co., Zenda		3.2			
Dec. 19	Forest Glen Creamery Co., Zenda		3.1			
Dec. 19	Forest Glen Creamery Co., Zenda		3.5			
Dec. 19	Forest Glen Creamery Co., Zenda		3.0			
Dec. 19	Forest Glen Creamery Co., Zenda		3.0			
Dec. 19	Forest Glen Creamery Co., Zenda		4.1			
Dec. 19	Forest Glen Creamery Co., Zenda		3.2			
Dec. 19	Forest Glen Creamery Co., Zenda		3.27			
Dec. 19	Forest Glen Creamery Co., Zenda		3.17			
Dec. 19	Forest Glen Creamery Co., Zenda		3.2			
Dec. 19	Forest Glen Creamery Co., Zenda		3.5			
Dec. 19	Forest Glen Creamery Co., Zenda		3.5			
Dec. 19	Forest Glen Creamery Co., Zenda		3.4			
Dec. 19	Forest Glen Creamery Co., Zenda		3.4			
Dec. 19	Forest Glen Creamery Co., Zenda		3.7			
Dec. 19	Forest Glen Creamery Co., Zenda		3.3			
Dec. 10	Forest Glen Creamery Co., Zenda		3.5			
Dec. 19	Forest Glen Creamery Co., Zenda		3.4			
			3.2			

Dec. 19	Forest Glen Creamery Co., Zenda		3.35			
Dec. 19	Forest Glen Creamery Co., Zenda		3.3			
Dec. 19	Forest Glen Creamery Co., Zenda		3.7			
Dec. 19	Forest Glen Creamery Co., Zenda		3.6			
Dec. 19	Forest Glen Creamery Co., Zenda		3.7			
Dec. 19	Forest Glen Creamery Co., Zenda		3.7			
Dec. 19	Forest Glen Creamery Co., Zenda		4.1			
Dec. 19	Forest Glen Creamery Co., Zenda		3.15			
Dec. 19	Forest Glen Creamery Co., Zenda		3.8			
Dec. 19	Forest Glen Creamery Co., Zenda		3.1			
Dec. 19	Forest Glen Creamery Co., Zenda		3.05			
Dec. 19	Paul F. Gavin, Walworth		3.35			
Dec. 19	Paul F. Gavin, Walworth		3.20			
Dec. 19	Paul F. Gavin, Walworth		3.40			
Dec. 19	Paul F. Gavin, Walworth		2.85			
Dec. 19	Paul F. Gavin, Walworth		3.5			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, Walworth		3.6			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.20			
Dec. 19	Paul F. Gavin, Walworth		3.50			
Dec. 19	Paul F. Gavin, Walworth		3.0			
Dec. 19	Paul F. Gavin, Walworth		3.0			
Dec. 19	Paul F. Gavin, Walworth		3.20			
Dec. 19	Paul F. Gavin, Walworth		2.95			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.8			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, Walworth		3.4			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, Walworth		3.45			
Dec. 19	Paul F. Gavin, Walworth		3.55			
Dec. 19	Paul F. Gavin, Walworth		3.7			
Dec. 19	Paul F. Gavin, Walworth		3.5			
Dec. 19	Paul F. Gavin, Walworth		3.5			
Dec. 19	Paul F. Gavin, Walworth		5.5			
Dec. 19	Paul F. Gavin, Walworth		3.5			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, Walworth		3.6			
Dec. 19	Paul F. Gavin, Walworth		3.6			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.65			

Milk—Submitted Samples—Continued

Date	Submitted by	Sp. G. 15.5°	Per cent fat	Per cent total solids	Per cent solids not fat	Z. I. R. 20° C.
1921						
Dec. 19	Paul F. Gavin, Walworth		3.7			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.3			
Dec. 19	Paul F. Gavin, Walworth		3.7			
Dec. 19	Paul F. Gavin, Walworth		4.1			
Dec. 19	Paul F. Gavin, Walworth		3.6			
Dec. 19	Paul F. Gavin, Walworth		3.6			
Dec. 19	Paul F. Gavin, Walworth		3.65			
Dec. 19	Paul F. Gavin, Walworth		4.1			
Dec. 19	Paul F. Gavin, Walworth		3.2			
Dec. 19	Paul F. Gavin, WWlworth		3.8			
Dec. 22	Louis Hoh, Appleton		3.2			
Dec. 22	Edward S. Zeh, Appleton		3.6			
Dec. 28	Miss Gertrude Staub, Delavan		3.15			
1922		1.0323	3.3	12.07	8.77	41.60
Jan. 3	Fred C. Mansfield, Johnson Creek					
Jan. 3	Fred C. Mansfield, Johnson Creek	1.0278	2.5	9.99	7.49	
Jan. 3	Fred C. Mansfield, Johnson Creek		2.6			
Jan. 4	Paul F. Gavin, Walworth		3.1	11.68	8.58	
Jan. 4	Paul F. Gavin, Walworth		2.7			
Jan. 4	Paul F. Gavin, Walworth		3.1			
Jan. 4	Paul F. Gavin, Walworth		3.25			
Jan. 4	Paul F. Gavin, Walworth		3.2			
Jan. 4	Paul F. Gavin, Walworth		3.3			
Jan. 4	Paul F. Gavin, Walworth		3.1			
Jan. 4	Paul F. Gavin, Walworth		3.25			
Jan. 4	Paul F. Gavin, Walworth		3.6			
Jan. 4	Paul F. Gavin, Walworth		3.3			
Jan. 4	Paul F. Gavin, Walworth		3.1			
Jan. 4	Paul F. Gavin, Walworth		3.5			
Jan. 4	Paul F. Gavin, Walworth		3.0			
Jan. 4	Paul F. Gavin, Walworth		3.0			
Jan. 4	Paul F. Gavin, Walworth		2.97			
Jan. 4	Paul F. Gavin, Walworth		3.4			
Jan. 4	Paul F. Gavin, Walworth		3.6			
			3.1			

Jan.	4	Paul F. Gavin, Walworth		3.2			
Jan.	4	Paul F. Gavin, Walworth		3.5			
Jan.	4	Paul F. Gavin, Walworth		3.25			
Jan.	4	Paul F. Gavin, Walworth		3.2			
Jan.	4	Paul F. Gavin, Walworth		3.27			
Jan.	4	Paul F. Gavin, Walworth		3.5			
Jan.	4	Paul F. Gavin, Walworth		3.25			
Jan.	4	Paul F. Gavin, Walworth		3.4			
Jan.	4	Paul F. Gavin, Walworth		3.35			
Jan.	4	Paul F. Gavin, Walworth		3.6			
Jan.	4	Paul F. Gavin, Walworth		3.3			
Jan.	4	Paul F. Gavin, Walworth		3.3			
Jan.	4	Paul F. Gavin, Walworth		3.4			
Jan.	4	Paul F. Gavin, Walworth		3.1			
Jan.	4	Paul F. Gavin, Walworth		3.2			
Jan.	4	Paul F. Gavin, Walworth		3.5			
Jan.	4	Paul F. Gavin, Walworth		3.75			
Jan.	4	Paul F. Gavin, Walworth		3.57			
Jan.	4	Paul F. Gavin, Walworth		3.3			
Jan.	4	Paul F. Gavin, Walworth		3.1			
Jan.	4	Paul F. Gavin, Walworth		3.6			
Jan.	4	Paul F. Gavin, Walworth		4.35			
Jan.	4	Paul F. Gavin, Walworth		3.5			
Jan.	4	Paul F. Gavin, Walworth		3.55			
Jan.	4	Paul F. Gavin, Walworth		3.5			
Jan.	4	Paul F. Gavin, Walworth		4.1			
Jan.	4	Paul F. Gavin, Walworth		3.45			
Jan.	4	Paul F. Gavin, Walworth		3.8			
Jan.	4	Paul F. Gavin, Walworth		3.2			
Jan.	21	W. P. Hyland, Ashland	1.0318	4.1	12.74	8.64	41.60
Feb.	7	F. C. Rath, Madison	1.0325	3.1	11.71	8.61	41.8
Feb.	7	Indiana Condensed Milk Co., Albany		3.15			
Feb.	7	Indiana Condensed Milk Co., Albany		3.3			
Feb.	11	R. G. Williams, Cambria		3.25			
Feb.	11	R. G. Williams, Cambria		3.60			
Feb.	11	R. G. Williams, Cambria		3.75			
Feb.	11	R. G. Williams, Cambria		3.1			
Feb.	11	R G. Williams, Cambria		3.3			
Feb.	11	R. G. Williams, Cambria		2.5			
Feb.	11	R. G. Williams, Cambria		3.2			
Feb.	11	R. G. Williams, Cambria		3.3			
Feb.	11	R. G. Williams, Cambria		3.1			
Feb.	11	R. G. Williams, Cambria		3.8			
Feb.	11	R. G. Williams, Cambria		3.3			
Feb.	13	G. E. Campbell, Lone Rock	1.0303	3.2	11.41	8.21	
Feb.	13	G. E. Campbell, Lone Rock	1.0304	3.4	11.68	8.28	

Milk—Submitted Samples—Continued

Date	Submitted by	Sp. G. 15.5°	Per cent fat	Per cent total solids	Per cent solids not fat	Z. I. R. 20° C.
1922						
Feb. 21	F. O. Uehling & Co., Brodhead		3.5			
Mar. 8	J. F. Thomas, Waukesha		3.6			
Mar. 28	M. J. Duggon, Janesville		2.8			
Mar. 28	M. J. Duggon, Janesville		3.8			
April 1	Louie De Witt, Luxemburg	1.0350	1.75	10.80	9.05	41.50
April 5	Gust Bruse, Brillion		3.1			
April 19	John H. Schaefer, Chilton		3.40			
April 21	Nora Creamery Co., Deerfield		2.9			
April 24	Krause Bros., Lena		4.3	13.26	8.96	
April 24	Krause Bros., Lena		4.3	13.00	8.70	
April 25	George Mohr, Plymouth	1.0292	2.8	10.22	7.42	37.88
April 25	George Mohr, Plymouth	1.0300	2.6	10.55	7.95	39.65
April 26	R. Randall, Highland					45.15
April 27	Tom W. Rymer, Oconto Falls		5.30			
May 3	E. Babcock, Madison		3.3			
May 3	E. Babcock, Madison	1.0320	3.5	11.99	8.49	42.05
May 3	E. Babcock, Madison	1.0318	3.8	12.44	8.64	41.80
May 3	E. Babcock, Madison	1.0305	2.9	11.0	8.10	40.50
May 27	Carl W. Hopperdietzel, Athens		2.55			
May 27	Carl W. Hopperdietzel, Athens		2.5			
June 2	P. J. Roise, Superior					41.15
June 2	P. J. Roise, Superior					40.85
June 2	P. J. Roise, Superior					42.45
June 5	Ernest W. Jung, Juneau		2.9			41.45
June 5	H. O Zick, Lindsey		3.4			
June 13	Lige Niman, Greenwood		3.7			
June 13	L. L. Filliez, Francis Creek		2.5			
June 13	L. L. Fillies, Francis Creek		3.4			
June 13	L. L. Filliez, Francis Creek		0.7			
June 13	L. L. Filliez, Francis Creek		2.2			
June 21	Elmer W. Plopper, Clintonville	1.0302	4.2	12.98	8.78	41.65
June 23	Iver Framnes, Oconto Falls		2.9			

Miscellaneous Dairy Products

Date	Kind	Bought of	Manufacturer or Jobber	Remarks
1921				
July 1	Condensed milk	Robert Steinbring, Menomonie	Ried, Murdock & Co., Chicago	Standard.
Aug. 25	Evaporated milk	Cashin & Moran, Stevens Point	Badger Condensed Milk Co., South Germantown	Not standard.
Sept. 22	Evaporated milk	Withee Co-op. Co., Withee	John Hoffman & Sons, Milwaukee	Standard.
1922				
April 20	American Cheese	C. E. Blodgett C. B. & Egg Co., Marshfield	Fred Pollnow, Neillsville	No saltpeter

Flavorings and Flavoring Extracts

Date	Kind	Bought of	Manufacturer or Jobber	Remarks
1922				
April 14	Vanilla	Flanders & Dilly, Fond du Lac	Glasco Hubbs Co., Fond du Lac	Standard.
June 23	Vanilla	Boston Store, Milwaukee		Not standard. Contains coumarin and is not made from vanilla beans.

FLOUR

Flour—Not Bleached

Date	Brand	Bought of or Submitted by	Manufacturer or Jobber
1921			
Sept. 9	Winter	H. Trantmesin, Milwaukee	Ideal Flour Co., Milwaukee.
Sept. 9	Kern's Success	Kotvis Bros., Milwaukee	J. B. A. Kern & Sons, Milwaukee.
Sept. 9	Atlas	H. Rathkamp, Milwaukee	B. Stern & Sons, Milwaukee.
Sept. 9	Ladish Quality Hard Wheat Flour	Sam Kaiser, Milwaukee	Ladish Milling Co , Milwaukee.

Flour—Not Bleached—Continued

Date	Brand	Bought of or Submitted by	Manufacturr or Jobber
1921			
Sept. 12	Renown	L. H. Rotter, Milwaukee	Ladish Milling Co., Milwaukee.
Sept. 12	Pla-Safe	Wm. Hahn & Sons, Milwaukee	Abilene Flour Mill Co., Abilene, Kansas.
Sept. 12	Winter Wheat Flour	Wm. Hahn & Sons, Milwaukee	Cedarburg Milling Co., Cedarburg.
Sept. 12	Spearhead	A. Heath Co., Milwaukee	B. Stern & Sons, Milwaukee.
Sept. 12	Wheat	L. H. Rotter, Milwaukee	Washburn Crosby, Minneapolis, Minn.
Sept. 12	Mother's Best	M. Waxmann, Milwaukee	Glade Milling Co., Grand Island, Neb.
Sept. 12	True Value	Ladish Milling Co., Milwaukee	Ladish Milling Co., Milwaukee.
Sept. 12	True Value	Ladish Milling Co., Milwaukee	Ladish Milling Co., Milwaukee.
Sept. 12	Gold Medal	A. Heath Co., Milwaukee	Washburn Crosby Co., Minneapolis, Minnesota.
Sept. 12	Wingold	A. Heath Co., Milwaukee	Bay State Milling Co., Minneapolis, Minn.
Sept. 12	Fredom	M. Carpenter Baking Co., Milwaukee	Atkinson Flour Milling Co., Minneapolis, Minn.
Sept. 12	White Satin	M. Carpenter Baking Co., Milwaukee	Barker Milling Co., Minneapolis, Minn.
Sept. 12	Kansas Best	M. Carpenter Baking Co., Milwaukee	Consolidated Flour Milling Co., Hutchinson, Kansas.
Sept. 12	4 X	M. Carpenter Baking Co., Milwaukee	Pillsbury Flour Mills, Minneapolis, Minn.
Sept. 12	Clear Flour	M. Carpenter Baking Co., Milwaukee	Midland Flour Milling Co., Kansas City, Mo.
Nov. 16	Wheat	The Creasey Corporation, Madison	
Nov. 16		A. N. Davidson, Madison	
Dec. 20	Sunlite	Jaeger Milling Co., Watertown	Jaeger Milling Co., Watertown.
Dec. 22	Ethan Allen	L. E. Smith, Belleville	Wells Flour Mills, Wells, Minnesota.
Dec. 22	Winter Wheat	G. A. Lehnherr, Belleville	F. H. Minch, Paoli.
Dec. 22	Campbell's Golden Palace	E. R. Cullen, Belleville	L. C. Campbell Mills, Blooming Prairie, Minnesota.
1922			
Feb. 7	Success	J. B. A. Kern & Sons, Milwaukee	
Feb. 7	Beaumont	J. B. A. Kern & Sons, Milwaukee	
Feb. 7	Triumph	J. B. A. Kern & Sons, Milwaukee	
Feb. 7		Washburn Crosby Co., Minneapolis, Minnesota	
Feb. 7	Wheat	Washburn Crosby Co., Minneapolis, Minnesota	
Feb. 7		Pillsbury Flour Mills, Minneapolis, Minnesota	
Feb. 17	Wheat	Hanson Bros., Ashland	Washburn Crosby, Minneapolis, Minn.
Mar. 3	Pillsbury's Best	Hoffman Feed Co., Madison	Pillsbury Flour Mills, Minneapolis, Minn.
Mar. 14	Golden Palace	O. Bollingberg, Madison	L. C. Campbell Milling Co., Blooming Prairie, Minn.
Mar. 14	Blair's Acme	Universal Grocery Co., Madison	The Blair Milling Co., Atchison, Kansas.
Mar. 14	Jersey Lily	Schweke Bros., Reedsburg	Empire Milling Co., Minneapolis, Minn.
Mar. 18	White Pearl	Martin Calf-Feed Co., Mineral Point	New Prague Flouring Mill, New Prague, Minn.
Mar. 18	Triumph	Howe Bros., Stoughton	Gooch Milling & Elevator Co., Lincoln, Neb.
Mar. 18	Minnesota Queen	Conn & Boenig, Edgerton	Schultz & Banjan Co., Beardstown, Illinois.
Mar 18	Big Jo	Conn & Boenig, Edgerton	Bennison Love Co., Janesville.

Mar. 19	Big Jo	Wm. Steinmeyer Co., Milwaukee	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 20	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minnesota.
Mar. 31	Sure Best	Ratzlaff Bros., Edgerton	Schultz Banjan & Co., Beardstown, Illinois.

Flour—Bleached

Date	Brand	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1921				
Aug. 24	Improved Bleached	T. Weintrout, Kenosha	Southwestern Milling Co., Kansas City, Mo.	Bleached with nitrogen peroxide.
Sept. 12	Wheat Flour	L. H. Rotter, Milwaukee	Th. Orth Co., Milwaukee	Heavily bleached with nitrous acid.
Sept. 27	Wheat Flour	F. Sommers, Watertown	Watertown Mill Co., Watertown	
Dec. 8	Leach's Best	L. Leach & Son, Beloit	Union Mill Co., Waterloo, Iowa	
Dec. 8	Urma	Stofen & Stofen, Madison	The Urma Products Co., Louisville, Kentucky	Bleached with nitrogen peroxide.
Dec. 8	Crystal Patent	E. Ralston, Beloit	Union Mill Co., Waterloo, Iowa	Bleached with chlorine.
Dec. 8	Worlds Fair	E. Ralston, Beloit	Union Mill Co., Waterloo, Iowa	Bleached with nitrogen peroxide.
Dec. 8	Pioneer	Postal Store, Beloit	Union Mill Co., Waterloo, Iowa	Bleached with chlorine.
Dec. 8	Clear Quill	E. Ralston, Beloit	Union Mill Co., Waterloo, Iowa	Bleached with chlorine.
Dec. 20	Glemco Hard Wheat Flour	Globe Milling Co., Watertown	Globe Milling Co., Watertown	Bleached with chlorine.
Dec. 20	King Midas	Globe Milling Co., Watertown	Globe Milling Co., Watertown	Bleached with chlorine.
Dec. 20	White Daisy	H. T. Nowac, Watertown	Globe Milling Co., Watertown	Bleached with nitrogen peroxide.
Dec. 20	White Daisy	Globe Milling Co., Watertown	Globe Milling Co., Watertown	
Dec. 22	White Rose	G. A. Lehnherr, Belleville	Union Mills Co., Cedar Falls, Iowa	
Dec. 22	Prosperity	G. A. Lehnherr, Belleville	Union Mill Co., Cedar Falls, Iowa	Bleached with chlorine.
Dec. 22	Red Wing	G. A. Lehnherr, Belleville	Red Wing Milling Co., Red Wing	Bleached with nitrogen peroxide.
Dec. 22	Clear Quill	G. A. Lehnherr, Belleville	Union Mill Co., Waterloo, Iowa	
1922				
Feb. 7	Success	J. B. A. Kern & Sons, Milwaukee		Bleached with chlorine.
Feb. 7	Beaumont	J. B. A. Kern & Sons, Milwaukee		Bleached with chlorine.
Feb. 7	Triumph	J. B. A. Kern & Sons, Milwaukee		Bleached with chlorine.
Feb. 7	Bleached	Pillsbury Flour Mills, Minneapolis, Minn.		Bleached with chlorine.
Feb. 23	I. H. Flour	R. E. Buser, Madison	Direct Supply Co., Madison	Bleached with nitrogen peroxide.
Feb 23	Triumph	Howe Bros., Stoughton	Gooch Milling & Elevator Co., Lincoln, Neb.	Bleached with chlorine.
Feb. 23	Big Jo	R. E. Buser, Madison	Hoffman Feed Co., Madison	Bleached with nitrogen peroxide.

Flour—Bleached—Continued

Date	Brand	Bought of or Submitted by	Manufacturer or Jobber	Remarks
1922				
Feb. 23	Clear Quill	R. E. Ralston, Beloit	Union Mill Co., Waterloo, Iowa	Bleached with chlorine.
Feb. 23	Big Jo	Bauman & Hammond, Janesville	Bennison, Love, Janesville	Bleached with nitrogen peroxide.
Feb. 23	Wheat	Postal Store, Beloit	J. E. Ralston, Beloit	
Mar. 2	Prosperity	W. J. Geiger, Monroe	Union Mill Co., Waterloo, Iowa	Bleached with chlorine.
Mar. 3	Red Wing	Hoffman Feed Co., Madison	Red Wing Milling Co., Red Wing, Minn.	Bleached with nitrogen peroxide.
Mar. 3	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minn.	Bleached with nitrogen peroxide.
Mar. 3	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minn.	Bleached with nitrogen peroxide.
Mar. 14	Want Mor	Bollingberg, O., Madison	Alex Sinaiko, Madison	Bleached with chlorine.
Mar. 14	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minn.	Bleached with nitrogen peroxide.
Mar. 14	Red Wing	Hoffman Feed Co., Madison	Red Wing Milling Co., Red Wing, Minn.	Bleached with nitrogen peroxide.
Mar. 14	Blair's Certified	Universal Grocery Co., Madison	The Blair Milling Co., Atchison, Kansas	Bleached with nitrogen peroxide.
Mar. 14	Moses Best	Schweke Bros., Reedsburg	Moses Bros., Great Bend, Kansas	Bleached with chlorine.
Mar. 17	Big Jo	Wm. Steinmeyer Co., Milwaukee		Bleached with nitrogen peroxide.
Mar. 18	Richelieu	Howe Bros., Stoughton	Sprague Warner Co., Chicago, Ill.	Bleached with nitrogen peroxide.
Mar. 18	Richelieu	Howe Bros., Stoughton	Sprague Warner Co., Chicago, Ill.	Bleached with nitrogen peroxide.
Mar. 18	Big Jo	Graber & Theis, Mineral Point	Wabasha Roller Mills, Wabasha, Minn.	Bleached with nitrogen peroxide.
Mar. 18	Mid-West	Ratzlaff Bros., Edgarton	Mid West Milling Co., Abiline, Kansas	Bleached with chlorine.
Mar. 18	Urma	Stricker Bros., Edgerton	Urma Products Co., Louisville, Ky.	Bleached with chlorine.
Mar. 18	Iona	The Great Atlantic & Pacific Tea Co., Stoughton	The Great Atlantic & Pacific Tea Co., Stoughton	Bleached with nitrogen peroxide.
Mar. 20	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minn.	Bleached with nitrogen peroxide.
Mar. 20	Red Wing	Hoffman Feed Co., Madison	Red Wing Milling Co., Red Wing, Minn.	Bleached with nitrogen peroxide.
Mar. 20	Red Wing	Hoffman Feed Co., Madison	Red Wing Milling Co., Red Wing, Minn.	Bleached with nitrogen peroxide.
Mar. 20	Bixota	Hoffman Feed Co., Madison	Red Wing Milling Co., Red Wing, Minn.	Bleached with nitrogen peroxide.
Mar. 27	Big Jo	Hoffman Feed Co., Madison	Wabasha Roller Mills, Wabasha, Minn.	Bleached with nitrogen peroxide.
Mar. 31	Iona	The Great Atlantic & Pacific Tea Co., Madison	The Great Atlantic & Pacific Tea Co., Madison	Bleached with nitrogen peroxide.
Mar. 31	Gold Medal	The Great Atlantic & Pacific Tea Co., Madison	Washburn Crosby Co., Minneapolis, Minn.	
Mar. 31	Reflector	Pringle Bros. Co., Edgerton	Mid West Milling Co., Abilene, Kansas	Bleached with chlorine.
Mar. 31	Gloria	Pringle Bos. Co., Edgerton	Creasey Corporation, Madison	Bleached with nitrogen peroxide.
Mar. 31	Mid West	Ratzloff Bros., Edgerton	Mid West Milling Co., Abilene, Kansas	Bleached with chlorine.
Mar. 31	Crockers Best	Ratzlaff Bros., Edgerton	Washburn Crosby Co., Minneapolis, Minn.	Bleached with chlorine.
April 11	White Lily	Portage Cash Store, Portage	I. W. York, Portage	
April 11	Town Crier	Portage Cash Store, Portage	I. W. York, Portage	Bleached with chlorine.
April 11	Big Jo	O. H. Meyer, Portage	I. W. York, Portage	Bleached with nitrogen peroxide.

Flour—Submitted Samples

Date	Submitted by	Remarks
1921		
July 25	Stensland and Otterson, Eau Claire	Unbleached.
Aug. 12	Universal Grocery Store, Madison	Bleached with nitrogen peroxide.
Aug. 31	Endisch Bakery, Sheboygan	Gluten test—gluten in goodly amount.
Aug. 31	Endisch Bakery, Sheboygan	Gluten test—gluten in goodly amount.
Sept. 16	Milwaukee County Hospital, Wauwautosa	Standard.
Dec. 5	J. G. Mackres, Beloit	Artificially bleached.
1922		
Jan. 4	Berlin Farmers Co-operative Association, Berlin	No foreign starch.
Feb. 24	Lewis Store, Gays Mills	Commercially pure.
Feb. 27	J. Q. Daniels, Babcock	Commercially pure.
Feb. 27	Powers & Patterson, Oshkosh	Bleached with nitrogen peroxide.
Mar. 8	Mr. Johnson, Madison	Bleached with nitrogen perlxide.
Mar. 8	Mr. Johnson, Madison	Bleached with nitrogen peroxide.
Mar. 13	J. E. Ralston, Beloit	Not bleached.
Mar. 13	J. E. Ralston, Beloit	Not bleached.
Mar. 13	J. E. Ralston, Beloit	Not bleached.
Mar. 23	L. S. Dell, Madison	Bleached with nitrogen peroxide.
Mar. 23	L. S. Dell, Madison	Not bleached.
Mar. 27	C. V. Peterson, Rice Lake	Commercially pure.
May 2	W. J. Geiger, Monroe	Bleached with chlorine.
May 24	L. S. Dell, Madison	Bleached with nitrogen peroxide.
June 8	Direct Supply Co., Madison	Bleached with chlorine.
June 8	Direct Supply Co., Madison	Bleached with chlorine.
June 17	Mrs. J. Mintzlaff, Horicon	Wheat Flour.

LINSEED OIL

Linseed Oil—Submitted Samples

Date	Submitted by	Remarks
1921		
July 7	John E. Nuzum Sons, Viroqua	Free from adulteration.
Aug. 25	Fred Burdick, Baraboo	Standard.
Sept. 12	O. M. Elden, Amery	Free from adulteration.
Sept. 12	E. Schuman, Galesville	Free from adulteration.
Sept. 15	H. P. Christensen, Royalton	Adulterated.
Sept. 26	H. P. Christensen, Royalton	Not standard.
Oct. 8	N. H. Suttle, Lancaster	Standard.
1922		
Mar. 3	E. R. Coleson, Turtle Lake	Standard.
April 21	R. N. Hoskins' Sons, Lancaster	Pure linseed oil.
April 21	Wm. Laskowski, Turtle Lake	Free from adulteration.
April 21	R. N. Hoskins' Sons, Lancaster	Pure linseed oil.
May 2	Harry Skorstad, Blair	Pure linseed oil.
May 22	Thomas Clockesy, Fond du Lac	Pure linseed oil.
June 6	Knauf & Tesch Co., Chilton	Pure linseed oil.
June 23	Herman Witt, Edgerton	Standard.

MISCELLANEOUS PRODUCTS

Date	Bought for	Bought of	Manufacturer or Jobber	Remarks
1921				
July 8	Whole Cherries	Peth Candy Co., Wausau	Rheinstrom Bros., Cincinnati	No benzoate of soda.
July 25	Dill Pickles	W. D. Kenzie, Beloit	Adolph Gohl Co., Chicago	No benzoate of soda.
Aug. 4	Turpentine	Knutson Hardware Co., Blair	W. Fausche, La Crosse	Standard. Probably wood turpentine.
Aug. 4	Turpentine	Herried Bros., Blair	Spence-McCord, La Crosse	Standard. Probably wood turpentine.
Sept. 15	Dates	The Fair Store, Mosinee	Elliott Commission Co., Wausau	Decomposed; buggy; dirty; unfit for food.
Sept. 20	Canning Compound	Samuel Huffman, Richland Center	Mrs. W. T. Price, Minneapolis	Boric acid present.
Sept. 21	Canning Compound	A. N. Clark, Richland Center	Mrs. W. T. Price, Minneapolis	Boric acid present.
Sept. 27	Crushed Strawberries	Arthur A. Rever, Stratford	Blanke Baer Ext. & Products Co., St. Louis, Mo.	Not standard.

Oct. 4	Crushed Strawberries	F. R. Hjertberg, Amherst	Cincinnati Ext. Wks., Cincinnati	Preserved with benzoate of soda.
Oct. 15	Catsup	Malic Mercantile Co., Milladore	Thomas Paige, Albion, N. Y.	No benzoate of soda present.
Oct. 17	Waconia Pure Sorghum Syrup	Ed. Wolf Merc. Co., Hillsboro	Waconia Sorghum Mills, Waconia, Minn.	No adulteration found.
Oct. 21	Thousand Island Dressing	F. A. Nehs, Baraboo	A. E. Wright, Evanston, Ill.	Found to contain benzoic acid.
Nov. 18	Freeze em Pickle	Wm. Altschwager, Columbus	B. Heller & Co., Chicago	Probable combination of sodium chloride and potassium nitrate.
Nov. 18	Hamburger	Wm. Altschwager, Columbus	Wm. Altschwager, Columbus	No sulphates present.
Dec. 8	Blueberries	A. N. Davidson, Madison	Pleasant River Canning Co., Columbus Falls, Maine	Contained worms.
1922				
April 5	Sausage	Universal Grocery Co., Monroe		High in moisture.
April 25	Red Pepper	Acme Packing Co., Green Bay		Contains foreign matter, dirt, sticks and strings. Evidence of not having been properly kept. Unfit for human food.
April 25	White Pepper	Acme Packing Co., Green Bay		Badly contaminated by mice. Filthy. Unfit for food.
April 25	Greek Sage	Acme Packing Co., Green Bay		Contains an excessive amount of crude fiber.
April 25	Mustard	Acme Packing Co., Green Bay		Unfit for human food.
April 25	Paprika	Acme Packing Co., Green Bay		Badly contaminated by mice. Unfit for food
April 25	Mace	Acme Packing Co., Green Bay		Badly contaminated by mice. Some hair strings, pieces of wood and lead found Unfit for human food.

SUBMITTED MISCELLANEOUS PRODUCTS

Date	Kind	Submitted by	Remarks
1921			
July 1	Skim Milk	Windsor Bristol Dairy Co., Sun Prairie	Fat .17 per cent.
July 2	Skim Milk	Windsor Bristol Dairy Co., Sun Prairie	Fat .18 per cent.
July 5	White Lead	E. R. Hicks, Oshkosh	Probably an excess of carbonate.
July 5	White Lead	E. R. Hicks, Oshkosh	Total lead as basic carbonate, 99.24%. Works smooth with linseed oil.
July 5	White Lead	E. R. Hicks, Oshkosh	Total lead as basic carbonate, 98.73%. Works smooth with linseed oil.
July 25	Spirituous Liquors	A. F. Murphy, Marinette	Alcohol by volume, 32.50 per cent.
Aug. 4	Dilute Coffee	Dr. H. J. Westgate, Rhinelander	Tested for arsenic. None found.
Aug. 15	Mixed Paint—Gray	Stoley Nelson, Stoughton	Purchased for white lead in linseed oil, gray tint. Found to be badly adulterated with sand and clay and the linseed oil in which the pigment is suspended was found to be adulterated with a heavy mineral oil and kerosene.

Submitted Miscellaneous Products—Continued

Date	Kind	Submitted by	Remarks
1921			
Sept. 2	White Powder	H. F. Wasmundt, Barronett	Tested for arsenic. None found.
Sept. 13	Pork Sausage	Robert Warner, Plymouth	Larger sausage: Contains added starch. Smaller: No added starch.
Sept. 13	Barn Paint	R. A. Van Adestine, Manawa	Adulterated. Has had mineral oil added to it.
Sept. 17	Hamburger Steak	Lyle Fowler, Columbus	Free from chemical preservatives.
Sept. 20	Eggs in Shell	G. A. Servis, Green Bay	Egg was decomposed.
Sept. 20	Buttermilk	J. E. Messerschmidt, Madison	Tested for alcohol. Trace found.
Oct. 18	Milk	E. A. Babcock, Madison	Standard.
Oct. 31	Sorghum	Wm. Wickelman, Somerset	Standard. No adulteration found.
Nov. 10	Oysters	Mose Nelson, Madison	Oysters sour and indications of added water found.
Dec. 2	Boiled Cheese	R. C. Kielsmeier, Milwaukee	Made from skim milk.
Dec. 2	Cooked Cheese	R. C. Kielsmeier, Milwaukee	Made from skim milk.
Dec. 5	Molasses	Rice Lake Grocer Co., Rice Lake	Contained traces of sulphur dioxide.
1922			
Jan. 14	Milk	Ernest J. Stoeber, Madison	Tested for acidity. Found to contain .144 of 1%.
Jan. 15	Bread	C. J. Kremer, Milwaukee	Acidity, 1.34%; Ash, 1.36%.
Jan. 15	Bread	C. J. Kremer, Milwaukee	Acidity, 1.32%; Ash content, 1.28%.
Jan. 15	Bread	C. J. Kremer, Milwaukee	Acidity, 1.60%; Ash, 1.64%.
Jan. 16	Lemon Extract	Eimon Mercantile Co., Superior	Standard.
Jan. 17	Union Suit	C. A. Johnson, Brantwood	Cotton 89.29%.
Jan. 17	Prize Cheese	Harry Klueter, Madison	Not standard. High in moisture.
Jan. 19	Sorghum	Frank Stankey, Mondovi	Deficient in solids.
Feb. 14	Whole Milk Powder	C. J. Kremer, Milwaukee	Found to contain 28.02% fat and 1.28% moisture.
Feb. 14	Milk Powder	C. J. Kremer, Milwaukee	Found to contain 28.56% fat and 2.90 per cent moisture.
Mar. 6	Self Rising Buckwheat Flour	Geo. Warner, Madison	Tested for moisture and found to contain 13.80%.
Mar. 6	Self Rising Buckwheat Flour	Geo. Warner, Madison	Tested for moisture and found to contain 13.66%.
Mar. 6	Self Rising Buckwheat Flour	Geo. Warner, Madison	Tested for moisture and found to contain 12.48%.
Mar. 17	Lard	F. C. Rath, Madison	Contains foreign fat.
Mar. 26	Perfecto Self Rising Pancake Flour	Geo. Warner, Madison	Tested for moisture and found to contain 7.65%.
Mar. 26	Self Rising Buckwheat and Wheat Flour	Geo. Warner, Madison	Tested for moisture and found to contain 7.95%.
April 3	Stanz's Select Cream Cheese	H. B. Stanz, Milwaukee	Found to contain 39.70% moisture and 45.3% fat.
April 3	Neufchatel Cheese	H. B. Stanz, Milwaukee	Found to contain 52.32% moisture and 25.65% fat.
April 12	Condensed Milk	E. Babcock, Madison	Standard.
April 12	Condensed Skim Milk	E. Babcock, Madison	Found to contain .26% fat and 24.97% total solids.
April 21	Condensed Milk	Farmers' Store Co., Eau Claire	Standard.
April 21	Condensed Milk	Farmers' Store Co., Eau Claire	Standard.
April 21	Candy Easter Eggs	Dr. F. O. Bruneckhorst, Hortonville	Tested for arsenic. None found.

April 27	Vanilla Extract	Peacock Creameries, Fennimore	Pure Vanilla Extract.
April 28	White Paint	Luckey & Lanz, Madison	Mostly, if not wholly, a mixture of white lead and zinc oxide.
May 3	Colby Cheese	Harry Klueter, Madison	Contains more moisture than is permitted in cheese known as American or cheddar cheese.
May 22	White Lead	Thomas Clockesy, Fond du Lac	No adulteration found.
May 24	Compound Extract of Vanilla	F. J. Rickert, Milwaukee	Contained a small amount of vanilla and an appreciable amount of coumarin. Not a compound extract of vanilla.
May 24	Red Barn Paint	August Daberkou, Sechlerville	Badly adulterated with mineral oil.
June 1	Salt	Markesan Canning Co., Markesan	No adulteration found.
June 1	Salt	Markesan Canning Co., Markesan	No adulteration found.
June 1	Salt	Markesan Canning Co., Markesan	No adulteration found.
June 7	Liver Sausage	G. A. Servis, Green Bay	Found to be very high in lactic acid. Unmistakable evidence of spoilage.
June 7	Part of a Wiener	G. A. Servis, Green Bay	Good sized piece of dirt but am unable to identify.
June 9	Ice Cream Mix	J. E. Boettcher, Madison	Tested for percentage of fat. Found to contain 12.56%.
June 15	Meat	W. E. Buckley, Redgranite	Arsenic—none; Strychnine—much.
June 19	Ground Ginger	Elmer H. Groth, Milwaukee	No adulteration found.
June 19	Part of an Auto Cushion	John F. Baker, Madison	Steam distillation of material cut into fragments. No kerosene or gasolene found.
June 20	Earth Material from Well Drill	Paul N. Korb, Fairwater	No petroleum in evidence. Much iron in sample.
June 21	Spring Water	E. R. Kramer, Polar	Much iron present.

SACCHARIN PRODUCTS

Maple Syrup—Submitted Samples

Date	Submitted by	Remarks
1921		
Sept. 10	H. M. De Golier, London	Free from adulteration.
1922		
Feb. 7	A. C. Robarge, Rice Lake	Slightly below standard in total solids.
Feb. 9	Carl Baer, Baraboo	Standard.
Mar. 28	Albert Wickern, Baraboo	Standard.
Mar. 28	Albert Wickern, Baraboo	Badly below standard in total solids.
Mar. 29	Lela Pinnow, Palmyra	Genuine maple syrup.
April 3	W. L. Tilton, Chippewa Falls	Not standard. Contains excessive amount of water.
April 3	Fred Jones, Richland Center	Genuine maple syrup.
April 14	H. C. Bartman, Marshfield	Standard.
April 21	Dorchester Co-operative Co., Dorchester	Genuine maple syrup.
May 2	J. H. Pomeroy, Wausau	Standard.
May 22	Mrs. C. Hagen, Hortonville	Standard.
June 1	J. H. Pomeroy, Wausau	Below standard in total solids.
June 28	Harry Klueter, Madison	Standard.

Sugar—Submitted Samples

Date	Submitted by	Remarks
1921		
Aug. 27	Mrs. W. Kelsey, Whitehall	Standard.
Sept. 15	F. A. Ritzke, Hortonville	Standard.
Oct. 31	G. C. Windross, Abrams	Standard.
Nov. 5	Mrs. William Boyd, Sturgeon Bay	Not standard. Low in sucrose.
Dec. 31	Leo Mueller, Mayville	Standard.
1922		
Feb. 18	John A. Thiel, Mayville	Standard.

Honey—Submitted Samples

Date	Submitted by	Remarks
1921		
Oct. 13	F. A. Stenberg, Amery	Free from adulteration.
Oct. 13	Wm. Moore, Ft. Atkinson	Free from adulteration.
Dec. 7	R. L. Siebecker, Madison	Standard. No adulteration found.
Dec. 22	R. I. Hazard, Poynette	No adulteration found. Standard.
Dec. 22	A. C. Mommsen, Kendall	Standard. No adulteration found.
1922		
Jan. 25	Mrs. L. C. Wolf, Kaukauna	Free from adulteration.
Feb. 23	C. D. Adams, Madison	Standard.
Mar. 6	Mrs. Wm. Klein, Lomira	Free from adulteration.
Mar. 28	Fred Frusher, Madison	Standard.

VINEGAR

Vinegar—Submitted Samples

Date	Submitted by	Grams acetic acid 100 cc.	Remarks
1921			
Sept. 6	Henry Kemp, Clinton	4.89	Standard.
Sept. 13	Stanley E. Sand, Mauston	0.765	Not standard.
Sept. 13	Stanley E. Sand, Mauston	3.36	Not standard.

Nov. 28	G. W. Phelps, Markesan	4.65	Standard.
Nov. 28	G. W. Phelps, Markesan	3.88	Not standard.
Nov. 28	G. W. Phelps, Markesan	4.62	Standard.
Nov. 28	G. W. Phelps, Markesan	4.46	Standard.
Nov. 28	G. W. Phelps, Markesan	2.30	Not standard.
Nov. 28	G. W. Phelps, Markesan	4.40	Standard.
Nov. 28	G. W. Phelps, Markesan	3.26	Not standard.
Nov. 28	G. W. Phelps, Markesan	5.40	Standard.
Nov. 28	G. W Phelps, Markesan	3.96	Not standard.
Nov. 28	G. W. Phelps, Markesan	4.21	Standard.
Nov. 28	G. W. Phelps, Markesan	2.30	Not standard.
Nov 28	G. W. Phelps, Markesan	2.92	Not standard.
Nov. 28	G. W. Phelps, Markesan	4.52	Standard.
Nov 28	G. W. Phelps, Markesan	5.92	Standard.
Nov. 28	G. W. Phelps, Markesan	5.59	Standard.
Nov. 28	G. W. Phelps, Markesan	1.46	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.63	Not standard.
Nov. 28	G. W. Phelps, Markesan	0.77	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.45	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.88	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.52	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.41	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.09	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.44	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.26	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.56	Not standard.
Nov. 28	G W. Phelps, Markesan	1.83	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.61	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.53	Not standard.
Nov. 28	G. W. Phelps, Markesan	1.34	Not standard.
Nov. 28	G. W. Phelps, Markesan		
1922			
Feb. 20	Evans Brothers, Oshkosh	6.35	Standard.
Feb. 20	Evans Brothers, Oshkosh	6.44	Standard.
Feb. 20	Evans Brothers, Oshkosh	6.59	Standard.
Feb. 20	Evans Brothers, Oshkosh	6.52	Standard.
May 27	J. A. Hamilton, Clinton	4.02	Standard.
June 29	F. C. Rath, Madison		

ANALYTICAL WORK DONE FOR THE STATE BOARD OF CONTROL, MADISON, WISCONSIN

Laundry Soap

Sample	Per cent moisture	Per cent ash	Per cent ash on moisture free basis	Per cent oleic acid	Residue insoluble in alcohol	Residue insoluble in water	Per cent sodium carbonate	Per cent sodium hydroxide
1	24.72	19.20	25.56	.22	11.66	6.23	4.79	.....
4	34.60	19.86	30.36	.37	16.23	.51	6.17	.....
10	30.10	16.23	23.22	.21	8.30	2.11	4.63	.....
13	26.40	17.40	23.64	.....	8.53	2.40	4.22	.007
18	30.49	16.50	23.73	.....	8.75	2.02	4.47	.02
24	33.70	19.04	28.71	.08	12.73	4.82	7.48	.....

Soap Powders

Sample	Per cent moisture	Per cent ash	Per cent ash on moisture free basis	Free alkali	Alcohol insoluble residue	Insoluble residue	Soluble silicate	Per cent sodium carbonate
6	17.10	64.76	78.11	None	60.10	.23	None	58.77
10	8.46	67.88	74.15	None	61.71	.22	None	60.09
12	32.08	49.89	73.45	None	45.32	.14	None	42.85
13	.....	.....	.....	.....	.....	.....	.....	82.13
19	13.55	63.81	73.81	None	58.69	.14	None	57.28
20	14.71	60.49	70.92	None	77.40	33.94	None	42.66

Soap Chips

Sample	Matter volatile at 105° C.	Per cent ash	Per cent ash on moisture free basis	Per cent oleic acid	Per cent sodium carbonate	Remarks
2	1.18	18.69	18.91	.31	.15	.....
13	2.08	18.24	18.62	.40	1.66	Alcohol insoluble residue completely soluble in water.
16	11.25	22.48	25.32	.16	5.87	.....
22	3.69	21.10	21.90	.32	1.89	Alcohol insoluble residue not completely soluble in water.
24	4.03	23.93	24.93	.27	2.72	Alcohol insoluble residue not soluble in water.

REPORT OF WILLIAM WINDER

Second Assistant Commissioner

HON. J. Q. EMERY,

Dairy and Food Commissioner.

Dear Sir: As Second Assistant Dairy and Food Commissioner, I am submitting to you the following report for the year ending June 30, 1922, showing the work done by me; also an expression of my view regarding the different phases of the work.

Considerable time was given to work in the office acting in an advisory capacity to the commissioner, especially in questions pertaining to the cheese factory and milk condensery work. The reports of cheese factory inspections were carefully examined with a view to giving advice and making suggestions pertaining to the granting of licenses and other questions relative to enforcement of the Dairy Laws. The inspection of milk condenseries required much time and was for the purpose of determining whether they were being operated in compliance with the law.

The majority of the condenseries are well kept and a high standard of sanitation maintained. Rough, rusty tanks were being used in a few instances that were unfit for the purpose of storing milk. Some pipe lines were found in a dirty condition. Cans used by patrons in delivering milk at a few condenseries were found to be unclean. In all instances, the faulty equipment was replaced or repaired, pipes put in a sanitary condition and the proper steps taken by the condensery management to have the patrons' cans kept in a sanitary condition.

Some time was given to training and working with newly appointed inspectors. Much work was done with inspectors in making reinspections in cases where it was anticipated that court action might result.

Many of the cheese warehouses in the state were visited for the purpose of inspecting cheese. Many samples were taken and submitted to the chief chemist for analysis. Numerous prosecutions were made for violation of the moisture law and for the manufacture of cheese containing less than 50 per cent of fat in the moisture free substance.

Improvement in cheese factories, cheese factory equipment, and the sanitary conditions in which they are maintained is largely due to work of the department through the inspectors in the field. That this work does not accomplish as much as is desired in the way of improvement must be admitted. The work of cheese factory inspec-

tion is to a large extent of an educational character and only in necessary cases are the drastic measures of prosecution and revocation of license resorted to.

Considering the work of the department from the standpoint of improved cheese factory buildings and better sanitary conditions it must be said that much has been accomplished. To appreciate to the fullest extent the benefits accruing to the cheese industry and to the state, it is necessary to be in a position to realize what conditions would be if inspection work were to be discontinued.

Having an intimate knowledge of cheese factory work and also of conditions as they exist in many factories, conditions that are revealed by reports of the inspectors and by inspections that I have made myself, I am forced to the conclusion, that the great beneficial results attained cannot be shown in a concrete and clear cut manner. Great as these improvements are, to view the work from this angle alone is to minimize the results of every effort of the department. It is regrettable, indeed, that only those intimately connected with the inspection work, consequently know that the great good we are accomplishing is in preventing a general retrogression into habits of carelessness conclusive to filth and insanitation and to the unfair practices of the dishonest. In the southwestern counties of the state especially, there are many cheese factories being operated that are entirely unsuited for the purpose of making cheese. Many of these factories were built thirty to forty years ago, when the supply of milk was small. They were built to accommodate the business of those days. Today, with two or three times as much milk, they are very much overcrowded and unsuitable, and consequently the best results cannot be obtained. Many curing cellars in factories making Swiss cheese are entirely too small for the output of today, and as a result, the cheese is forced hurriedly through the curing process and placed in the channels of trade in an immature condition with rinds soft, texture weak, and of such a character that serious damage is likely to occur in handling and shipping. It is only by constant urging and frequent resort to the law on the part of the inspectors, that many of these old factories are kept in even a passable condition. In some instances, factory operators have closed their doors rather than make improvements necessary to comply with the law. This is sometimes due to gross mismanagement and resulting in a lack of funds to keep the plant in repair. Some factories are forced out of existence by the keen competition of the city milk market; others by milk condensing plants, and by the sweet cream market. With a dwindling patronage and ever lessening income, factory men refrain from incurring expense, and this is especially noticeable in regard to keeping the building and equipment in such repair that it may be operated in a sanitary condition.

In many localities, cheese factories are being located so closely to each other that the supply of milk is so small that profitable operation is impossible. Factories receiving a large supply of milk

are usually kept in better repair and the equipment maintained in better condition than those factories running with small daily receipts of milk. In the small factories the amount of business done is too small to afford to pay a salary that will attract and keep in the business really competent makers. Establishing a factory in a community where another factory is already in operation is a serious blunder, means increased costs for manufacturing, and is a direct injury to the community and to the cheese industry of the state. It is true, that the character of the roads and the distance that the milk must be hauled must of necessity be considered, when a factory location is to be chosen; but these considerations should not blind those most interested to the greater importance of getting a sufficient supply of milk to operate efficiently and profitably.

What to do to improve the quality of Wisconsin cheese is a question that has concerned us since the earliest history of the industry in the state.

In the early years of the industry, various laws were passed with a view to improving the quality of the cheese and also for the protection and betterment of the entire dairy industry. As the years have passed, new laws have been added to the statutes and many rules, regulations and orders promulgated in a hope that they would result in a maximum of the finest cheese. Today, we find ourselves in as unsatisfactory a situation as probably has ever existed.

From a business standpoint it is not to be expected, that manufacturers will take the necessary time and extra milk that may be required to make the best cheese possible unless the price they receive for the same will in a measure reimburse them for the effort. In a country where the popular taste for cheese is so easily satisfied that the majority of cheese consumers do not discriminate between good cheese and poor cheese, improvement in quality is a most difficult thing to secure. The manufacturers and distributors naturally cater to the demand of the consumers and so long as the public taste is such that gassy, ill-flavored, and otherwise inferior cheese will be accepted by the consumer at the same price as for good cheese, little can be hoped for in the way of improved quality.

A well thought out and executed plan of advertising Wisconsin cheese would undoubtedly increase the demand. It is my opinion, that advertising should be of an educational nature so directed as to influence the taste of the consuming public, so that they will be able to distinguish between good cheese and poor cheese. The consumers should be so educated that they will recognize the flavor characteristics of good cheese. They should be taught that pinholes and accompanying flavors are indicative of unsanitary conditions in the production and care of the milk. People that cannot differentiate between good cheese and poor cheese consume cheese only in small quantities.

REPORT OF C. J. KREMER

Senior Food Inspector

HON. J. Q. EMERY,
Dairy and Food Commissioner.

Dear Sir: I have the honor to submit to you a report of activities of the Food Inspection Division for the term of 1921 to 1922.

In this report I endeavor to lay before you, not only the work actually done, but also conditions as they exist in certain lines in so far as the work of this department has contributed towards attaining them. I also try to point out to you, where situations were found which were unsatisfactory in that the public was not given or could not be given the protection to which they are entitled against questionable food products or against deception and potential fraud, suggested remedies. In the enforcement of food laws, due to progress or other changes in the production and marketing of foods, we continually find new phases, which perhaps, were not apparent when the laws were framed and are not covered by their terms.

Food inspection deals with all places where food is produced for sale to the public, or sold. It is not confined to ingredients of food, but extends to conditions under which food is manufactured and sold and which may affect its purity and wholesomeness. It also embraces the question of proper labeling, deals with misbranding, and the sale of articles for other than what they really are.

Some of the industries affected are required by law to obtain licenses, as bakeries, confectioneries, soda water bottlers, and cold storage warehouses; others do not, as meat markets, butcher shops, groceries, etc. While certain fundamentals and essentials affect them all, each industry has its own problems which we must help solve or solve as best we can.

Field Work

In the course of regular inspection work, many conditions are found which need correction. They may be such as are unlawful and directly insanitary, or others, that merely tend to create situations where food may be contaminated. Another group consists of places where specific requirements of the law are not, or but insufficiently, complied with. Requirements as to construction, toilets, dressing rooms, etc., are of the latter class. Inspectors give suggestive instruction as to what is necessary to be done in order to comply with the law in some places visited; in others, what is called for to avoid insanitary conditions; in other words, suggest preventative measures. Often they have to do with objectionable traditions and

bad habits of long standing. Instructions cover a wide range from location of premises and details of construction to conditions and personal habits of persons employed.

In the following table four thousand two hundred forty-four instructions are classified. The table shows instructions that were given, which in turn indicate condtions that called for them. It is to be noted that one thousand twenty-two establishments were in such state that inspectors had no criticism to offer.

TABLE SHOWING SPECIFIC INSTRUCTIONS GIVEN BY INSPECTORS

Instructions given	Industry				
	Bakeries	Confectioneries	Soda water	Canning	Meat markets, groceries
Whitewash or paint	87	44	27	6	40
Building to be repaired	42	14	13	14	33
Utensils to be repaired	25	6	1	15	55
Floor to be cleaned	47	14	1	.....	92
Utensils to be cleaned	33	23	5	53	409
Dressing place to be provided or cleaned	14	9	.....	2	.....
Flies to be kept out	10	10	10	8	34
Windows to be cleaned	10	2	1	1	11
Accumulated junk to be removed	29	6	6	10	47
Unclean habits to be discontinued	22	34	19	45	329
Vermin to be exterminated and kept out	14	3	.....	1	43
Toilet to be installed or cleaned	43	25	3	39	25
New equipment to be provided	3	2	14	17	24
Store rooms, cellars, etc., to be cleaned	23	13	46	65	186
Foods to be protected against contamination	82	24	8	2	1768
Totals	484	229	154	281	3096
No criticism to offer	284	170	.....	.....	668

Work in Relation to Filled Milk

During the year closed, the question of filled milk has been given considerable attention. For some time, I had observed that people often bought these compounds not fully understanding their character and composition. During the 1921 session of the legislature, I was directed by you to make an extensive survey of places in and conditions under which these compounds were sold. In compliance, I visited many stores in Milwaukee, Kenosha, Racine, West Allis, Green Bay, Manitowoc, and La Crosse, where my identity was not known and entered them as an ordinary purchaser would.

I found that some of the best stores in the state did not handle filled milk and claimed that it was an imitation of a genuine article and that, if purchasers understood the essential difference, there would be no demand for it. Others, so called cheap stores, cash and carry concerns, who are often patronized by poor people that try to save a cent or two, carry the compounds on the shelf with the genuine milk and have it placarded at a cent or two less than the genuine articles. Where the goods carry a price tag, I asked for a ten- or eleven- or twelve-cent can (as the case might be) of

evaporated milk. I would be given a can of compound, but in no case was I told that it was not evaporated milk. In other stores, I asked for a cheap can of evaporated milk and then would be given the filled article. Wherever a bill or a sales slip was made out in connection with the sale, the compounds were listed as "milk" by the clerk or whoever waited on me. I do not think that these people deliberately misrepresented the article to me. In fact, I believe that most of them believed the substance they sold me as milk really to be milk. I do not know how these people were brought to think the compound to be milk, how the thought became fixed in their minds, yet, it was there, and the fact that it was there, showed how insidious the conditions surrounding the manufacture and sale of this article are and how many circumstances combine to mislead people and cause them to deceive themselves. It further showed that the label on the can is not sufficient to overcome the combined circumstances that tend to mislead, and to prevent people from being defrauded, by not being sufficiently suspicious perhaps, but defrauded nevertheless. I believe that due to the fact that the compounds were kept on the same shelves in identical cans with similar labels (to compare "Silver Key," a compound, with "Golden Key," the genuine), they became gradually classed in the minds of nondiscriminating people with true evaporated milk and accepted as such by the poorer class who tried to make both ends meet and seldom read a label.

When the department had to prepare to defend the law prohibiting the manufacture and sale of filled milk in the state, food inspectors in other territories also made investigations in their respective districts and conditions were found to be about the same in every part of the state.

In their petition to the supreme court, the Carnation Milk Company and the Hebe Company, who attacked the constitutionality of the law, claimed, among other things, that they had created a market and use for their product Hebe entirely separate and distinct from the market and use of condensed or evaporated whole or skimmed milk. They had published a cookbook in which directions for the use of Hebe in the preparation of foods were given. To test whether or not the uses recommended for Hebe were, as claimed, separate and distinct from the use of milk, thirty-four different standard cook books by recognized authorities and of wide circulation were obtained and examined. They ranged from such as were compared with the formulas and recipes given for the same or very similar dishes in the various cook books and results were tabulated. A table so prepared was submitted to the referee at the hearing and received in evidence. It showed that not a single use had been created for Hebe where milk had not been used heretofore for the same or similar articles and that in practically every dish where directions for the use of Hebe were given, that article took the place of milk in some form. The tabulation compared five hundred eighty-two formulas and the following books were used in its compilation:

Us Two Cook Book, Economical Cooking, A Book for a Cook, Pillsbury, White House, Prove Recipes,—Corn Products Co., Price Baking Powder Co., Rumford Way, Corn Products Co.,—Karo, Calumet Baking Co., U. S. Dept. Agric., Bul. 1136, Easy Meals, New Cookery, Settlement Cook Book, The New Hostess of Today, Boston Cooking School Cook Book, A Thousand Ways to Please a Husband, Cooking for Two, Arnesen's Recipe Book, Manual for Army Cooks, 1916, Original Recipes,—Moxley's, Good Things to Eat,—Del Monte, Enterprise, Food and Household Management, Nature Cure, Practical Food Economy, How to Cook in a Casserole, Choice Recipes,—Walter Baker, Mapleine Dainties, U. S. Dept Agric., Bul. 717, U. S. Dept. Agric., Bul. 817, U. S. Dept. Agric., Bul. 526, U. S. Dept. Agric. Bul. 363, U. S. Dept. Agric., 256, U. S. Dept. Agric., Bul. 712, and U. S. Dept. Agric., Bul. 391.

Bakeries

Bakeries have been operating under the licensing system for fifteen years. In fact, bakeries and confectioneries were the first food industries licensed and inspected by the state. During that time there has been a gradual but quite a radical change for the better. It is manifested in many ways. While formerly basements, not to say cellars, seemed favorite places in which to establish shops, sunlit airy rooms are now usually built for this purpose. While formerly the roughest and cheapest kinds of floors, walls, and ceilings were considered good enough for bakeries, now the demand of bakers is for high grade material and finishings in rooms to be used as shops.

The character of the men operating bakeries shows a marked change. Their training and vision are broader. Their attitude towards the industry and the public is altered for the better. Many have come to realize that, when they began to prepare bread, an indispensable food, for the public, they thereby assumed certain specific obligations towards the community which other less essential industries did not share. They appreciate that it is their duty so to operate bakeries, that they give positive useful service to the public and not merely so to conduct them as to avoid becoming a public menace and nuisance. It is evident, that this attitude must reflect itself in greater discrimination in the selection of ingredients to be used. Nothing but high grade materials of good quality are considered in many shops. One shop has established a chemical laboratory in which raw materials are analyzed and tested before being used. Other bakeries submit samples to commercial laboratories and are guided by results of determinations therein. Still others purchase only ingredients of known uniform standards of quality and purity and in that way feel certain that their raw materials are of the best.

Improvements in the methods of manufacture are not less carefully studied and adopted. Many new machines have been installed and plants have enlarged and added new lines. One instance may be cited showing not only striking progress in advanced ideas, but also a firm confidence in the abiding prosperity and progress of the industry in Wisconsin. In this plant, the air is taken from the outside, washed, tempered, conditioned to suit the particular use to

which it is put. In the flour storage room in the basement, the air is conducted to points below the platforms on which flour is stacked so that a constant current of fresh air is continually flowing upwards and around the flour bags, properly aging the flour. Thus, clean air of correct temperature and conditioned as to right humidity for the particular purposes intended, is carried into dough rooms, proofing cabinets, cooling devices, and even over bread wrapping machines. The same holds true of water that is used. It is tempered just to the desired degree and conducted in pipes to the place or machines where it is needed. Automatic controls are used wherever possible. If a certain quantity of flour is desired in a mixer, the control is set at the required number of pounds which are delivered, sifted and aerated, to the mixer no more and no less. Water is also delivered in the same manner. A control is provided on the mixer, governing revolutions of the mixing arms. This is set at the number which has been found to be best for the particular dough, and when the number of revolutions has been made, the mixer stops. The dough is then automatically transferred into a trough where it is carefully weighed so as to check against any possible error in its preparation. A ticket is attached to the trough showing the hour and minute. In due time this dough is separated into individual loaves, proofed in cabinets, also controlled as to exact temperature and humidity, and on racks suspended on trolleys brought to the travelling oven, which is a wonder of human ingenuity and represents a fortune as to cost. Loaves of dough are fed on the moving hearth, at one end, and come out, as if by magic, at the other in endless succession, baked to a golden brown. In part of the baking chamber a high degree of humidity is maintained and in other parts drier heat. Precision, indicating, and delicate recording devices are maintained in many rooms, about this oven, which are marvelous. A speedometer shows how fast the hearth travels, one point at a device shows temperature in one part of the baking chamber, another in a different one and still another in the third. Temperature at the different fire boxes is shown as well as temperature in chimney.

While this bakery in its equipment cannot be taken as typical for Wisconsin, the spirit of progress and the determination to make good, wholesome, nutritious bakery goods in a sanitary manner is typical of the majority of Wisconsin bakeries and a common characteristic of them regardless of the size of the plant. Nor must it be assumed that automatic control can ever wholly take the place of good individual judgment in producing best results.

I am pleased to note that bakery goods, due to their high quality, are being shipped out of Wisconsin into many other states, and I feel that the state, as well as bakers, have reason to be proud of this fact.

It would not be true were I to say that all bakeries or bakers are of the highest type. There is still room for great improvement in

many. Constant urging on the part of inspectors is necessary with some and even prosecutions in the courts can not be wholly avoided.

Further, in many cake shops, there are too many articles found that may look fine, but are of doubtful food value. I hope that our department will find it possible to make a careful investigation of this feature so as to be able to eliminate all frauds and get other articles in their proper place.

Confectioneries—Candy Factories

Confectioneries have operated under an inspection and license system since 1907. Licenses have been issued by the dairy and food department since 1917.

The law was enacted that unsanitary conditions which existed in some candy factories at that time might be abolished and that confectioneries might be kept forever free from them. Inspection was provided to see to it that insanitary conditions did not prevail. The law also contemplated that the inspection be a service to the industry. Therefore, inspectors not only insist that conditions which are unlawful be abolished, but suggest that such as are merely passable be improved and those that are good be made still better. We must look carefully to compliance with the terms of the law not being less mindful of improvements made and progress manifested.

In the confectionery industry advancement is noted on a large scale. The past year has seen the realization of many improvements planned and holds out great hopes for the future. Wonderful progress has been made in the construction and enlargements of up to the minute plants. What is most satisfactory is that special stress has been laid upon sanitary conditions. More fresh air, more sunlight, less dust, less vapors, less extremes of heat and cold have been the slogan. More and more attention is being paid to the health of persons employed and whatever tends to increased convenience and comforts for workers is carefully considered and installed in many establishments. This is gratifying, for, without healthy men and women working under conditions that are pleasing, high standards of sanitation cannot be maintained in food factories. Some establishments have welfare departments in charge of persons specially trained in sanitation and hygiene, who often not only look after the health of employes while in the factory but also help to improve conditions in their homes.

Making a few comparisons, we find that the old, dirty and smoky coke furnace is replaced by blast gas furnaces, electrical heating devices, and steam and vacuum kettles. Mixing and stirring devices, dipping and depositing machines, cutting and wrapping machines, elevators and conveying systems, automatic packing tables, and many other mechanical contrivances have practically eliminated, in many factories, the handling and touching of individual pieces of candy by human hands. Formerly, "chocolate centers" were made by putting sugar and other ingredients in a copper kettle to be boiled on the coke furnace, then spilled on to a slab, left to cool, stirred

with a spatula until it "creamed," scraped into a tub, then taken out and warmed again on the furnace, dipped into a funnel shaped holder and poured into impressions made in starch. Now, sugar is brought to huge steam kettles by automatic carriers, there converted into syrup of proper density, pumped in a constant stream to an automatic vacuum cooker, which evaporates the moisture to the right degree and which feeds the boiled sugar in a ribbon, more than three feet wide, on to the sides of an artificially cooled, huge cylinder, which revolves like a ferris wheel, where the viscous mass is cooled and automatically scraped into one end of an agitator to be forced out at the other, creamed just right. It is then conveyed to another steam kettle where it is heated and flavoring material added, whence it flows into a depositing machine which forces just the right quantity into previously prepared forms.

The department did not find cause to raise objections to raw materials used in confectioneries. I believe these to be selected with great care and that nothing in violation of any law of the state is knowingly used. As many of the ingredients used in candy making are of a perishable nature, many factories have installed refrigerating systems whereby they take care of their raw materials, as well as finished products, so as to keep all in splendid condition until they reach the consumers, if properly cared for by retailers.

It is not too much to say that the candy industry has grown into one of the principal industries of the state of Wisconsin. There is no state in the union and no insular possession of the United States where the products of Wisconsin candy factories may not be found. In the number of concerns engaged in the manufacture of candies and in the volume of candy made, Milwaukee ranks third of all cities of the entire United States, and Wisconsin candies have earned and received highest national recognition.

Chocolate Factories

Under the terms of the law, any place where candy, sweetmeats, or any other food product of which chocolate is the principal ingredient is manufactured, is a confectionery and must obtain a license from the dairy and food department. Since the law was passed the chocolate industry has developed wonderfully. If I were to select any one food industry where the average conditions as to sanitation and all that the word implies were the highest, I would name the chocolate industry. One reason why the standard of sanitation is so high is that the industry came under state supervision and was licensed while still relatively young and unsanitary conditions were not permitted to develop.

In the year 1894, in a modest frame building in Milwaukee, the first chocolate was made in Wisconsin. Here was the pioneer establishment of the state, in fact, west of Philadelphia. Now there are four establishments grinding cocoa beans, including one that was

only recently completed and which is a model, modern in every appointment, and apparently as perfect as human skill and ingenuity can make it.

Comparatively few people have a correct opinion of the importance of this industry to the state and especially to the dairy industry. One of the factories, during the year 1921, produced a total of more than four and one-half million pounds of chocolate and cocoa. It is safe to assume that during 1922, the total production will exceed twenty million pounds. Two-thirds of this is estimated to be milk chocolate. There is no standard for milk chocolate in this state, but according to United States government regulations it must not contain less than 12 per cent whole milk solids. On this basis, the chocolate factories furnish to the dairy industry a market for many million pounds of fresh, dry, and condensed whole milk and cream.

The products of chocolate factories are offered to the public by them in many attractive forms, plain, sweetened, or combined with nuts or milk, in bars, "slabs," or other shapes. Several tiny morsels can be bought by children for a penny and I believe that for a satisfactory confection, combining high nutritive value with moderate cost, Wisconsin's milk chocolate bars rank very high.

Ice Cream Plants

From a side line of candy makers, which ice cream formerly was, usually housed in basements none too clean, ice cream making has developed under a license system, since 1917, by leaps and bounds. The standards as to materials to be used in ice cream making, as well as the sanitary requirements, enacted by law are high. The legislature of 1919 provided for the washing and returning of cans in which ice cream had been delivered, within a certain time, and this law has corrected many abuses. During the session of 1921, definitions and standards were modified so as to meet advanced ideas. The amended laws provided that not more than a certain quantity of air or other gas could be incorporated in and sold with ice cream. In other words it limited the "swell."

The operation of a modern ice cream plant is a revelation to many people. I believe that we have the most modern, best equipped factory in the entire country right here in Wisconsin and we may well be proud of it. In an ideal modern plant the raw materials, especially the cream, are subjected to a rigorous analysis before being used. Tests are made for butter fat, solids, acidity, and temperature; bacteria counts are made on cream that is received from creameries, so as to insure proper handling at that end. Mixture for each batch is determined in the laboratory, based on the findings of the material on hand. Ingredients to be used are united, combined and homogenized into a compound that is uniformly blended throughout. This is then pasteurized in glass lined vats, cooled, then conducted into storage tanks, where it is held at a temperature of 32 degrees above zero until it flows into the freezer.

"Freezing consists of lowering the temperature of the mix while it is being violently agitated by "dashers" traveling through it at high speed, and ingeniously constructed so as to keep every component part of the mix in rapid motion. This causes air or gas cells to form in the mix and the walls of these cells become firmer as the temperature gets lower. The incorporation of air and the lowering of temperature must be nicely adjusted to each other. The best adjustment has been and still is the subject of much study. Delicate controlling devices are being installed. Thus, when the temperature of the mix has been sufficiently lowered, a red light shows at the freezing apparatus and when the desired quantity of air has been reached, a green light appears. A valve is opened at the lowest part of the freezer and the ice cream, still somewhat fluid, is filled into cans or forms, bricks or other shapes; or, it may be conducted to hoppers or spouts out of which it is filled into the desired receptacles. When in cans or forms, it is conveyed into "hardening" rooms where it is kept at a temperature of about ten below zero until delivered to merchants or consumers.

The utmost care as to cleanliness and sanitation is taken throughout. Floors are flushed, cans and utensils washed, scoured and sterilized. Methods of working, such as filling the unhardened cream into tin brick molds which afterwards must be dipped in water and possibly blown into to get the hardened bricks out, that cannot be carried on without causing more or less slop, are being eliminated and replaced by better ways. The slop and mess formerly connected with the crushing of ice and the use of ice and salt have been done away with by the use of mechanical refrigeration in the manufacturing and storing of ice cream. However, ice and salt are still used when the product begins its journey to the retail merchant or consumers.

The ice cream industry is of no small importance to the dairy interests. One concern in the state, during the past year, used six hundred and fifty-three thousand eight hundred gallons of 36 per cent cream and the total cream used within the state by ice cream makers will exceed six million gallons. In conclusion I wish to quote what one enthusiastic manufacturer said to me.

"The manufacturer has realized that ice cream is not only a food product, but one of the most valuable food products offered the public today. Also he has realized that the children and young people were, if anything, the largest consumers, and the knowledge that ice cream played a large part in the upbuilding of these young people has made the manufacturer doubly anxious to have his product right.

"It is really a marvelous unfolding of an industry, from what, ten years ago, was looked upon as merely a pleasing dessert and luxury, until today when the true food value of ice cream is appreciated and it is not only distinctly sold as a food, but on comparison, is found dollar for dollar and pound for pound, to be among the most valuable of foods purchased by the public, more valuable in nourishment, dollar for dollar, than practically anything but straight milk."

Bottling Plants

During the year, bottling plants have been inspected and considerable progress has been noted.

Rules and regulations provided for in Section 1401b—11 of the statutes were revised and with a personal appeal sent to each bottler in the state. In the revised rules, written guarantees from the dealer or manufacturer of any color used in a soda water factory that the color is free from deleterious substances, and, in the case of coal tar colors, they are certain certified colors and no others, are required to be kept on file. By these means, it will be less complicated to check up on the colors used and to eliminate such as do not comply with the law.

Regulations as to proper cleaning of bottles were strengthened, making provisions that such methods may be used as are best adapted to problems existing in the individual establishments. The keeping or storing of chemical preservatives, the use of which is prohibited by law, was declared to be objectionable.

We have begun to give closer attention and study to water used by licensees. I feel that along these lines there may be considerable work to do as it is usually assumed that a source of supply that has at one time been found or considered unobjectionable will continue to be pure indefinitely, which is not at all the case.

Canning Factories

As in former years, special attention was given these industries. Although there are quite a number of foods canned, such as corn, beans, beets, sauerkraut, pork and beans, and fruits, peas are the chief item.

The pea canning season is short, hence the work on part of the operators is intense during the brief, but all important, period of the "pack." There is no time for leisurely considering any problem. All in charge are working under a tension and a stress that are quite noticeable, a factor that must be taken into account. Peas mature according to the weather and the outstanding problem is how to get them into the cans promptly.

A field that properly matures on a certain day is not quite right the day before nor can it very well be left until the next day. Peas, once cut, should be in the cans in a very short time, not exceeding a few hours. Pea canning is practically continuous and automatic. As fast as a load of vines is cut, it ought to go to the viner, where the peas are separated from the vines and pods by special machinery and begin their travel on conveyers of various types, through the several stages of cleaning, sorting, picking, blanching, i. e., parboiling, until they are automatically measured into cans, the proper quantity of brine at a high temperature added, and hurried to the closing machine, each can being supplied with a cover on the way. In the closing machine, they linger for a moment, a second or less,

to be hermetically sealed, and are then hastened on to be collected in large iron crates, placed in retorts and heated under pressure to sterility. Then they are taken out and on conveyors conducted through a tank of cooling water, and finally arrive at the warehouse, snapping and cracking as the atmospheric pressure forces back the ends which had been distended by the heat in the can in the vacuum created by the cooling of the contents.

A breakdown or a holdup along the line is apt to throw the entire operation out of adjustment. As we inspectors gain experience in the work and a clearer insight into the problems involved, we realize more and more not only the necessity of inspection, but also the necessity of close cooperation with the men who direct the industry.

A few of the older buildings were poorly designed and constructed in a manner to indicate that they were intended for temporary use only and not as permanent homes for a great and growing canning industry. Some appear to have been built by promoters or persons with but a hazy idea of the problems involved, or else such as were chiefly interested in their commissions.

While some of the newer places may be considered models, others suggest poor judgment in planning and a lack of appreciation of the many problems of the canning industry.

Some of the appliances and equipment used are also often open to serious criticism. Many are built with inaccessible corners in which waste material accumulates, which is difficult to dislodge. Especially is this true of certain grader hoppers and picking tables. Time and time again have inspectors found masses of filth that had collected, soured and decayed, in corners of the framework of picking tables and grader hoppers. Obscure corners and places that cannot be reached by a sharp stream of water under pressure, and a brush, if necessary, ought not to be tolerated. As most of the cleaning about canning factories is done with a stream of water, followed by a brush, if necessary, and a steam hose, it follows that all parts of rooms, machines and equipment should be arranged so as to be readily accessible to a jet of water under pressure, a good brush in the hands of husky persons, who are willing to apply it vigorously and effectively, and lastly to the steam hose. Sufficient elbow room should be allowed for persons manipulating steam or water and hose, and good light is a first essential. Even with these arrangements, cleaning will not be done well unless there is an abundance of water and steam, sufficiently high pressure in both lines, and ample hose.

It is greatly and earnestly to be desired, that designers of pea cleaning and canning devices bear in mind that no such device or machine can be considered satisfactory unless it can be easily and perfectly cleaned.

Another problem that enters into canning operation is the type of persons available for work for such a short period. In some places, at times, unsteady and floating workmen only are available without discipline or training fitting them to do well the work at hand. Time is too brief for the educational efforts necessary for

good training even if employes were amenable and agreeable to such training. The situation calls for personal and direct observation on the part of superintendents, and a firm determination not to tolerate anything that is not right should be the guiding policy in every factory. A good superintendent must be incessantly vigilant and uncommonly tactful.

It is generally conceded by students of factors relating to sanitation in canning factories, that cans should be washed and rinsed before filling. Some factories have washers that are quite efficient; others are contented with make-shifts. Even those are often not used for various reasons. Conditions in this regard are not satisfactory and it is hoped operators will give this question serious attention before the next pack.

During canning operations, there is a great deal of offal. Pea vines, pods, etc., are put into silos or stacked and used for feeding purposes. Broken peas, rejects of washing devices, cullings from the picking tables and spillings from conveyors are collected, and while still fresh and sweet, used as feed. If that is not done, they are likely to become troublesome around the factory. There are millions of gallons of wash water and other fluid waste. As the weather is usually warm during canning season, such waste sours, ferments and decays quickly, unless properly treated. It has a peculiar, intensely offensive odor when allowed to become stagnant. The question as to how this waste may be treated and disposed of satisfactorily has not yet been answered. Inspectors have been fairly successful in their endeavor to prevent nuisances in and about plants, but efficient and economical devices for disposal of waste have been installed and are in operation in only a limited number of factories.

On the whole, while inspection has not brought about ideal conditions and perhaps never will and never can do so, nevertheless, it has been an important factor in gaining improvements. I am of the opinion that the work done in the past season will result in many betterments for the next. I would like to see a conference of all operators of canning factories and our department held in Madison during the coming winter, where all conditions could be fully and frankly discussed with a view of ascertaining and promoting whatever will best serve the state and the industry.

Sauerkraut Factories

Preservation of food by fermentation is an activity that has been practiced in households for generations, but it is not fully understood even now. The work has been shifted to a great extent from the household to factories.

Cabbage heads are brought in from the farms, carried by conveyors to top floor of factory, where men or women trim them by cutting off the stalk and removing green leaves and such as are unclean or show signs of rot or decay. In some factories, the heads are cut in two, exposing center of core; in others they are simply "cored"

by running a short revolving knife through the center. They then go to the cutting table and are fed on a rapidly revolving disc of knives which cut the cabbage in shreds that fall into a hopper suspended from the ceiling on the floor below. The bottom of the hopper is fastened with hinges and a catch similar to a door. When there is a sufficient quantity in the hopper, the catch on the bottom is released, and the material falls into a cart constructed with one removable end, and conveyed to large wood keeves into which it is "dumped" by opening the end.

In the vat itself, there are two or three men wearing long shafted rubber boots, who spread the cabbage evenly, sprinkle salt on it and stamp it down by walking on it until the next cartful arrives or until the vat is filled, when it is topped. Practices of "topping off" the filled vats are not uniform. Some use a layer of cabbage leaves, which seems to be objectionable on account of decay which may set in and dirt which seems unavoidable. Others use cloths for this purpose. These appear to be better adapted for the reason that they may be made scrupulously clean before using, are not subject to decay, and may be removed without as much dirt getting on the food below as is unavoidable, if leaves are used.

Then boards cut so as to loosely fit in the top of vats are placed upon the cabbage and weighted down. In some factories, large field stones are used as weights. Others use concrete blocks, or if nothing is available, barrels filled with water.

After several days vigorous fermentation has gone on inside of the keeves, boards, weights, and all are raised, foam is oozing out between planks, and cabbage may be forced out and exposed to the air. When this has been going on for some time, the violent gas fermentation ceases, the pressure from the vat becomes less, the shredded cabbage has become softer, and the mass settles under the weights that have been piled on. While it is apparently quiet and pressed below the level of the salt brine, a scum will form on top of the fluid. In spots, there may be black masses of moldy growths with offensive odors. In some factories, the scum is removed and top of vats kept fairly clean; in others it is allowed to remain until the finished product is taken out. From a standpoint of cleanliness, uneven stones that are none too clean and never can be well cleaned, although covered with slime, are objectionable; when such stones are placed on top of vats, numerous corners are produced where putrefactive fermentation may go on and cannot be cleaned away. A good way appears to be to have cylindrical blocks made of concrete which, being round, can be readily moved. They should be placed on runners, three by four inches, laid at right angles on cover boards. When that is done, all objectionable accumulation can be readily removed from the brine and vat kept sweet and clean.

After the shredded and salted cabbage has been properly cured, which to a certain extent depends upon the amount of salt used, temperature and other conditions, and after the fermentation has been going on from three to eight weeks, it is transfered into wooden

kegs or barrels and shipped to grocers and others to be sold to the public in "bulk." Some is placed in cans, exhausted, sealed and sterilized in retorts as ordinary canned goods are.

The opening of the vats, removing weights and waste material on top without more or less affecting contents, is quite difficult at best. It is claimed by some, that more or less decay on the top is unavoidable and portions unfit for food must be rejected. Such rejection is dependent upon the knowledge and understanding of men who may or may not be competent to judge of what is wholesome food. Hence, it is important that decay and putrefaction in connection with the normal wholesome fermentation of shredded cabbage be avoided as much as possible and that no precaution that can be taken is neglected to prevent contamination.

It would appear as a first essential, that only clean, sound portions of cabbage leaves should be used, that all discolored, bruised, or rotten parts are rejected and do not find their way into the vats. The core must be carefully considered. Some factories split the cabbage heads so as to lay open the center of the core. Most of them, however, do not use this precaution, but run a revolving knife into the cores. This does not sufficiently remove the infected parts if decay has set in.

The buildings in which kraut factories are housed have, in the past, not been constructed with that regard to sanitation that is desirable, not to say essential, in food factories. It is true, that in some which might be improved from the standpoint of construction, a fair standard of cleanliness is maintained by diligent care and close attention; but in others, we found conditions to prevail that can only be characterized as noisome. While during inspection work, only the requirements were made that operators make earnest efforts to keep places to as high a standard of sanitation as conditions would permit. It was also urged to plan for extensive improvements. Conferences of operators and our department are advisable where practices and constructions are fundamentally necessary for the production of wholesome foods may be discussed. These, embodying minimum demands, might then be uniformly adopted.

I am satisfied that some vigorous action is necessary and hope that the coming legislature will consider this industry and deal with it in a special law.

Inspections have been made under the general statutes, but carefully considered regulations based upon the best thoughts of progressive men in the business and dealing with the special problems of the industry under a license system would be more effective and, I believe, less irksome to the establishment involved.

Cold Storage Warehouses and Cold Storage Goods

Since 1917, when the cold storage law was passed by the legislature, cold storage warehouses have been inspected and operated under a license system under the jurisdiction of the dairy and food com-

missioner. The proper function of cold storage is to keep perishable articles of food in good and wholesome condition from a season of plenty to a season of scarcity. When confined to its legitimate end—the preservation of good food without deterioration or loss in food value—it is of great benefit to producers as well as consumers. It stabilizes the market and prevents loss and waste by spoilage.

Cold storage is abused, however, when perishable foods are kept into overlapping seasons, when they are held for no other purpose than to enhance prices, or when held until deterioration sets in. It is abused when food that is unclean, infected with maggots or corruption, is placed therein until an unsuspecting or perhaps an unscrupulous buyer is found who may manipulate and camouflage and devise means to market such stuff to the public. Then, it is an agency of evil and not of good. There seems to be no doubt that for a time the uses of cold storage had been perverted.

During the past year, I have found that the concerns who are operating cold storage warehouses are nearly all endeavoring to comply with the law and to conduct their plants in a commendable manner. I believe that they return the food entrusted to their care in as nearly perfect condition as can be expected. Articles that were in prime condition when placed in storage came out splendid, while of course, articles that were defective or tainted when going in, came out with the defects intensified. A few private cold storage plants resorted to sharp practices and, in my opinion, sought to evade the law and in a measure succeeded.

Storers of food have been careful to keep within the legal limit of the storage period. When for good reason it was not possible for them to remove goods within the time limit, they asked for extensions. In nearly all cases conditions were so that the extension provided for by law could be granted.

However, from observations that I have made, I am firmly convinced that some cold storage articles have been sold to consumers as and for other than cold storage goods in violation of the law. Especially is this true of butter and eggs. The act provides that all articles of food received in cold storage must be marked with the date when so received and when delivered from cold storage must also be marked with the date of delivery and that such markings on food or on packages containing food are prima facie evidence that the goods are cold storage. Further, that the individual purchaser of any part of food that has been held in cold storage must, upon demand, be informed of the dates when the article was first placed in cold storage and when delivered therefrom, and that it is unlawful to sell any article of food that has been held in cold storage except as and for "cold storage goods." Unscrupulous persons take butter that has been in cold storage in tubs and with the tubs properly marked, cut it into prints and pack these into boxes and sell it to consumers in and out of these unmarked boxes for fresh. Eggs are manipulated in a similar manner. They are taken out of cold storage and transferred from marked cases into such as were not

marked. I know of cases where all markings were removed with scrapers from carloads of eggs in the original packages and then the eggs were brazenly offered and sold for fresh at a time when there was a spread of twenty-five cents between the price of fresh and cold storage eggs. There are no characteristics by which it is possible, to determine to a certainty, whether or not butter or eggs have been held in cold storage, when the markings have been removed. Hence, it is extremely difficult to deal with violations of this kind in the courts. I, therefore, recommend that the cold storage act be amended so as to require all owners of and wholesale dealers in cold storage articles of food to keep accurate records of all cold storage goods owned, bought, or sold, and showing:

1. Dates when bought;
2. Party from whom bought, kind, and quantity purchased;
3. Cold storage warehouse where kept;
4. Dates of sales;
5. Persons to whom sales were made, kind and quantity sold, addresses to be given in all cases.

Such records to be accurate and open to the dairy and food commissioner and his agents at all reasonable times. In this way only can the intent of the law that consumers be advised when they are being sold cold storage goods be realized and the economics effected by cold storage be reflected in purchases for the family table.

The Egg Situation

Our department is interested in eggs, as well as in other food products, most when they reach the consumer. No matter how satisfactory transactions have been between producers, wholesalers and retailers, the "acid test" is applied when goods reach the consumer, and if there is complaint or difficulty on account of quality on that point, there is trouble.

It is not necessary to say anything about eggs which have become rotten or replusive and unfit for food, but our laws do not stop there. They contemplate, that unless eggs reach consumers fresh, they should be sold as "held eggs." Such eggs are defined to be eggs which have been held in places other than cold storage houses for a period of forty days or over and the law provides that persons purchasing or intending to purchase them must be notified that the eggs are " held eggs."

Now the difficulty arises, how are we, who are charged with the enforcement of the laws, to ascertain when eggs are forty days old? No provisions are made that the producer or the wholesaler or the retailer keep a record as to the time when eggs were produced or the days which they have been held. There is a difference in eggs when fresh and changes therein vary greatly according to the condition under which they are kept. Therefore, there seems to be no reliable method by which the age of eggs may be ascertained.

It is unfortunate that there are persons who are inclined to take advantage of this situation and sell eggs as fresh, which do not have

the qualities of fresh eggs. First we have producers who, along in September and October hold eggs for the higher prices expected during the winter months. These bring in held eggs which, they insist, are fresh and expect fresh egg prices for them. The country merchant, who does not wish to offend his patron, accepts and pays for them as such, if they do not show rots or spots, and passes them on. He may keep them in some rather warm place for a time. Then they reach the produce merchant in the cities as "current receipts." He candles them, culls out such as are inedible, and sells such as he considers not bad to retailers as "strictly fresh," or as "fresh."

Many of these eggs show considerable shrinkage, air spaces an inch or over in diameter are in some, the white is thin and watery, the yolk weak, definite in outline and looks rather dark. The retailer may have such eggs in his place for a week or over and some, which held together when they were delivered to him, go to pieces in his place. Then they are sold and consumers declare they have been given rotten eggs for fresh. But even if the contents remain in fairly good condition and the egg is still edible, when it reaches the table the characteristic freshness and sweetness of good fresh eggs is missing and the consumer, who has paid perhaps 10 cents to 25 cents a dozen extra to get fresh eggs, is not at all satisfied.

Then we also know that some dealers have been mixing cold storage eggs with "current receipts" and sold them as and for "fresh eggs."

Now, this is wrong, dishonest and unlawful. Our department gets complaints from consumers and we know that in some cases they have cause for complaint. It is our duty to enforce the law to the best of our ability and we have prosecuted some dealers.

We were unable to demonstrate to the courts the exact age of eggs, but we were able in some instances to demonstrate and prove that shrunken, thin, watery and flat eggs were not of the standard of quality of fresh eggs which the consumer had a right to expect. In one case we lost out, the court holding that a hen which ate flies and fish in a certain locality did not lay absolutely fresh eggs.

It would seem to be in the best interests of all, producers, merchants, retailers and consumers, if there was a standard established for eggs that are to be sold as fresh. Some merchants have such a standard now, and sell all shrunken and thin eggs as seconds or under some other designation. Gradings should be made uniform for all. The merchant that maintains a high standard of quality can justly demand cooperation from us as well as the person who purchases food can demand that it be of the quality represented. We know full well that we must reach the producers to get complete results but producers as well as other people are often reached most efficiently via the pocketbook. If men, to whom shrunken and thin and flat eggs come, pay considerable less for them than for fresh quality goods, if country merchants would pay September prices for September eggs in December and not December prices to producers, eggs would be marketed more promptly and more honestly.

I strongly recommend that all eggs be graded along reasonable and practical lines, having in mind the interests of the ultimate consumer and the producers as well as the interest of all dealers.

There is another phase of the egg problem that must be seriously considered, that is, egg breaking establishments and frozen eggs. Abuses have developed in this industry in some states, that have made laws for their regulation necessary, control being exercised under a license system.

Egg breaking rooms are necessary, useful and unobjectionable when eggs are broken that are defective as to shells, abnormally large or so small that they are not marketable, but are fresh and of good quality. But in the past, many eggs that were doubtful, considered inedible, incubated beyond the blood ring stage were broken, contents removed from shells, and churned, then placed in tin cans, frozen and kept for an indefinite period, when they were disposed of to bakers, restaurants, and other concerns using large quantities of eggs. Especially were eggs that had been kept and stored in the shell until the limit had been reached, broken, and frozen so as to check the rapidly progressing deterioration at ordinary temperatures, and again kept for an indefinite time. It seems advisable that some control be exercised. When eggs have been in cold storage for a year, or nearly a year, and the law provides that they cannot be held any longer, it does not seem right to permit them to be broken, churned and returned in tin cans to cold storage, there to be kept for another year. Then again, the rooms and utensils used are often far from clean. Some firms use every effort to keep room, utensils and products clean. In others, conditions may be found that are utterly intolerable.

Inspection while in a frozen condition is difficult and I therefore recommend that all establishments breaking eggs for preservation by freezing be required to obtain a license from the dairy and food commissioner under such conditions as will appear reasonable to the legislature.

The Return of Unsold Bread and Rolls

The legislature of 1919, by chapter 429, provided that the sale and delivery of bread and rolls shall be so conducted as to prevent the distribution of contamination, infection or disease among consumers, to bring such products to the consumer in as direct a line as may be practicable and without unreasonable delay and made it the duty of the dairy and food commissioner to declare conduct and practices inconsistent with the act and to order certain exemptions and tolerances.

This matter was carefully investigated, practices followed were considered and some were found to prevail in the selling of bread, that were inconsistent with the purposes of the act. Public meetings of owners of bakeries, their salesmen and dealers in bread, were called in Milwaukee and Racine. Practices that were deemed

objectionable were discussed and efforts were made to have all understand the law and the rules proposed for its enforcement. Dealers in bread, who had been accustomed, in the past, to have their places well stocked with bread without any regard as to whether or not they needed it, and without any responsibility on their part were displeased.

Bakers professed not to be unfriendly towards the law, readily recognized and admitted the great extent of the evil it aimed to remedy, but subsequent events failed to show sincerity of efforts to conform to the regulations issued.

During the spring of 1922, it was noted that bakers and grocers often disregarded the law in Milwaukee and Inspectors Town and Kelliher assisted in obtaining evidence of violations. Ten prosecutions were brought, of which three were against grocers who insisted on returning unsold bread; seven against salesmen of bread who did accept the return; and suits were brought against four of the largest baking corporations in Milwaukee. Convictions resulted in every case as none were seriously contested and the minimum fine was assessed. The court did not appear in sympathy with the law as it is and expressed an opinion to that effect; but, as stated before, assessed the fines provided for by the terms of the statute.

In my opinion, there is still considerable exchanging of bread going on. It is a phase of competition that is a public evil and for which, after all, the public and not the bakers pay. It is quite difficult to obtain convictions and I wish the law could be strengthened so as to be more effective.

There are tons of unwrapped bakery goods sold in the thousands of stores throughout the state. Some of the stores are clean and some are in such condition that discrminating people would not think of purchasing their food therein. With the system of exchanging, drivers of bakery wagons or trucks can and do take bread that has been in one store, perhaps the filthiest one in town, for a few days and put it into the show case of another, perhaps a much cleaner one. It is a curious fact that many people, who are most unclean about their persons and habits, and who have no appreciation of cleanliness as to food as we understand it, exhibit a desire and have habits of feeling, pawing over, and handling many bakery goods that stores where such people usually trade, permit them to do so. It is evident that under such conditions disease may be spread by persons who know nothing of sanitary precautions. Besides this, the thought of placing on the family table, bread that has been in dirty places may have been handled and pawed over by people who most likely have dirty hands, may have been exposed to sprays of sneezing or to minute particles of mucous expelled by violent coughing, or enveloped in the offensive mists of foul breaths, is repulsive to clean people. If such bread that has been taken back out of stores is sold to restaurants or boarding houses, as is often the case, it would not be any more welcome, were its true history known, and that it is the rejects of some place in the slums.

It is generally recognized by persons who have given this matter consideration, that the economic loss involved is not a negligible matter. Bakers who have kept close accounts report the loss as from four or five per cent in certain periods, eight or nine in others. The Food Research Institute of Stanford University has undertaken to make a countrywide investigation into stale bread losses and in a preliminary report states:

"Losses from stale bread as reported range from nil to six per cent of production or its wholesale value. For concerns refusing to accept returns of unsold bread from dealers, the average percentage of stales to production, so far as reported was two-thirds of one per cent, and the average net loss in value one-half of one per cent; the corresponding averages for concerns accepting returns from dealers were three and one-half per cent and two and three-fourths per cent . . . . stale bread losses exceeding one per cent of production are excessive . . . . Excessive stales threaten the financial success of the baker, tend to raise food costs and usually leads to a needless waste of food products.

"Acceptance of returns from dealers is by all odds the leading factor in stale bread losses where the loss is excessive. Where this practice is followed, the loss is almost sure to be excessive . . . . State laws prohibiting return of stales having the well-nigh united support of wholesale bakers operating under them can be enforced with such support and constitute the simplest and most effective contribution to the control of stale loss."

Artificially Bleached Flour

The Wisconsin statutes define flour as the fine, clean, sound product made by bolting wheat meal, and establishes a maximum for moisture, ash and fibre and minimum for nitrogen. In commercial practice, however, flour is not bought and sold on the basis of the legal definition but according to its grade and qualities.

Much uncertainty exists as to what certain terms when applied to flour mean. Not only is the average person unable to define expressions such as "patent," "high patent," "fancy patent," "bakers patent," etc., but even millers are not agreed.

In the process of milling wheat, kernels are broken up and separated into many different minute parts, some of which are eliminated by bolting and used for feed, others are combined again to make up the flour we eat as bread or in other forms. These range somewhere between 61 to 75 per cent, or thereabouts, of the entire wheat berry, according to its quality, the balance being considered mill feed. If all of the flour, which the wheat fed into the mill hoppers yields, is mixed, it is considered a 100 per cent flour and called "straight." Certain portions of the materials that make up this "straight flour" are considered more valuable than others on account of their color and other properties. If a portion of these, say ten or twenty per cent, is removed the resultant product could be termed a "cut straight." When about sixty per cent of the flour, consisting of its best parts is collected, the flour so collected is termed a "short patent," and the remaining portion is called "clear." Why "clear," I never could under-

stand. Since these separations into "patents" and "clears" are made in nearly all mills, a "patent" may mean anything from sixty to ninety per cent of the better portions of wheat, and a "clear" may mean that part of flour left when sixty per cent of the best parts in its composition have been removed or it may mean that part remaining when ninety per cent have been taken out. Numberless combinations are possible. Thus "clear" may be added and mixed with a "straight" and there is a "filled straight."

It has been aptly said that milling grades are a mystery. Since "patent" flours, as a rule, bring the highest prices and, of course, "clears" the lowest, there may be a wide range of prices with imperceptible gradations as to quality. Nowhere is there a clear line of demarcation, not even as to low grades which, in some cases, are left in flour intended for human consumption. In "Standard Comparative Values of Wheat, Mill Feed and Flour" are tables of the approximate average value of particular grades of flour when milled from wheat at a certain price. They show a close interdependence of the prices realized for mill feed and low grade and the value of flour and the relative values of grades of flour to each other. Thus, when wheat is $1.48 per bushel, mill feed $1.00 per hundred and low grade $2.50 per barrel, then the value of 60 per cent patent would be 7.17; 70 per cent, 7.09; 80 per cent, 6.99; 90 per cent, 6.89; 98 per cent straight, 6.81; 50 per cent cut straight, 6.69; standard clear, 6.01. It should not be understood that these figures mean selling prices. They represent values with differentials due to location or other factors eliminated. There is considerable disparity in quotations for flour of the same basic character by different firms, due to a great divergence in milling and selling methods and ideas as to what constitutes a legitimate net profit.

About the only indication of the quality or value of flour that presents itself strikingly to the average purchaser, especially purchasers for individual needs in households is its color. A clean, creamy white color has through the experience of generations come down to us as a chief characteristic of high grade flour and is so regarded today. Indeed, the method for determining the color of flour devised by Pekar about 1860 is used daily and many times each day in practically every mill in the country.

"Flour yield and flour color, or the color of bread produced from the flour, must always be considered together, as they are closely related in their commercial significance. Yield is the quantitative expression of the amount of flour that can be produced from wheat, *while color is the chief factor in determining the grade of flour and consequently its selling prices.*" Bulletin No. 557 U. S. Dept. of Agriculture, 1917.

"One of the most apparent and therefore most desirable properties of flour is its white color, which, if representing the natural color of the starchy contents of the endosperm is indeed an indication of high quality." Siebels Manual for Bakers, Chicago, 1917.

Mr. T. J. Holderidge, a witness for claimants in U. S. vs. 625 sacks of flour, stated at the trial as reported in U. S. Department of Agriculture, Notice of Judgment No. 722, page 68:

". . . the color was an important consideration in flour before artificial bleaching commenced; different kinds of wheats have different colors and the whitest flour gets the best prices; the natural color would indicate the length of the patent or whether it was a straight or a clear to a certain extent."

We fully understand the preference of consumers for white flour when we consider the sources of color in flour which Jago and Jago in "Technology of Bread Making," Chicago, 1921, describe as follows:

"The following may be taken as a classification of the nature and sources of the coloring matter present in flour.

"1. Bran. The outer envelope of the wheat grain is from a pale yellow to a reddish-brown tint, and contains large quantities of coloring matter. If finely ground, bran finds its way into flour, the particles impart their own tint to the flour, and when made into bread this color is intensified by being dissolved and permeating the whole of the bread.

"2. Crease and other dirt. Outside dirt, especially that of the crease of the grain, may be ground up into flour, and will thus give it a sad, bluish-gray tint.

"3. Coloring Matter of the Endosperm. In some wheats, the whole endosperm is more or less colored yellow. A notable instance of these is Walla Walla wheat of Oregon (before referred to), which yields a flour sometimes as yellow as a primrose."

Removal of color is treated by the same authority.

"1. Bran. This is now removed by careful milling and purification from all small bran particles.

"2. Crease dirt. To get rid of this and other outside dirt, the grain is thoroughly scored and polished in the dry state, or washed and dried. Further, the grains are in the first operation of milling carefully split longitudinally along the crease, and the dust lodged therein got rid of before any further reduction of the broken grains into flour.

NOTE. Regarding the flour as consisting only of the endosperm of the grain (or, as it is sometimes called, the kernel of the berry) ground into a fine powder, the removal of bran and crease dirt is only a removal of foreign substances and a consequent purification of the flour.

"3. Coloring Matter of the Endosperm. This evidently stands in a different category, because it is the color of the flour itself and not that of any foreign matter even from other parts of the grain.

"This coloring matter is somewhat unstable in character as it diminishes very noticeably on keeping flour some two or three months, and also varies considerably in different flours."

But in spite of all efforts made to mechanically eliminate all bran particles, hair and other foreign matter from flour, it has not been found possible to do so. A careful investigation of this subject was made and reported as found in U. S. Department of Agriculture, Bulletin 839:

"Many flours and mill streams were examined by obtaining representative composite portions of five milligrams each, which, after preparation, were scrutinized under the microscope, and the bran particles as well as the minute pieces of hair found therein were counted. In thirty-six samples of hard wheat, patent flours the bran

particles counted ranged from 15 to 72 with an average of 30; hair count ranged from 2 to 45 with an average of 18. Total offal count ranged from 15 to 117 with an average of 45.

"In samples of soft wheat patents, bran particle count varied from 19 to 133, the hair count from 1 to 34, total offal count from 20 to 162, with an average of total offal count of 70

"In samples of patent flours made from blended wheat, the bran particle count ranged from 18 to 83, with an average of 42; hair count from 13 to 40, with an average of 21; total offal count from 31 to 101, with an average of 64."

Beginning of Bleaching

Efforts of milling technology have been directed towards short cuts for whitening flour. Bleaching by chemical means was one of these and in this country it is less than twenty years old. Letters patent were granted May 10, 1904, for bleaching flour by nitrogen peroxide. This was at first generated by chemicals, which process however was soon displaced by the method of producing the bleaching reagent directly from the atmosphere by electrical means in the mill.

As bleached flour found its way into the market, a storm of protest arose among food officials. Flour was found that had been positively injured by bleaching. Poor flour had been bleached and had deceived unwary buyers. Opinions were advanced that a sufficient quantity of the poisonous substance added to the flour in the bleaching process might be retained therein in some form so as to adversely affect its wholesomeness.

The legislature of Wisconsin passed a law forbidding the sale of artificially bleached flour for use and consumption within the state. This was enforced for many years, but along in 1919 and 1920, much bleached flour found its way into the state. The legislature of 1921 passed a bill amending the statute prohibiting the sale of bleached flour but the governor vetoed the bill.

A New Claim

About this time, Industrial Appliance Company of Chicago, venders of bleaching appliances, owners and exploiters of patents dealing with treatment of flour with gases, presented briefs, technical literature, and other written or printed matter to the dairy and food commissioner purporting to show that the process covered by the patents in question did not artificially "bleach" flour, but did "mature" the treated flour so as to give instantaneously the properties of aged flour.

Claims were made that treating flour in the manner set forth in the patents among other things did:

Produce instantly on freshly milled flour results that are essential to render its full baking efficiency and food value.

Ripen the gluten of the flour, producing bread at its best in volume, texture, color and flavor.

Cause this improvement in quality to be indicated in a normal way with a healthy white color and that treated flour though whiter does not appear better or of greater value than it really is.

Further that, at the time the Wisconsin law was enacted, flour "treating," as covered by the patents was unknown and that for these reasons flour treated by the process of the Industrial Appliance Company could not be considered as "artificially bleached flour" within the terms of the Wisconsin statute. Mr. Klueter, chief chemist, then was instructed to examine the scientific aspect in regard to bleaching as far as time and laboratory facilities permitted and to me came the task of making as complete and careful investigation of this matter as possible from the standpoint of a practical baker.

Scope of Work

Comprehensively to cover the task assigned to me, it was necessary to consider flour and bleaching from many points and obtain all reliable information possible. The process of the Industrial Appliance Company had to be examined in regard to its action upon the flour treated and also in relation to other processes and their effect upon flour. I had to study the history of flour bleaching, sought the opinions of men of experience who had made a special study of the subject, consulted textbooks, examined bleached and unbleached flour and made baking experiments with both. I had to balance claims of promoters with personal observation and actual experience. In a field where there are no definite standards, no solid ground to stand upon, but a very decided conflict of opinions, this was no easy matter.

Bleaching and Bleaching Agents

The dictionary definition of bleaching is "the process of whitening, as textile fibers and fabrics, by treatment with chemicals or by exposure to the sun and weather." Artificial bleaching is defined by one applicant for a bleaching patent as follows: "By artificial bleaching is meant a treatment of the flour to remove the objectionable color present, by chemical means, thereby immediately improving its natural color." In all of the processes observed, the chemical is added in a gaseous state to the flour that needs "treating." The chemicals added are:

Anhydrous Chlorine Gas. This, the dictionary says, is "a greenish-yellow, poisonous, gaseuos element with an offensive odor, having great power for bleaching, deodorizing, and disinfecting."

Nitrosyl Chlorid Gas. This, the patentee avers, is "an extremely powerful bleaching agent. A pound of the pure gas, measured in the liquidfied form, will bleach in the neighborhood of 200,000 pounds of flour. The bleaching effect of chlorine gas is very considerably less. A pound of chlorine will bleach only from five thousand to ten thousand pounds of flour."

Ammonia Gas. This, the dictionary says, "is a colorless, pungent suffocating gas, obtained chiefly by the dry distillation of nitrogenous organic bodies, as bones, blood, etc."

Nitrogen Peroxide, when pure and concentrated, is a dark brownish red gas, which is heavier than air, powerful, corrosive and extremely poisonous.

This by no means completes the list of articles proposed for flour bleaching and some systems provide for a combination of two of these chemicals. An illustration of a combination is found in a patent granted June 7, 1921, which reads: "A process of bleaching and improving the properties of milling products which comprises the successive steps of; (a), treating the said products with chlorine; (b), then treating the same with a peroxide compound capable of liberating nascent oxygen; (c), and finally subjecting the product to the action of ultra-violet light."

As there was much flour, treated according to the patents controlled by the Industrial Appliance Company, Chicago, offered for sale in the state, first attention was given this process. The company generously offered their cooperation, laboratory facilities, etc., in our undertaking to ascertain the merits of their case and their offer was accepted. One of their contentions, and in fact their chief claim, is that flour treated by their process is "matured," the whitening of it being merely incidental, therefore, it seemed reasonable to assume that the results must be most strikingly demonstrable in green flour.

I, therefore, had three grades of flour, a straight, a long patent, and a shorter patent, milled and on the same day forwarded to their laboratory. On the following day these flours were "treated" in my presence personally by Mr. Logan, a portion of untreated flour being reserved of each kind for comparative baking tests. It is generally conceded that the one best test for flour is the baking test.

There was a marked change in the color of the treated flour as compared with the untreated portion of the same grade. In fact, judged by its color, it did not appear to be the same article, but one much superior. The straight flour bleached looked much whiter than the short patent unbleached.

The next day, bakings of both the bleached and unbleached flour were made by the expert in charge of the laboratory, according to a formula usually followed there, although I had suggested that sugar and shortening not be added to the mix so as to bring out more surely and strikingly any properties the flour might possess. Two loaves were baked of each kind, one of each being cut and scored in the laboratory by Mr. Logan and the other forwarded to the office in Madison. Score card was prepared by Mr. Logan. The loaves sent to Madison were cut and the pictures of them are shown here.

REPORT OF COMPARATIVE TEST OF FLOUR

Laboratory
INDUSTRIAL APPLIANCE CO.
Chicago

From Dairy and Food Commissioner
Mr. Kremer, Chief Inspector, Madison, Wis.

Received 1/24/22 | Treated 1/24/22 | Tested 1/25/22 | Returned 1/25/22

MARKS	FLOUR					DOUGH						BREAD				
						Fermentation (Temperature and Time)										
	Color	Acidity	Ash	Protein	Water cc.	Temp.	1st exp.	2nd exp.	3rd exp.	Pan	Total	Oven 440° F.	Volume cc.	Color per cent	Texture per cent	Value per cent
Success Fresh	100	0.159	0.54	13.17	224	86°	98	74	31	77	280	35	2100	100	100	100
Success Matured	105	0.199	0.54	13.17	224	86	89	71	30	70	260	35	2290	104	102	105.0
Triumph Fresh	100	0.199	0.68	13.52	224	86	98	71	30	71	270	35	2090	100	100	100
Triumph Matured	104	0.259	0.68	13.52	224	86	88	70	30	71	259	35	2140	104	101	102.5
Beaumont Fresh	100	0.202	0.63	14.00	224	86	96	64	31	77	268	35	2050	100	100	100
Beaumont Matured	104	0.222	0.63	14.00	224	86	83	64	31	74	252	35	2150	104	100	102.9

Remarks	Moisture
Success Fresh	9.74
Success Matured	9.74
Triumph Fresh	9.79
Triumph Matured	9.79
Beaumont Fresh	11.16
Beaumont Mat	11.16

Determinations are upon moisture free basis.

Each bake contains 380 grams flour, 10 grams yeast, 5 grams salt, 11 grams sugar, 9 grams shortening, water as indicated.
The sample of fresh flour of each grade is used as the standard of comparison for that grade, unless otherwise noted.

It will be noted that the difference between bleached and unbleached flour is manifested in three properties of the finished loaves: Volume (meaning size of loaf), color, and texture (manifested in small, uniform cells with thin walls). Improvements claimed by Mr. Logan for treated flour.

	Volume	*Texture*	*Color*
Loaf 1 S	9%	2%	4%
Loaf 2 T	2.3%	1%	4%
Loaf 3 B	5%	none	4%

In my opinion, Mr. Logan was not an unbiased judge, being an interested party and a texture score for the bleached flour of 102 for No. 1, 100 for No. 2, and 98 for No. 3, it appears to me, would have been more correct.

On February 7, 1922, I made an experimental baking of these flours using the formula, flour 3½ pounds, water 2 pounds, yeast 30 grams, sugar 30 grams, shortening 25 grams, salt 18 grams, for each baking and making four loaves of each.

SCORE FOR VOLUME

	Loaf	Vol.		Loaf	Vol.
Success Natural	1	2055 cc.	Success Bleached	1	1860 cc.
	2	2060 cc.		2	1880 cc.
	3	2019 cc.		3	1990 cc.
	4	2100 cc.		4	2040 cc.
Triumph Natural	1	1950 cc.	Triumph Bleached	1	2080 cc.
	2	2035 cc.		2	2090 cc.
	3	1890 cc.		3	2060 cc.
	4	1975 cc.		4	2075 cc.
Beaumont Natural	1	1835 cc.	Beaumont Bleached	1	1975 cc.
	2	1860 cc.		2	1925 cc.
	3	1880 cc.		3	1905 cc.
	4	1905 cc.		4	2005 cc.
Total		23564 cc.	Total		23885 cc.

The score for texture was:

Success Natural.....100—Bleached..... 98
Triumph Natural.....100—Bleached.....102
Beaumont Natural...100—Bleached.....102

One loaf of each bleached and unbleached was scored for texture at the laboratory February 8 by M. Dunkan who had much experience in examination of bread. Her score on the basis of 100 for perfect was:

Success Natural 97—Bleached 97
Triumph Natural 92—Bleached 91
Beaumont Natural 94—Bleached 95

When blindfolded, she picked a loaf from unbleached flour as having the best flavor, a characteristic which is not getting nearly the consideration it is entitled to.

On July 12, 1922, I forwarded samples of Success and Beaumont flour to a commercial laboratory doing very much work on flour for wholesale bakeries. Their findings were:

	Color	*Texture*	*Volume*
Success Natural	95	98	98
Success Bleached	94	97	95
Beaumont Natural	94	97	99
Beaumont Bleached	93	95	93

This would indicate a marked improvement in the flour that had been stored for a period of six months unbleached and possibly a deterioration in the bleached articles.

The conclusion reached as to flour treated under the patents of the Industrial Appliance Company, Chicago, was that such flour was artificially bleached and its sale for use and consumption within the state a violation of the law. One person was prosecuted and upon a plea of "guilty" fined.

The Industrial Appliance Company then gave assurance that it would withdraw its product from sale within the jurisdiction of the Wisconsin food law.

Further investigations were made as to flour treated with nitrogen peroxide. A questionnaire was prepared and through the courtesy and in the name of the Atlas Bakery, Milwaukee, forwarded to recognized authorities on flour, namely, Harry Snyder, Russell Miller Milling Co., Frank Emmons, Washburn Crosby Co., M. A. Gray, Pillsbury Flour Mills Co., further to Dr. H. E. Barnard, director of the American Institute of Baking. Questionnaire was sent under the name of a baking concern because it was felt that in this way a more frank expression of opinion might be obtained.

Questions as to Bleaching of Flour

1. Has bleaching any effect upon the gluten in flour?
2. If it has, what is it?
3. Will the change in the gluten brought about by bleaching be reflected in the finished loaf?
4. Has bleaching any effect upon the acidity in flour?
5. If it has, will it be noticeable in the baked loaf?
6. What will be the characteristics of bread made from bleached flour as compared with the same flour unbleached?
   - a—as to color of crumb.
   - b—as to color of crust.
   - c—as to flavor, based solely upon flavors produced by or in the flour.
   - d—in texture.
   - e—in volume.
7. Will natural aging bring about the same changes in flour that are produced by bleaching?
8. Does bleaching modify the fermentation required for the bleached flour as compared to the unbleached?
9. Can a 90 per cent flour be bleached so to simulate the color of an 80 or 85 per cent flour of the same wheat and milling?
10. Does bleaching condition the gluten the same as aging and to what extent?

RUSSELL MILLER MILLING CO.

of North Dakota, Merchant Millers, Minneapolis, Minn.

January 13, 1922.

Mr. G. Cullen Thomas, Chemist,
Atlas Bread Factory,
923 Central Ave., Milwaukee, Wis.

Dear Sir:

Answering your letter of January 11th concerning the bleaching of flour:

While chemist of Minnesota Agricultural Experiment Station, I made a study of flour bleaching and the results are published in Bulletin No. 111 (1908) of that station. The electrical process (Alsop) was the process studied, as other forms of bleaching had not then come into any extended use.

I can best answer your questions by copying some of the conclusions given pages 140–143.

"7" "The glutens from bleached and unbleached flour are identical in physical properties (except color) and show the same index of refraction."

"16" "In the breadmaking tests of commercially bleached flours no difference whatever was observed between the breads produced from the bleached and the unbleached flours milled from the same wheats, except that the bleached flours produced a whiter bread and also showed a tendency to produce larger sized loaves. Bleaching of the flour did not impart any odor or taste to the bread or leave in it any residue."

"8" "The nitrogen peroxide used in small amounts in electrical bleaching of flour exerts no chemical action upon the flour other than upon the coloring matter."

Your questions 1, 2 and 3 are covered in conclusion No. 7 quoted above, while 4 and 5 are covered in No. 8; question 6 is discussed in conclusion 16. As to question 9, on page 139, it is stated: "Bleaching darkens the fiber impurities in low-grade flours and simply tends to make more pronounced the impurities. As to the wholesomeness, that phase of the question is essentially settled by the extensive litigation that has failed to show that bleached flour is in any way injurious to health and by the recognition of bleached flour by the government into interstate commerce.

Yours truly,

Harry Snyder.

WASHBURN-CROSBY CO.

EVENTUALLY

Gold Medal Flour

Minneapolis, Minn., January 20, 1922.

Laboratory Department.
Mr. G. Cullen Thomas, Chemist,
Atlas Bread Factory,
Milwaukee, Wis.

Dear Sir:

We have your questionnaire on bleaching of flour. I will be glad to give you any information we have in reference to it.

We find that bleaching flour does have a favorable effect upon the gluten. Of course, by the old methods it was possible to over-do this

and the gluten could be affected adversely, but by the present methods used nearly absolute control is obtained. This, I think, covers question No. 2.

The change in the gluten will reflect in the finished loaf in that we find it gives a better texture.

Regarding the effect of bleaching as to acidity. Naturally aged flour has a tendency to increase acidity and I think there is a tendency for bleaching to increase the acidity, by some processes more than others. It would not be noticeable in the finished loaf but would effect the fermentation just as naturally as aged flour would.

As to the characteristics of bread made from bleached flour compared with unbleached flour. The color of crumb will be whiter, the crust will show no change, flavor will show no change, and the texture will have a tendency to be better as well as the volume. I am saying this with the fact in mind that the fermentation of the two flours has been carried out to suit the particular flour; that is, I figure that a flour which has been bleached has the effect of natural aging, and therefore, the fermentation period will be slightly shorter than it will in a flour which has not been bleached. Natural aging brings about the same changes in flour as are produced by bleaching, as far as we are able to discern. As stated above bleaching does modify the fermentation period as compared with the unbleached flour; this is also true with the naturally aged flour.

As to whether a 90 per cent flour can be bleached to simulate the color of an 80 or 85 per cent flour of the same wheat and milling—absolutely no. If you have in mind the idea that bleaching tends to deceive. It does not for the reason that the branny particles in the lower grade are not capable of being bleached and when these lower grades of flour are bleached they give a gray or specky appearance. This is quite decidedly intensified when flour is bleached, as the white background brings out the darker color or specks more decidedly.

We consider that bleaching conditions the gluten the same as aging, only it does it practically instantaneously, where aging requires a considerable length of time, and bleaching practically has the effect of sixty days' aging immediately, while under natural conditions it would take the whole period.

During the period before the government sanctioned the bleaching of flour; while they were taking the question up as to the deleterious effect, we were decidedly against bleaching, for the reason we felt we wanted to take the same attitude as the government.

During the period we did not bleach, and it may sound very peculiar, but flours of today, since bleaching has become practically universal, are generally of a shorter patent than they were before bleaching was introduced. I think this in itself confirms the fact that a longer patent cannot be made to simulate the shorter patent through the agency of bleaching. There is another factor showing that a shorter patent is now being used and that is that there is a much larger quantity of first clear on the market than in former years.

Yours very truly,

WASHBURN-CROSBY CO,

By Frank W. Emmons.

PILLSBURY FLOUR MILLS COMPANY,

Minneapolis, Minn., U. S. A., January 19, 1922.

Atlas Bread Factory,
923–931 Central Ave., Milwaukee, Wis.

Atten. Mr. G. C. Thomas.

Gentlemen:

We acknowledge receipt of your letter of the 11th inst. enclosing a questionnaire which you asked us to fill out and return. This we are glad to do in line with the knowledge gained from practical application of the various bleaching methods in common use in the United States.

If we can be of further service to you, kindly communicate with us again.

Very truly yours,

PILLSBURY FLOUR MILLS COMPANY,
M. A. Gray,
Laboratory and Baking Dept.

1. (Q) Has bleaching any effect upon the gluten in flour?
   (A) We believe that all forms of bleaching affect the gluten to a greater or lesser degree, according to the bleaching agent used, although, possibly, indirectly.
2. (Q) If it has, what is it?
   (A) It is undoubtedly true that most of them change the acidity; in fact, one method, which has been largely used in recent years, unquestionably increases the acidity; and the promoters now claim that it will increase the intensity of the acidity; consequently it is right in line with the theory now becoming so popular, viz: the hydrogen-ion concentration.
3. (Q) Will the change in the gluten, brought about by bleaching, be reflected in the finished loaf?
   (A) Yes.
4. (Q) Has bleaching any effect upon the acidity in the flour?
   (A) Yes. See answer to 2.
5. (Q) If it has, will it be noticeable in the baked loaf?
   (A) Yes.
6. (Q) What will be the characteristics of bread made from bleached flour as compared with the same flour unbleached?
   (A) (a to e) White color, if the flour is of high grade and well milled. Gray-white, if flour is of a lower grade or poorly milled. Also improvement in the volume and texture providing the bleaching has not been carried to excess, in which case the acidity may have been carried to such a degree that the volume and general character of the loaf is inferior to a perfectly treated flour or one that has not been treated at all. This answers your specific question with the exception of flavor, and we have not been able to notice any marked change to this respect.
7. (Q) Will natural aging bring about the same changes in flour that are produced by bleaching?
   (A) We believe it does.
8. (Q) Does bleaching modify the fermentation required for the bleached flour as compared to the unbleached?
   (A) Yes.

9. (Q) Can 90 per cent flour be bleached so as to simulate the color of an 80 or 85 per cent flour of the same wheat and milling?
   (A) No. See reason given under 6.
10. (Q) Does bleaching condition the gluten the same as aging and to what extent?
   (A) Yes; depending on the intensity of the treatment.

MEMO: Jan. 17, 1922.

From: C. B. Morrison.

To: Dr. H. E. Barnard.

Subject: *Answers to Questionnaire.*

1. Yes.
2. Gluten from average commercial, bleached flour is lighter in color than that from similar unbleached flour. Analytically it is difficult to detect any difference in gluten from bleached and unbleached flour. Gliaden isolated from bleached and unbleached flours has been found to give identical polariscope readings. If there is an excess of nitor, nitrosyl compound, chlorine or other bleaching agents added to the flour, protein combination would be possible.
3. Probably to some extent bleaching effect is chiefly due to its effect on the coloring matter of the flour. We do not think it is from the gluten standpoint particularly.
4. Yes. On the hydrogen-ion concentration as usually carried out. Excess of bleaching agents will show marked effects.
5. If excessive amount of bleaching agent is used.
6. Largely an effect on coloring of the loaf.
7. The changes are similar.
8. Yes.
9. Cannot answer intelligently.
10. Probably not, although general effects may be similar.

Advertised Advantages of Bleaching

It is interesting to note claims made by vendors of bleaching appliances in advertising their wares. We read that bleaching produces "larger loaf than ever before with a better color than ever before." Northwestern Miller, July, 26, 1921.

"It looks too good to be true, wonderful improvement in color, tremendous increase in size of loaf." Northwestern Miller, July 6, 1921.

"Larger loaf than ever before with a better color than ever before." Northwestern Miller, June 29, 1921.

"Flour with a better color." Northwestern Miller, June 22, 1921.

"The lower the grade of flour, the more marked its improvement.

"Picture shown of loaf with volume of 2100cc, made from unbleached and loaf with volume of 2350cc, made from bleached flour. (Increase 11.4 per cent)." Northwestern Miller, April 20, 1921.

What Can Be Bleached and Effects of Bleaching

In the case, United States vs. 625 sacks of flour, the question of bleaching was widely discussed, witnesses for and against bleaching were examined under oath and the following statements are taken from notice of judgment No. 722, Foods and Drugs Act.

Samuel T. Ballard, member of Ballard & Ballard, Millers, St. Louis, witness for government:

"Used Alsop bleachers for four years in mills. Patent flour bleached lightly and clear heavily can be made practically the same color.

We can bleach our clear in the ordinary commercial way and it will be whiter than our patent. Bleached flour deteriorates from the day it is made and bleached." N. J. No. 722, page 32.

Archie C. Comstock, mill manager, Ellsworth, Kansas, witness for government:

"Bleached for a time but gave it up. Straight bleached could be made as white as the patent unbleached. The clear could not but bleaching could make the clear similar in color to the straight." Page 32.

Harry Gifford, head miller of Aberdeen Milling Co., witness for the government:

"Bleached flour for about five years but stopped. After starting to bleach the percentage formerly used in first clear was extended to take in parts of the wheat that had been formerly gone into second clear. The clear bleached looked better than the patent unbleached." Page 34.

Fred H. Krite, 72 years old, in milling business forty years. Bleached from 1904 to 1909:

"Before bleaching our best patent was a 55 per cent patent. Sold under the same brand after bleaching. It was 75 per cent to 80 per cent. The remainder of the flour, 25 per cent or so, we called extra fancy. This extra fancy bleached would very nearly approach the color of the patent unbleached." Page 37.

A. C. Leeflang, manager of Lexington Mill and Elevator Company, which milled the flour seized. Witness for mill:

"If then a long patent is bleached it can be made whiter than an unbleached short patent." Page 59.

John E. Burger, practical miller of 35 years' experience:

"A long patent is usually darker than a short. Yellow berry makes the flour a little darker than that free from yellow berry. I think I can bleach the yellow berry so that it looks like flour free from yellow berry. So that bleaching standardizes the color of all flours made from varying kinds and conditions of wheat." Page 65.

Alvon Edgecomb, manager, Updike Milling Company, thirty years' experience as miller, bleached for three years. Witness for mill:

"Bleaching brings the colors of all kinds of wheat closer together, and makes them look more alike,—the good flours and the bad flours, the short patent and the long patent, the flours from the new wheat and from the old wheat, from yellow berry and from every other kind of wheat." Page 66.

T. F. Halderidge, mill manager, who has been quoted before:

"Inferiority in wheat from the presence of yellow berry would be practically concealed by bleaching. Getting rid of the yellow berry is considered a problem. The yellow berry is a softer wheat than Turkey wheat, and will never make so strong or so good a flour as Turkey wheat, bleaching or no bleaching. The yellow berry, or the yellow color, is a defect in flour, and bleaching would make it so near in color to wheat that did not have the yellow berry in it that it would take a genius of an expert to tell the difference. By bleaching it can be made to look as good. Flour from yellow berry, if it is sold as such and known to be such, will not bring as much as flour made from Turkey."

Chauncey Abbot, manager of Wells-Abbot Memen Company, capacity of mill 1,800 barrels a day:

"Used Alsop bleached for five and one-half years. I can bleach flour made from yellow berry so it will be as good as flour made from other wheat. . . . If one should take 15 per cent of patent out of a straight and bleach what is left, the 'cut straight', it could be made to look so like the straight by bleaching that it would be doubtful whether a person could detect the difference. The bleaching makes the cut straight whiter and nearer the color of a straight which had not been cut."

Henry Stark, engaged in milling business for thirty-five years, witness for mill:

"I consider it preferable to control the color of my flour by nitric acid treatment in a liquid or gaseous form than by milling methods. . . . . You can adjust your bleacher so as to bleach equivalent to a month or two or three months. So you can make the soft flour match up with flour of a given age, and look alike in color." Page 79.

E. D. Lyle in the milling business making from 300,000 to 400,000 pounds per year, witness for mill:

"When we commenced to bleach, we changed the standard of color, and have maintained it since as near as possible at all seasons of the year and one year after another, whether the wheat is new or old or whether the kind of wheat varies. Natural aging had nothing to do with the standard adopted. We adopted a standard which we thought would make an attractive color for each particular grade—an arbitrary color." Page 81.

In the case of the Lexington Mill and Elevator Company vs. United States, testimony was submitted and disproved that in the Alsop process of bleaching of flour a deleterious substance, namely, nitrites, was introduced into the flour, but whether or not in sufficient quantities to be harmful or deleterious to health under the terms of the National Food and Drugs Act was a question not decided in that case. The case on appeal was remanded for a new trial because the trial court had not submitted this question for determination to the jury but there was no re-trial.

Visiting Mills

Mr. Klueter and I visited representative mills and the experimental bakeries conducted therein, Mr. Klueter investigating scientific and laboratory problems and I the practical side. We called at the Washburn-Crosby Co., the Russell Milling Co., the Pillsbury Flour Mills Co., and others. In all we were received most kindly and after stating our problem treated with frankness and courtesy. Every opportunity to make examinations was afforded us.

In the experimental bakeries of the three largest mills, bakings are made each day from flours milled the previous day. We observed test loaves from both bleached and unbleached flours, with no appreciable difference as to texture or volume, but a decided difference in color.

All of the mills visited bleached, but did not bleach the same kind of flour. One who has a nation-wide distribution and a reputation for high quality did not and has not bleached its best family patent for years, but did bleach the clear flour, while another of equally high repute bleached its highest grade but not its clear.

All were in agreement that the demand of the public for white flour is the prime reason for bleaching, and inclined to maintain that bleaching is beneficial to flour in other respects, especially to flour made from "unsweated" wheat. On improvements, other than color, there was a difference of opinion, one of the best millers maintaining that there was not the slightest difference, some holding that there may be a slight improvement, others, that there is considerable. All denied that by bleaching inferior streams could be mixed with good flours as the specks (bran particles) would show up.

It was also generally conceded that the white color produced by bleaching flour is not of the same character as the white produced by natural aging.

Most of the mills claimed that it would be entirely agreeable to them if bleaching were absolutely and universally prohibited at once, but if certain mills bleached, others would be forced by competition to do likewise.

Of course, not all the millers are of the same attitude towards the public. One stated, "bakers who buy flour because of its color ought to get stung," while others thought it wrong to sting "any consumer of flour, no matter how ignorant he was." All offered their cooperation to the end that none of their artificially bleached flour would find its way into Wisconsin, there to be sold in violation of law, and that all bleached flour now in the hands of merchants in Wisconsin be withdrawn for sale. In this they kept their promise.

Wisconsin millers were no less generous in offering and giving cooperation and earnestly desirous of so conducting their business as not to violate our law. Bleaching devices are installed in most of the mills and flour is bleached to be shipped outside of the state in competition with other mills that bleach.

The Atlas Bread Factory and the M. Carpenter Baking Company gladly gave the use of their laboratories and other facilities for the purpose of determining the truth about bleached flour.

I am indebted to Prof. C. H. Bailey, University of Minnesota, who is considered one of the foremost authorities in the country on wheat and flour, for many valuable suggestions and side lights on the bleached flour questions. In his opinion bleaching is primarily a removal of color and is an advantage in so far as it enables certain localities to market their wheats without granting large or making special efforts which they would have to do otherwise.

The most complete investigation that came to my notice regarding bleached flour has been made by Mr. Harry Snyder, results of which were published by the University of Minnesota, Bulletin 111. In it

a table is given showing volume of bread made from bleached and unbleached flour, identical in every way except as to bleaching:

Bleached		Natural	
Flour No.	Volume of Loaf	Flour No.	Volume of Loaf
1	1425	2	1410
3	1440	4	1360
5	1410	6	1325
7	1425	8	1355
9	1405	10	1435
11	1460	12	1335
13	1465	14	1460
15	1450	16	1410
17	1485	18	1450
19	1420	20	1435
21	1445	22	1440
23	1465	24	1480
25	1455	26	1525
27	1475	28	1455
29	1450	30	1400
31	1460	32	1440
Total.....	23135	Total.....	22715

Conclusions reached by Mr. Snyder are embodied in his reply to questionnaire heretofore quoted.

I have sent a number of samples of the same flour unbleached and bleached to a commercial laboratory making a specialty of flour examinations and present its reports in a tabulated form.

No.	Kind	Color	Volume	Texture	Value
1.....	Bleached...	99.....	98	100	97.3
2.....	Natural....	98 creamy...	98	99	96.6
3.....	Bleached...	100.....	99	100	99.4
4.....	Natural....	98 creamy...	100	100	99.4
5.....	Bleached...	100.....	100	100	99.4
6.....	Natural....	98 creamy...	100	100	100
7.....	Bleached...	98.....	100	100	100
8.....	Natural....	97 creamy...	102	100	100
9.....	Bleached...	99.....	99	100	98.8
10.....	Natural....	97 creamy...	100	100	98.8
11.....	Bleached...	97.....	99	100	97.2
12.....	Natural....	95 creamy...	100	100	97.2
13.....	Bleached...	96.....	98	99	95.9
14.....	Natural....	94 creamy...	98	99	95.6
15.....	Bleached...	100.....	98	100	.....
16.....	Natural....	98 creamy...	96	99	.....
17.....	Bleached...	98 creamy...	100	100	.....
18.....	Natural....	98 creamy...	99	99	.....
19.....	Bleached...	98 creamy...	101	100	.....
20.....	Natural....	98 creamy...	99	100	.....

Researches in regard to wheat flour and bread were made by the Experimental Farm Research Branch of the Dominion of Canada and among other things bleached flour was studied.

Results are given in Bulletin No. 97. It is stated therein that advantages claimed for bleaching have varied somewhat from time to time, according to legal exigencies, and tables are given showing results of baking tests. I quote from these tables.

Wheat from what flour was made	Bleached or unbleached	Vol. from 100 gr. flour	Inside color	Texture	Baking Strength
Ontario Winter..	N.	427	88	83	84
Ontario Winter..	Bl.	423	95	82	84
Manitoba Spring	N.	494	103	101	102
Manitoba Spring	Bl.	505	105	101	104
Red Fife	N.	505	98	98	101
Red Fife.....	Bl.	493	103	99	100
Ebert Selected...	N.	380	82	79	77
Ebert Selected...	Bl.	377	91	78	78
Yellow Cross....	N.	432	86	86	90
Yellow Cross....	Bl.	432	99	88	91
Kubanka.....	N.	509	90	102	105
Kubanka.....	Bl.	489	99	101	103

Other experiments were made with flour stored for thirteen months.

Kind of wheat	Bleached or unbleached	Vol. from 100 gr. flour	Inside color	Texture	Baking strength
Ebert Selected...	N.	477	94	96	100
Ebert Selected...	Bl.	484	101	98	102
Yellow Cross....	N.	527	98	101	108
Yellow Cross....	Bl.	537	104	102	109
Kubanka.....	N.	520	101	103	110
Kubanka.....	Bl.	516	103	103	110

Discussing this, the bulletin says: "The chief point brought out very clearly is that, although by bleaching a paler color was obtained, in no case were the good effects on baking strength produced. Comparing for instance the apparent gain of one point in baking strength by bleaching the Yellow Cross flour with the gain of eighteen points in baking strength by storage, we see at once the absurdity of the claims made that bleaching produced the same effects as natural aging."

It is usually claimed by persons in favor of flour bleaching that the process accentuated the difference in color between bran particle and true flour, and that, for this reason bleached flour would not deceive. I had no opportunity to closely investigate this phase, but results of a microscopical examination of flour as published in U. S. Bulletin of No. 839, Department of Agriculture referred to heretofore, do not bear out the claim.

Four experimental samples of flour, whose composition was definitely known as far as the wheat from which they were milled and their

constituent streams were concerned, were prepared. Each type of flour was subjected to three degrees of bleaching, thus making three samples for each kind. A five milligram portion was, after preparation, placed under a microscope and the bran and hairy particles therein counted. The flours used were a 70 per cent patent, a 90 per cent patent, a 97.5 per cent flour, a 27.5 per cent flour and a 2.5 per cent flour.

Flour A, the 70 per cent, consisted of the following streams:

First sizings flour
Second sizings flour
First middlings flour
Second middlings flour
Third middlings flour
Fourth middlings flour
Fifth middlings flour
Fine tailings flour
Coarse tailings flour

Flour B, the 90 per cent:

First sizings flour
Second sizings flour
First middlings flour
Second middlings flour
Third middlings flour
Fourth middlings flour
Fifth middlings flour
Fine tailings flour
Coarse tailings flour
Second break flour
Third break flour
Fourth break flour
Sharp section (middlings)
Cut-off flour (middlings)
Sixth middlings flour
Seventh middlings flour
Eighth middlings flour

Flour C, the 97.5 per cent:

First sizings flour
Second sizings flour
First middlings flour
Second middlings flour
Third middlings flour
Fourth break flour
Sharp section (middlings)
Cut-off flour (middlings)
Sixth middlings flour
Seventh middlings flour
Fourth middlings flour
Fifth middlings flour
Fine tailings flour
Coarse tailings flour
Second break flour
Third break flour
Eighth middlings flour
First break flour
Fifth break flour
Ninth middlings flour
Flour from dust collecting reels

Flour D, the 27.5 per cent:

Second break flour
Third break flour
Fourth break flour
Sharp section.
Cut-off our (middlings)
Sixth middlings flour
Eighth middlings flour
First break flour
Fifth break flour
Ninth break flour
Flour from dust collect
Seventh middlings flour

Flour E, the 2.5 per cent:

Bran duster flour
Cut-off flour from seventh middlings
Shorts duster flour
Cut-off flour from ninth middlings

Flour	Not bleached			Light Bleach			Heavy Bleach		
	Bran parts	Hairs	Total	Bran parts	Hairs	Total	Bran parts	Hairs	Total
1 "A"....	29	13	42	32	13	45	31	18	49
2 "A"....	10	12	22	12	9	21	.....	.....	.....
1 "B"....	50	26	76	51	22	73	50	28	78
2 "B"....	32	31	63	31	28	59	28	34	62
1 "C"....	42	28	70	43	29	72	52	26	78
2 "C"....	57	39	96	43	29	72	28	30	58
1 "D"....	76	45	121	55	49	104	61	47	108
2 "D"....	56	65	121	49	51	100	51	40	91
2 "E"....	310	129	439	340	131	471	310	112	422
Totals..	662	388	1050	656	361	1017	611	335	946

It will be noted, that in spite of scientific care, investigators were unable to find as many offal particles in lightly bleached flour as they did in the same flour unbleached, while the average as between unbleached and heavily bleached was about the same. Heavily bleached sample 2—"A" became infested with weevils and was not counted.

The Miller's Viewpoint and that of the Public

I am quite ready to concede that, from the miller's standpoint, bleaching is desirable. It enables him to produce uniformly flour of a color he thinks attractive, and within certain limits, regardless of the wheat he is milling.

It also enables mills to produce acceptable flour from newly harvested wheats, or unsweated grain, which would be difficult to handle without bleaching.

Some millers concede that it enables them to use a longer extraction, others deny that, and possibly both are honest in their statements based upon individual experience.

Millers admit that bleaching may be and has been abused. It is generally insisted on, however, that at the present time competition is so keen that any attempt to cover up or conceal real inferiority in flour by bleaching would spell disaster for the mill that tried it.

In reply to this, it may be said that competition is keen in all food lines and still the market abounds with inferior quality goods. It seems that, if one manufacturer of a poor grade goes out of business, there is always another to take his place. Competition is never sufficiently keen to eliminate frauds and near-frauds.

The Public Standpoint

The public desires white flour. Bleaching makes the color of flour white, but it gives to cheaper and inferior grades the color of better flour.

The public demands large loaves of bread. Bleaching has a tendency to make larger loaves from the same amount of dough, but a

well-risen loaf is very desirable; but this should not be carried to extremes. There is nothing to be gained for the public, if they receive a greater quantity of air and no larger amount of food value in their bread purchases. I believe a loaf of bread, made from good flour, and with moderate volume, to be better than a loaf which has been puffed up and expanded with all the air it can possibly carry.

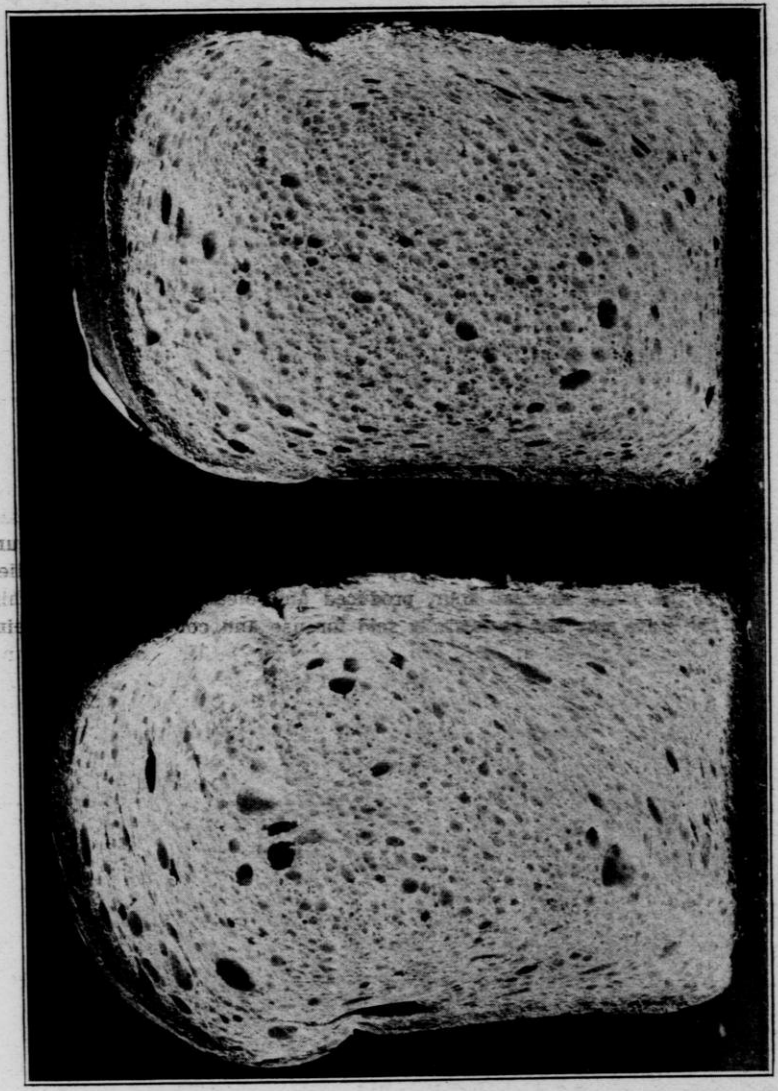
From the Standpoint of Health

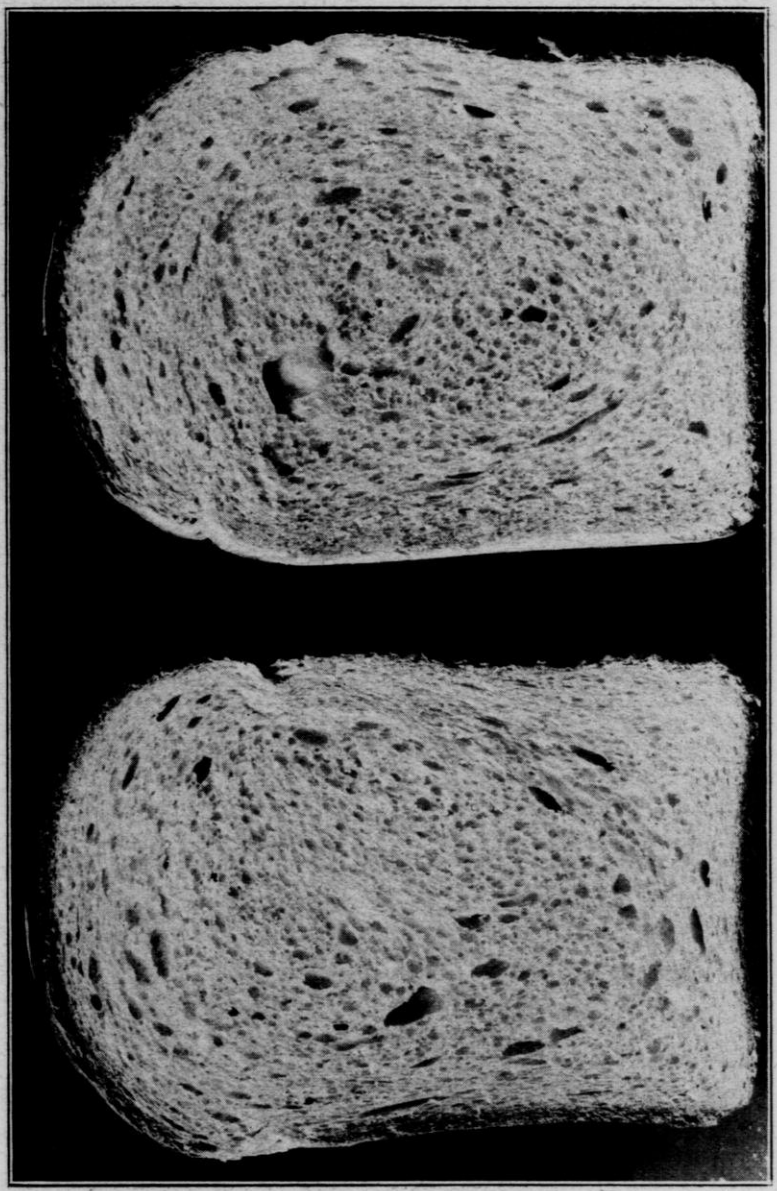
Our department is not equipped and has not the facilities or means to do research work along the lines whether or not bleached flour may be detrimental to health. In some circles it is assumed that the government failing to prove that bleached flour is injurious to health, it is certain that it cannot be harmful. I am not prepared to admit a certainty. Nowhere does there seem to be sufficient carefully recorded experience in regard to flour bleached with the various agents used and its effect upon the young and the old, the well and the sick, to establish as an absolute fact that the continued use for a lifetime of flour bleached with poisonous substances cannot prove harmful.

Conditions that Call for Correction

A highly unsatisfactory condition has developed as to the sale of bleached flour within the state. Due to Federal regulations, it may be imported into the state and sold by the importer in original, unbroken packages to bakers, restaurants, hotels and private families in the state, whereas flour, produced and bleached in mills within the state may not be lawfully sold for use and consumption therein. This clearly is an unfair discrimination against Wisconsin millers, and it is to be hoped that the legislature will find a remedy. Due to the same causes, similar discriminations exist in the retail trade of the state. Having given the matter much consideration I am of the opinion that the interests of the people of the state, including the producers of flour therein, can best be served by a requirement that all artificially bleached flour must be plainly and conspicuously marked so as to advise persons purchasing, or intending to purchase the same, that it has been so bleached, and giving the common name of the bleaching agent or agents used. I believe consumers of flour, in view of the effects of bleaching and the agents used, to be entitled to this information. In the absence of such information bleaching may be, and will be, used to deceive and defraud. This theory also appears to be in line with the best thought in the milling industry. "It will be a great gain for the baking and milling industries alike when every sack of artificially bleached flour sold in the United States or for export is clearly branded as such with the name of the bleaching agent added." Editorial, Northwestern Miller, December 27, 1922, page 1420.

It also seems that, when bakers make and sell bread from bleached flour, consumers in fairness ought to be suitably advised of that fact. This would give purchasers of food an opportunity knowingly to choose that which they wish to buy.





REPORT OF JOHN E. BOETTCHER

Chief, Butter Division

HONORABLE J. Q. EMERY,
Dairy and Food Commissioner.

Dear Sir: The following is my report from March 1, 1921, when appointed Chief of Butter Division, to June 30, 1922.

During this time, I have worked with the inspectors in connection with creamery, cheese factory, receiving stations, city milk and dairy inspections and have worked with and assisted creamery operators and butter makers in solving special problems that at times confront them in their work.

Considerable time was spent in preparing court cases, in court and attending conferences, national, state and local butter makers' meetings; also investigating complaints from different parts of the state, charging various kinds of violation of the dairy and food laws. Have acted with others as judge in the scorings of butter at the dairy school of the University of Wisconsin.

In my work among the creameries I find that many creamery secretaries and butter makers, especially butter makers, are not keeping daily records. Such records should consist of the total pounds of milk or cream received, the number of pounds of butter fat, the number of pounds of butter made, the pounds of fat lost in the butter-milk, the fat and moisture content of the butter made, and the overrun for the day. This will enable a creamery man or butter maker to keep a check on his daily work and will be of assistance to him in locating and overcoming losses that often occur in the course of handling the milk and cream and the manufacture of the butter. If left to run until the end of the period for which payment is made, in many cases the losses would amount to a considerable sum.

It is the duty of every butter maker, in justice to himself and to his employer, to keep these records daily in order that efficiency may be attained.

In my work among the receiving stations and creameries, I find that the quality of much of the cream received should be improved. To a large degree, the improvement of the raw material rests with the butter maker or operator, as he is not obligated to accept any cream that is not fit to be manufactured into butter. So long as poor cream, or cream from unclean cans, is accepted at the price paid for good, clean cream, improvement in the quality of cream cannot be expected. But just as soon as the patron learns that a lower price will be paid for his poor cream, he will begin to make improvement.

Poor butter not only brings a low price, but it is hard to dispose of and is generally displaced by a substitute by the consumer.

At present one farmer delivers cream from which extra butter can be made, another farmer delivers cream capable of making only a second grade of butter, but both receive the same price, even at creameries where "grading" is practiced. This is unfair and unjust to the farmer delivering cream from which extra butter can be made. What incentive is there for a farmer to deliver good, clean cream when his neighbor who delivers poor cream gets the same price for it? This is where a good operator can do good work in educating his patrons to produce a good quality of cream by paying a higher price for it. Let them learn that cream, poor in quality, never can be made into an extra grade of butter, and that the consumer is more particular than ever as to quality.

A great deal of good has been accomplished by the enforcement of our dairy laws. For years our dairy laws have been strengthened from time to time and the men charged with their enforcement have worked faithfully to maintain high quality in our dairy products. They can to a certain degree insure the purity, but they can not regulate the grade.

I am glad to report that the number of people who appreciate the work of the Dairy and Food Commission is rapidly increasing and that there has been a general improvement in all conditions over which the department has jurisdiction.

MODERN CHEESE FACTORY VENTILATION

R. R. CROSBY

In discussing the subject, Modern Cheese Factory Ventilation, I do not intend to describe or advise any particular combination of fans, flues, openings and dampers, because there are probably not two factories in the state where conditions affecting ventilation are the same. Recommending any cut and dried system for all factories would be like treating all diseases with the same medicine, or like trying to use exactly the same methods every day in making cheese, regardless of the amount, temperature, or ripeness of the milk. It would be a failure.

I will try to outline:

1. What is meant by ventilation.
2. What we expect to accomplish when we attempt to ventilate.
3. What ventilation depends on, or the principles back of it, and a short discussion of the means of putting these principles into practice.
4. And then, if possible, to have you feel as I do that good ventilation is as necessary to the cheese factory as the vat or kettle.

Now as to what ventilation is. Ventilation, as the word is generally used, may be called the process of getting fresh air into a room, in sufficient amounts, of removing undesirable air, gases, odors, moisture, or dust, and at the same time maintaining the proper temperature. If this definition is correct, ventilation is efficient when all that is expected of it has been accomplished. In the bank of the Mississippi River at St. Paul are some dark and very moist caves where large crops of mushrooms are grown commercially. Although no special devices are provided, these caves are surely efficiently ventilated because the small amounts of fresh air and light which do get in are the right amounts, and the correct amounts of moisture and heat are left in the caves.

It is, therefore, results we are after, but the desired results are very seldom obtained as easily as they are in the mushroom caves. In fact, in cheese factories, it seems that we meet as many problems as any one ever meets when trying to ventilate. All probably agree that factories should be ventilated, but let us consider what we hope to accomplish by doing so.

In the first place, we want to get rid of excess moisture. There is always some moisture in the air and a certain amount is necessary. If the air is too dry, we have such results as the pulling apart of glued furniture joints, the drying of the linings of our noses and

throats, which drying often has serious results on our health, and in the curing room that is too dry, we have one of the common causes of checked rinds. Some types of cheese have to be in a very moist air for curing, in which cases it is often necessary to get more moisture into the air rather than to dry it. But most of the problem of factory ventilation relates to the decreasing of the amount of moisture in the air. This water may exist in two forms, a very small drop which we can see and may call steam and as vapor which we cannot see. Water vapor resembles a gas and is in the air just as truly as the gas in the cylinders of a motor before the explosions.

The free steam in an unventilated room may condense on the surfaces of objects or may evaporate and become water vapor. The vapor cannot increase beyond a certain amount for any given temperature, and when the temperature reaches that point, the air is said to be saturated with moisture, or to have relative humidity of 100 per cent. The air in an unventilated factory may actually hold almost this amount at times; it may be like a saturated sponge just ready to drip. But there does not have to be anywhere near this much present to cause damage. Normally, the air in this climate has a relative humidity of about 70 per cent and an increase of only 5 to 10 per cent over this amount is harmful, if it is not removed by ventilation. By this excess moisture being in the air, there is greater condensation on cold surfaces, to add to the water which may already have condensed there from the free steam. The drying of all wet surfaces of the factory and utensils is greatly slowed down. Normal drying of the cheese is hindered. Woodwork of the factory decays rapidly. Wooden utensils and equipment decay. Coat after coat of paint may be ruined. Pipes and all metal equipment rust and corrode. The saving of machinery and equipment from preventable destruction is good business at any time, but more especially now that their cost is high. Mold growth appears on walls, ceilings, shelves and cheese. As moisture is one of the greatest factors in promoting the growth of mold, the checking of mold in a poorly ventilated factory is almost impossible. Disinfecting, burning sulphur candles, scrubbing and scraping cannot replace ventilation to keep down mold, because the spores or seeds of mold are practically everywhere, especially indoors.

Moisture may collect in sufficient quantities on the ceiling and pipes to drip into milk or other food products, hardly a sanitary condition. Moisture may also induce mold growth to take place in starter. Probably many a good starter has been ruind by going "Frowy" or moldy by infection from the air. And last to be mentioned, but not least in importance, is the result of damp air on the people who work in the factory. Clothing is never then dry and whenever a draft at the intake strikes a person, or he goes into cold air for any reason, he is subjecting himself to colds and rheumatism, and even paving the way to pneumonia and tuberculosis. This is not theory or supposition, for you and I have seen maker after maker

working against the handicap of chronic rheumatism, or suffering from acute rheumatism, or have seen them with colds which hung on until pneumonia or tuberculosis resulted. We have seen them go into other work against their desire, or have seen them forced to give up their place unable to do any work, thereby depriving the industry of the services of many good makers, often of its best. These men are disabled veterans of the dairy industry just as truly as some are disabled veterans of the World War. And the trouble does not always end merely with disability; there are far too many fatalities; far too many who die as a direct result of working in damp factories. Men may become hardened to stand a great deal, but there is always a breaking point.

Besides removing excess moisture and checking its accompanying evils of rust, decay, mold growth, and disease, we also by ventilating expect to provide fresh air for those working in the factory, replace the air which has once been breathed as well as to remove objectionable gases and odors. Removal of the carbon dioxide breathed out by men and animals is not now emphasized as much as it used to be as one of the great reasons for ventilating. If a great number of people or animals remain in a tightly closed room very long, removal of carbon dioxide may become important; but even then the greatest reason for ventilating is still the removal of the moisture and often of the heat given off from lungs and bodies of those in the room. With only one or two working in a cheese factory, removal of the carbon dioxide is somewhat of a consideration, but not the chief one. Such fresh air, however, provides more sanitary conditions in which to produce and handle cheese and whey cream than would exist if these products were manufactured in a tightly closed factory, where the air had been breathed over and over again, or where odors accumulated rather than being removed as they were produced. Removal of dust by ventilation from some mines and from some kinds of factories is necessary, but is hardly a consideration in a cheese factory.

In accomplishing what we expect to as thus far given in cheese factory ventilation, we must do so without creating drafts and must maintain a desirable temperature. In going about this, what facts and principles must we depend upon and how should we attempt to work out the principles in practice?

Above all, we should have a system under our control, on which we may regulate to varying conditions over which we have no control. If parts of the system are well regulated automatically so much the better for us. A system which cannot be controlled is much like the outside wind.

We may place the elements of a controlled system of ventilation for cheese factories in the following order which is entirely for convenience and is not intended to give them in their order of importance.

1. The building itself.
2. The motive force required.
3. The fan.

4. Heat.
5. The outlet flues.
6. The inlet flues.
7. Miscellaneous devices—sub-earth duct, etc.
8. The human element.

The building itself is a very important part of every ventilation system, so important a part that if it is not of the right construction, all the other elements of the system could be of the best and no ventilation would be accomplished. The room or building to be ventilated must have tight walls and ceilings and have them, if at all possible, containing a dead air space. In getting tight walls, it is necessary that all windows be tight as to frames, sash and glass, and that doors fit well. It is better to have storm sash and doors for winter if possible. Roofing or tar paper nailed on a screen door is good. If possible there should be a wooden door between the weigh room and make room, with an outside door, of course, on the weigh room. Trap doors going into the garret or overhead rooms should be kept closed. If there is only a garret above the factory rooms, ceiling joists should by all means be covered with a tight floor. All breaks in the siding or inside sheathing of frame buildings should be promptly repaired and as the lower boards rot loose they should be replaced with sound lumber. For other reasons than ventilation keeping a building in repair is a good investment and not an expense. A well made frame building is very satisfactory to ventilate. Paper should by all means be placed under the outer siding and the inside lumber should be of good grade and be tongued and grooved rather than plain or matched as ship-lap. For the side walls, six-inch white pine flooring is probably as good as anything.

If the walls be of concrete block, tile, or brick, all cement and mortar work should be done as well as possible—air leaks may make ventilation impossible and waste expensive fuel. Walls of unglazed tile seldom are air-tight unless outside stucco finish and inside plaster are put on, when a wall of such tile becomes very satisfactory. Solid concrete blocks or stones are hardly the best things for cheese factory walls. If they are used, a course of brick inside, leaving an air space between, or lath and plaster on two-inch strips are necessary, if ventilation is to be efficient. Hollow concrete blocks or glazed tile are often satisfactory, especially if they have interlocking joints. In a brick wall there should always be two courses of brick with an air space between. The air space should really hold dead air. In a building which I know, shingles could be stuck in around the window frames and all along above the inside course of brick was a space which had not been closed with mortar. An otherwise complete system of ventilation was installed, but was a failure until these cracks were stopped, after which it worked successfully.

Why spend all this time discussing the building, why is it so important a part of the system? Here are the reasons. No real, year-around ventilation was ever accomplished by drafts. Drafts may be called the rather strong winds or air currents that blow directly into

a factory through a door, window, or crevice. In the summer when conserving heat is not a problem, make room windows and doors may be opened, and walls which are not tight may then be no handicap. Drafts will blow through and we get somewhat of a change of air. But even then we all know that there seems to be one or more hot stuffy corners where there appears to be no change of air. We therefore must have a building that will admit no drafts as part of a ventilation system which is to operate when we do not find it possible to leave the doors or windows open.

We must have a dead air space around the room because many materials of which buildings are constructed are excellent conductors of heat. A single wall becomes so chilled in cold weather, that as soon as the air inside the factory touches the cold walls or ceiling, it contracts and much of the moisture it was carrying is at once condensed and settles on the cold surfaces. It either freezes or furnishes favorable location for mold, decay, odors, and other unsanitary conditions. Warm air being able to hold considerably more moisture than cold air, it will pass on by a warm wall with its load of moisture and eventually out of the room through the ventilating flues.

Cold walls may also, by cooling the air at the wrong place in the room, interfere with the direction of currents circulating in the right direction up to that time to produce good ventilation. Walls not containing a dead air space also permit enormous heat loss to take place through them which makes the double wall a distinct gain economically.

The next element of ventilation is motive force. Movement of air or any other matter requires force and we cannot ventilate unless we have a moving or motive force. Like running even a Ford without an engine, it simply cannot be done, and when the motive force stops acting, ventilation ceases.

In so-called forced ventilation, the ventilation currents are caused by a fan run either directly by an electric motor, or from a power shaft. Forced ventilation of this kind is essential under many conditions in industry, as in mining, in factories where dust or harmful gases escape into the air, and where the heat is high, as in bakery, hotel, and restaurant kitchens. Creameries find fans almost a necessity, because of the great amounts of steam set free when cream is pasteurized and when churns and ripeners are washed. But as soon as the clouds of steam are gone the fan must usually be stopped at once or heat which is needed in the room will also be forced out. It is doubtful if a fan is advisable in the average cheese factory. In many, it is impractical because of there being no suitable and available power.

Leaving the forced draft system, we come now to the so-called natural draft systems. Here we must also have a motive force or we get no movement of air through the flues. We have available three such natural forces. Sometimes any two or all three of them may be acting at once. They may not only act to help ventilation, but, unless they are limited or controlled in so far as they affect

the space to be ventilated, may hinder ventilation or even go so far as to reverse air currents in the flues, producing what is called a back-draft.

One of these natural forces is wind pressure and may come into play when the wind is blowing directly against the side of a building to force air through the intake flues. This force varies with every change in the velocity or strength of the wind and with every change in direction of the wind. Sometimes we have no wind and sometimes a gale of thirty miles an hour or more. Wind may come from any side or corner of the building. Because of this great variation, wind pressure, while it affects ventilation, cannot be depended upon as the chief motive force.

Wind suction is another of the forces available and as we consider it, is the drawing of the air through a flue by the wind passing across its top or outer end. If this suction is caused in the outlet flues, we have a current of air established in the right direction. If, however, suction is caused through an inlet flue, we have a current established in the wrong direction, or we have a back-draft. If back-draft is taking place in one or more inlet flues, and atmospheric conditions are right, there is apt to be a back-draft down the outlet flues, for air will enter the factory to replace that drawn out at the inlets. There have been various devices put on the market for preventing back-draft.

Wind suction, like wind pressure, varies with every change in the strength of the wind and is therefore hardly more dependable than wind pressure as the primary motive force even though it does play a part in every natural draft system.

We now come to the third and last force available, which we will call temperature difference. Under ordinary conditions heating air will expand it and hence a cubic foot of warm air will weigh less than a cubic foot of cold air, giving warmed air a tendency to rise. Heating air through 1 degree F. expands it about one cubic foot for every 491 cubic feet or about one five-hundredth of its volume, which seems like a small amount. But as the expansion continues for every degree the air is heated, the increase in volume is considerable when there is a rise of 5 or 10 degrees in temperature and it is enough to cause the heated air to rise easily. The currents caused by this rising of warm air and falling of cold air are called convection currents. As there is practically always a source of heat in a building to be ventilated, such as the natural heat from the cattle in a stable, or the heat artificially produced in a cheese factory and because the supply of heat is fairly constant or is more under control than wind pressure and wind suction, it is, for most natural draft systems of ventilation, the heat produced within the building which is depended upon for moving the air. Heat is therefore a necessary element in a ventilation system.

We now come to the question of flues. As I said in the beginning, it is not my purpose to advise any particular arrangement or combination of flues. No one could do so with any assurance at all of the arrangement recommended being successful. There are, however, some general facts which may be considered.

About thirty-five years ago, Professor F. H. King, of the Wisconsin College of Agriculture, devised a system of ventilation for barns. A few others had made some study of the subject, but he may be called a real pioneer in the science and art of barn ventilation. The ideas of that system are in general use today and practically all modern systems of natural draft ventilation are based on that system.

In the original King System, the warm, foul air, moisture, etc., from the room to be ventilated was conducted up through an outlet flue going through the roof. The lower end of the flue extended well down toward the floor, but it was advised that there be an opening in the outlet flue near the ceiling, the opening having damper or shutter. By the flue going to within a foot or two from the floor it was expected to conserve heat in the room by drawing off the colder lower air. Then by having an opening into the flue near the ceiling with the damper open as needed, it was thought possible to cool the room more efficiently in hot weather. Many of these floor flues are in successful operation today and many are being installed. But it seems best that there should always be ceiling openings in connection with the floor flues, either as openings higher up in the floor flues or as openings from which separate flues lead. Some are even completely decarding the floor flues.

Many of the outlet flues, whether leading from near the floor or from the ceiling, were formerly made of wood. They were made with tight sides, as all flues should be. Air leaking into the flues through cracks and holes causes cross or back currents which check or entirely stop the flow of air up the outlet flue. Properly made wooden flues were insulated by being made with paper between two thicknesses of lumber and it is best today to insulate flues where exposed for any distance in very cold garrets or rooms above the ceiling. This is to prevent condensation of moisture on the cold inside surface of the flues. But even when insulated, the wooden flue absorbed moisture as any wood will, when there is excess moisture in the nearby air. I have seen wooden flues in time become wet, slimy, foul and unsanitary. The corners in the wooden flues have also been considered a handicap to the upward passage of air, because for a given area they presented surface for friction and condensation, and because eddies were apt to form in the corners working against the air going up. It seems better, therefore, to use round galvanized iron flues, insulating them where necessary by asbestos, felt or boxing of some kind. If square flues are used below the ceiling of the room, it is for appearance and convenience, but they are often somewhat larger than the round flues above the ceiling to make up for their lower efficiency.

An outlet flue should always have a reasonable length, as its efficiency is somewhat dependent on its length. But there are disadvantages to extending it above the roof of the building, as the part of the flue above the roof is then exposed to the cold, and great condensation of moisture in the flue may take place—the moisture being the very thing we are trying to get rid of by having it pass out with the air instead of condensing in the flue. A flue extended

above the roof is also more exposed to wind suction, which we have seen is so variable that it cannot be considered the satisfactory primary force to draw air up through the flue.

An outlet flue should always have a cowl or weather cap of some kind at its upper end. Rain and snow are, of course, thus kept out of the flue. A disadvantage of the revolving cowl on a cheese factory is that some of the large amount of moisture at times going through the outlet may condense and freeze where the cowl revolved. If the cowl were thus to be frozen in places a change in the wind might result in a very strong cold draft coming down through the outlet. I will frankly say that I believe the commercial ventilator heads better than the great majority of homemade heads, as they are better designed to prevent back-draft.

The intake flues admit the air through the walls, usually near the ceiling although systems have been devised where the intake flues were in other places. In the Rutherford system they were near the floor line. In the system as designed by Professor King and in many systems installed today, the outside end of the intake flue is three feet or more lower than its inside opening, which is just below the ceiling. This was done with the idea of trapping the warm air in the room, of breaking the force of the cold air entering the room when wind pressure was high, and of decreasing the tendency to back-draft. These flues were provided with slides or dampers. Some systems now being installed have practically a straight intake flue, the downward turn being omitted. But in these flues are various parts designed to act as baffles against air coming in with too much force, and to automatically prevent back-draft.

Two common structural causes for the failure of flues to ventilate a room are locating the flues in the wrong place and having them too small. Some do not have enough flues, which is similar to having them too small, as the total capacity of all flues is insufficient in either case. Only a few words as to location of the flues. An extreme case of inefficient location would be to have all the intakes and all the outlets in one corner of a room—the air at the other end might not be changed at all. Flues should be located so that convection currents will circulate in all parts of the room or cover all of the floor space. And, of course, flues should be large enough. It is far better to have them too large than too small.

And lastly, but not least, there is the human element in every system. The most complete and elaborate set of flues it is possible to install is not going to work as it should if a man neglects his duties. I have seen many systems which were installed and paid for and then absolutely neglected. I have gone into factories to find them full of heat or steam and all dampers closed. The men in charge must see the dampers are closed when they should be and opened when they should be, or the expense and labor of putting in the system may as well not have been spent.

If a whey tank is located in a separate room, very foul and unsanitary conditions are created, if that room is unventilated. Such conditions are especially objectionable and are unlawful if the whey is to be skimmed.

In the making room, it is common practice to close all dampers at night. Besides saving fuel and steam, the prompt repairing of leaks in steam lines is a great help to any ventilating system.

In the curing room, conditions should be such that a uniform temperature results. The curing room must be kept cool in summer and warm in winter. Properly built walls are important in this, but ventilation is also essential. Summertime ventilation is sometimes accomplished by opening the windows at night only, but even here it seems agreed that a more constant but slow change of air would be better and that a more efficient removal of moisture would take place if such removal is needed, or circulation of moist air, if that is needed, depending on the type of cheese.

The sub-earth air duct is another means of ventilating the curing room and its use has been discussed in previous years at the convention. I believe there are some now who use the sub-earth duct and find it very satisfactory.

A good many of us do not own or expect to own factories, but whatever influence we can exert for the better ventilation of cheese factories will directly help in benefiting the cheese industry. In addition to all the direct benefits to the maker, the factory, and the cheese, there will be the example set to the patrons who have not yet ventilated their barns. Do you know of the healthiest cows or the best flavored and cleanest milk coming from the unventilated barns?

Let us all realize that ventilation is being paid for just as surely when a factory is not ventilated as when it is and often paid for at a greater cost. It is being paid for in the deterioration of the building and equipment, in increased labor and fuel necessity, in decreased efficiency of the maker or decreased in working life of a good maker, and in direct lowering of quality of cheese. Let us consider it just as necessary to ventilate a factory already built as to provide ventilation for a new building. May a factory really be called completed until it is ventilated? Let us notice that many or most of the new factories going up today have ventilation systems installed when they are built, which is a good indication that many men believe that they may as well have the advantages of ventilation as long as these advantages are paid for whether they are there or not.

REPORT OF GEORGE WARNER

Chief Inspector of Weights and Measures

HON. J. Q. EMERY,
Dairy and Food Commissioner.

Ex-Officio State Superintendent of Weights and Measures.

Dear Sir: I hereby submit a report showing the work done by the state and city departments of weights and measures for the fiscal years ending June 30, 1921, and June 30, 1922, respectively. In this report an effort has been made to stress some of the more important features of the work and to call attention to some of the newer problems that sealers of weights and measures are confronted with. Portions of the report are in tabular form and each general subject is indicated by a suitable heading.

Field and Office Mechanical Work—State Department

Three tables for each year have been prepared showing the mechanical work performed by the state weights and measures inspectors, the state creamery and cheese factory inspectors, and the work performed in the office of the chief inspector of weights and measures. The mechanical work includes the actual inspection and testing of scales, measures, pumps and other weighing or measuring devices.

The usual plan of testing has been followed during the past two years. Using this plan two inspectors work together using light automobile trucks from April to December. During this time all of the wagon, hopper, and other larger scales and gasoline pumps are tested and necessary try-out work done.

During the balance of the year each inspector works alone in his territory doing light inspection work which consists chiefly in inspecting and testing counter, computing and other small scales, druggists' graduates, liquid and linear measures, and any other small weighing or measuring devices, and in doing try-out work. The above plan of work seems to be the most economical, practical, and efficient when consideration is given to the equipment with which the department is at present provided. A general description of the equipment is given under the appropriate heading.

During the year ending June 30, 1922, "appliances tested" is less than for 1921. This is largely due to the fact that there were several vacancies caused by resignations of inspectors and their places were not filled immediately, and also to the greater amount of time spent in testing gasoline measuring pumps. Over two thousand more liquid measuring devices, mostly gasoline pumps, were tested in the

past year than in the year previous. The great necessity for this kind of inspectional work is shown by the Dairy and Food Commissioner's report in his reference to "gasoline measuring pumps." The percentage of equipment which has been sealed for the year ending June 30, 1921, compares very favorably with the previous years, being 95.42 for 1919, 95.97 for 1920 and 95.95+ for 1921. However, for the year ending June 30, 1922, the percentage of sealed equipment is only 94.16. This lower percentage of sealed equipment is due to the greater number of pumps being tested and found incorrect and the increase in automatic dial scales, which scales when tested showed a large percentage of inaccuracy. It is, therefore, apparent that much attention must be given to the inspection and testing of this new apparatus if the percentage of sealed appliances is to be kept at a maximum.

SUMMARY OF MECHANICAL WORK PERFORMED BY STATE DEPARTMENT FIELD INSPECTORS FOR FISCAL YEAR ENDING JUNE 30, 1921

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Less than 2 lbs.	1562	68	79	56	1697
2 lbs. to 350 lbs.	11,583	662	352	139	12,074
350 lbs. to 3,500 lbs.	4,764	266	226	26	5,016
Over 3,500 lbs.	1,782	98	342	7	2,131
Weights	55,402	383	358	528	56,288
Measures:					
Linear	7,654	145	25	94	7,773
Liquid	25,708	420	422	1,680	27,810
Liq. Meas. Pumps	1,321	302	291	2	1,614
Dry	3				3
Totals	109,779	2,344	2,095	2,532	114,406

SUMMARY

Weights and Measures:

Establishments inspected	11,553
Appliances tested	114,406
Establishments tried out	2,375
Packages weighed	12,497
Packages short or misbranded	799
Sanitary inspection	496

Note—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

SUMMARY OF MECHANICAL WORK PERFORMED BY STATE DEPARTMENT FIELD INSPECTORS FOR FISCAL YEAR ENDING JUNE 30, 1922

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Less than 2 lbs.	1,365	39	71	34	1,470
2 lbs. to 350 lbs.	9,148	1,159	621	186	9,955
350 lbs. to 3,500 lbs.	3,976	65	226	24	4,226
Over 3,500 lbs.	1,341	49	333	8	1,682
Weights	44,451	369	168	581	45,200
Measures:					
Linear	5,263	162	13	149	5,425
Liquid	18,046	165	197	2,165	20,408
Liq. Meas. Pumps	3,044	577	528	59	3,631
Dry	7	.....	.....	2	9
Totals	86,641	2,685	2,157	3,208	92,006

SUMMARY

Weights and Measures:

Establishments inspected	11,053
Appliances tested	92,006
Establishments tried out	1,489
Packages weighed	10,441

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

SUMMARY OF MECHANICAL WORK PERFORMED BY STATE CREAMERY AND CHEESE FACTORY INSPECTORS FOR FISCAL YEAR ENDING JUNE 30, 1921

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Totals
Scales:					
Less than 2 lbs.	185	9	18	4	207
2 lbs. to 350 lbs.	1,034	195	85	27	1,146
350 lbs. to 3,500 lbs.	1,625	356	194	20	1,839
Over 3,500 lbs.	64	2	1	.....	65
Weights	7,682	599	387	142	8,211
Measures:					
Linear	.....	.....	.....	.....	.....
Liquid	.....	.....	.....	.....	.....
Liq. Meas. Pumps	.....	.....	.....	.....	.....
Test Bottles	.....	.....	.....	32	39
Totals	10,590	1,161	685	232	11,507

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

SUMMARY OF MECHANICAL WORK PERFORMED BY STATE CREAMERY AND CHEESE FACTORY INSPECTORS FOR FISCAL YEAR ENDING JUNE 30, 1922

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Less than 2 lbs.	107	.....	4	1	112
2 lbs. to 350 lbs.	857	113	95	15	967
350 lbs. to 3,500 lbs.	1,388	154	108	.....	1,496
Over 3,500 lbs.	41	1	1	.....	42
Weights	6,588	333	189	43	6,820
Measures:					
Linear	.....	.....	.....	.....	.....
Liquid	.....	.....	.....	.....	.....
Liq. Meas. Pumps	.....	.....	.....	.....	.....
Totals	8,981	601	397	59	9,437

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

SUMMARY OF MECHANICAL WORK PERFORMED IN THE OFFICE AND NOT INCLUDED IN FIELD INSPECTOR'S SUMMARY FOR FISCAL YEAR ENDING JUNE 30, 1921

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Less than 2 lbs.	133	25	7	.....	140
2 lbs. to 350 lbs.	251	1	11	.....	262
350 lbs. to 3,500 lbs.	.....	.....	.....	.....	.....
Over 3,500 lbs.	.....	.....	.....	.....	.....
Weights	333	23	3	.....	336
Measures:					
Linear	1	.....	.....	.....	1
Liquid	7	.....	1	.....	8
Liq. Meas. Pumps	.....	.....	.....	.....	.....
Totals	725	49	22	.....	747

SUMMARY OF MECHANICAL WORK PERFORMED IN THE OFFICE AND NOT INCLUDED IN FIELD INSPECTOR'S SUMMARY FOR FISCAL YEAR ENDING JUNE 30, 1922

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Less than 2 lbs.	113	2	11	.....	124
2 lbs. to 350 lbs.	57	3	2	.....	59
350 lbs. to 3,500 lbs.	.....	.....	.....	.....	.....
Over 3,500 lbs.	.....	.....	.....	.....	.....
Weights	362	28	13	5	380
Measures:					
Linear	7	.....	.....	.....	7
Liquid	22	.....	1	4	27
Liq. Meas. Pumps	.....	.....	.....	.....	.....
Totals	561	33	27	9	597

MILK BOTTLES

Sealed	Condemned	Total
13	72	85

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

Supervisional or Try-out Work

Try-out work consists of inspecting or reweighing packages, parcels, loads or amounts of commodities put up for sale, or sold, to determine whether or not the represented amount is correct, and on such packages as are required by law to be labeled to see that the label is in compliance with the law. There is a special provision in the law that requires that all sales of coal, charcoal, or coke be accompanied by a delivering ticket showing the gross, tare and net weight, and the name of the purchaser and the name of the dealer from whom purchased. It further provides that coal, charcoal, or coke cannot be sold in any other manner than by weight. Sealers of weights and measures are, therefore, required not only to make try-outs to determine the weight, but to make supervisional visits to coal dealers' establishments to see that they are issuing tickets in compliance with law. In doing try-out work, sealers are called upon to reweigh or remeasure a vast number and variety of articles. Some of them may be mentioned as follows: to reweigh coal, as above stated, flour, feed, and mill stuffs, potatoes, corn, hay and other farm products, sugar, coffee, tea, meats, cookies, candies, butter, cheese, and other commodities sold by grocers and meat dealers, products of the foundry and factory, such as metals, wheels, nuts, screws, and castings, various kinds of paper, wood, and leather, to remeasure firewood, bottles used for the sale of milk and cream, test bottles and pipettes, liquid commodities sold by dealers, such as syrup, vinegar, gasoline, and various kinds of oils, all kinds, shapes, and descriptions of containers, such as berry boxes, baskets, hampers, wagon boxes used for sale of sand and gravel, twine, cloth, ribbon, thread, thickness of metals, dimensions of rooms, and any commodity sold by liquid or linear measure. The number of these try-outs made by the state inspectors is given in the summary of the mechanical reports for the respective years.

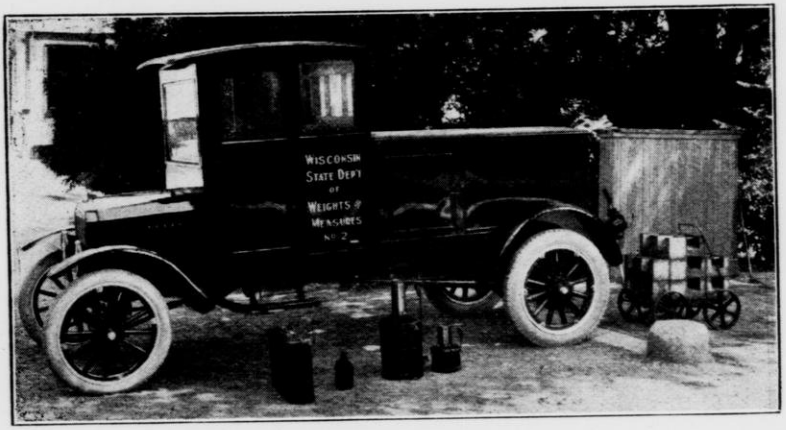
The try-out work, covering such a large field, should receive more attention from the inspectors. However, with the present force, this can not be done unless the mechanical work is to suffer proportionally.

During the two-year period ending June 30, 1922, convictions for violations of the weights and measures law were secured covering a wide range of offenses, some of which were as follows: using a false weight in buying stock, using a false measure in selling gasoline, using a condemned scale, using a condemned measure, using apparatus not sealed, selling less than the quantity represented of lard, fish, pepper, raisins, sugar, coal, candy, meat, beans, pork, selling candy in packages not lawfully labeled, selling honey in unlabeled jars contrary to the terms of law.

Description of Light Automobile Trucks and Cost of Operating

A photograph of truck No. 2 is submitted. This truck was purchased in May, 1922, and replaced a similar one burned in a garage fire in November, 1921. The department is now equipped with four

cars quite similar to the one in the photograph. This car has a specially built body on a Ford, one ton chassis. Ample room is provided for carrying apparatus necessary for the testing of all kinds of scales, measures and pumps. In addition the automobile truck is equipped with an iron weight truck used in moving the weights to different parts of the scale platform. This truck is shown in the photograph on one corner of the platform of the wagon scale under test. The other equipment consists of one and five gallon field standards used in testing gasoline and kerosene measuring pumps, a sealer's portable working case containing all apparatus necessary for testing small scales and small measures, and a small grip containing one five and one ten-pound weight.



In order to test the large wagon and hopper scales, and gasoline pumps with only four trucks in use, it is necessary to keep them in active operation during a period of about seven months when the roads are passable and the large scales are being used. During the winter, a large per cent of the wagon scales are not used and during most winters a great many gasoline pumps are closed. It is necessary at times for an inspector to test some of the wagon scales that are being used during the winter, in which case he ships his weights to the nearest town and hires a conveyance to transport the test weights to the scale. These cases are not very frequent and are mostly on complaints, or to check up on suspicious weights. In the following table is shown a summary of the expenses for operating the trucks for the last two years. For the year ending June 30, 1922, four state-owned trucks were in use and for a short period a truck was rented from the State Highway Department. This was to replace the weights and measures truck burned in the garage fire. A perusal of the table will make apparent the vast saving by the use of state-owned trucks.

COST OF OPERATING WEIGHTS AND MEASURES TRUCKS

June 30, 1920—July 1, 1921

Truck No.	Miles Trav.	Gasoline		Lub. Oil		Hard Oil		Tires		Car Repairs	Storage	Miscellaneous	Total
		Amt. gal.	Cost	Amt. qt.	Cost	Amt. qt.	Cost	Repairs	New				
1	2583	273	$84.67	38	$8.75	7	$1.75	$1.70	$62.40	$12.60	$56.25	$137.06	$365.18
2	2688	323	98.73	84½	23.10	1	.65			58.10	86.00	60.59	327.17
3	3974	417	123.86	135	38.15	1½	.60	5.99		84.90	108.80	29.92	392.28
Total	9245	1013	$307.26	257½	$70.00	9½	$3.00	$7.69	$62.40	$155.60	$251.05	$227.63	$1,084.63

June 30, 1921—July 1, 1922

Truck No.	Miles Trav	Gasoline		Lub. Oil		Hard Oil		Tires		Car Repairs	Storage	Miscellaneous	Total
		Amt. gal.	Cost	Amt. qt.	Cost	Amt. qt.	Cost	Repairs	New				
1	3593	431	$96.76	108	$26.46	17	$4.10	$7.05	$48.79	$23.75	$105.60	$80.53	$393.04
2*	601	48	12.94	1	.85	1	.35			1.00	11.00	11.45	37.59
2**	1708	208	47.48	55	13.90		.05	.35	14.97	39.31	43.77	5.33	165.14
3	2932	321	78.82	66	28.64	14	3.45	.65		4.75	101.75	64.84	282.90
4	3823	314	130.23	105	28.25	40	9.70	9.65	47.16	46.63	94.00	248.62	614.24
Highway Truck		20	3.90									188.63	192.53
Total	12,657	1342	$370.11	335	$98.10	72	$17.65	$17.70	$110.92	$115.44	$356.12	$599.40	$1,685.44

*—New truck replacing truck ** destroyed by fire.

Report on Automatic Dial Scales Made in Pursuance of the Following Resolution

"Resolved, that the Sealers of Weights and Measures of the State of Wisconsin, in convention assembled at the city of Madison, on this 22nd day of June, 1920, are firmly convinced that the automatic dial scales as placed on the market by several manufacturers of scales are not a reliable weighing machine, and recognizing the necessity of accurate weights, we recommend that the State Superintendent of Weights and Measures start a rigid investigation of these weighing instruments to the end that the interests of the public be better safeguarded."

In pursuance of the resolution, the following report was made by the State Department:

"At the time that this resolution was adopted there seemed to be some doubt expressed by the sealers as to the accuracy of automatic dial scales when first assembled at the purchaser's place of business. It was found that in the first tests made on new scales a great percentage of them showed errors.

"The investigation was therefore directed with two objects in view. First, can automatic dial scales such as were sold in Wisconsin during 1920 and prior thereto be adjusted to within the state tolerance when first set up and ready for use? Second, if the first question is answered in the affirmative, then how long will such scales remain accurate under ordinary conditions of use?

"In order to obtain data that would aid in answering the two questions, a blank with space for recording the result of four tests on each scale was sent to the various city sealers of the state. The test covered a period of about one year. The same scales were tested at intervals of from two to three months. Reports from about fifteen cities in different sections of the state were used in the compilation of the report. The scales were in use in such places as mills, sausage factories, ice cream plants, creameries, paper plants, packing companies, machine shops, seed houses, battery companies, steam laundries, iron works, electric companies, drug companies, receiving and shipping rooms, cheese houses, furniture factories, overall factories, soap companies, grass rug companies, rubber companies, poultry houses and shipyards. Tests were made on four different makes of scales. It will be noted, however, that one make of scale has almost the entire field, the other three having only a few scales in commercial use. The tests made are as follows:

On one make of scale 66 reported

First Test 36 sealed	30	condemned for repairs
Second Test 48 sealed	18	condemned for repairs
Third Test 53 sealed, 8 not reported	5	condemned for repairs
Fourth Test 50 sealed, 12 not reported	4	condemned for repairs

Summarizing, 22 scales were correct on all four tests

"Of the thirty-six sealed on the first test, seven were condemned for repairs on the second test. Of the thirty that were condemned for repairs on first test 11 were again condemned for repairs on second test.

"Another make of scale: Two reported, first test one sealed, one condemned for repairs. The one sealed was condemned for repairs on second test and sealed on third and fourth tests. The one condemned for repairs on first test was sealed on next three tests.

"Another make of scale: Five reported first test, three sealed, two condemned for repairs. Two of the sealed ones were sealed on next two tests and both were condemned for repairs on fourth test. One of the sealed ones was condemned on all three of the next tests. Of the two condemned for repairs, one was sealed the next three tests, and one was condemned for repairs on the next two tests and sealed on the fourth test.

"Another make of scale, three reported, two sealed on all four tests, one condemned on first test and sealed on next three tests.

"The result of these tests indicates that automatic dial scales as sold in Wisconsin during 1920 and prior thereto can be adjusted to within the state tolerance. After being adjusted and sealed, a large percentage of them do not remain accurate for a period of one year without the services of a repair man."

Since that time, the Bureau of Standards and the committee on specifications and tolerances of the national conference on weights and measures, conducted an investigation on these types of scales. The results of the investigation have been arranged in tabular form and are given below. The various scales are grouped according to their dial capacities and minimum graduations. The total number of scales of each group tested is shown in the second column. The succeeding columns indicate the number of scales found to have a maximum error up to and including one pound, greater than one pound but not in excess of two pounds, greater than two pounds but not in excess of three pounds, and so on.

This table indicates that 107 scales were tested, 21 were found to have errors of not more than one pound and 26 had errors of not more than two pounds, 18 had errors of not more than three pounds, 10 had errors of not more than four pounds, 7 had errors of not more than five pounds, 16 had errors of not more than ten pounds, 6 had errors of not more than twenty pounds, and 3 had errors of over twenty pounds.

TABLUATED RESULTS OF INVESTIGATION ON AUTOMATIC INDICATING SCALES

Dial Capacity Minimum Graduation	Total Scales	Number of Scales with Errors not greater than							Scales with errors of over 20 lbs.
		1 lb.	2 lbs.	3 lbs.	4 lbs.	5 lbs.	10 lbs.	20 lbs.	
5000/5....	1	0	0	0	0	0	1	0	0
3500/5....	2	1	0	1	0	0	0	0	0
2500/5....	13	1	4	3	3	0	1	0	1
2000/5....	18	0	3	2	2	2	4	3	2
2000/2....	5	1	1	1	2	0	0	0	0
1000/5....	32	2	6	7	2	4	9	2	0
1000/2....	1	0	0	1	0	0	0	0	0
1000/1....	15	7	5	2	0	1	0	0	0
1200/1....	1	1	0	0	0	0	0	0	0
500/1....	2	1	0	1	0	0	0	0	0
500/1/2	4	2	1	0	0	0	0	1	0
400/2....	2	0	2	0	0	0	0	0	0
400/1....	1	0	0	0	0	0	1	0	0
350/1/2	1	1	0	0	0	0	0	0	0
250/1/2	1	1	0	0	0	0	0	0	0
200/1....	1	0	1	0	0	0	0	0	0
200/1/2..	3	1	2	0	0	0	0	0	0
200/1/4..	3	2	0	0	1	0	0	0	0
125/1/4..	1	0	1	0	0	0	0	0	0
Totals	107	21	26	18	10	7	16	6	3

At the Wisconsin sealers convention, the question of tolerances for these scales was discussed. The Wisconsin tolerance covering these scales is the same as for the corresponding capacity in the beam type, and after discussing the question, the conference voted to retain this tolerance. It was the opinion of the conference, that in Wisconsin the dial scales had in most cases replaced beam scales. Therefore, if the beam scales were in compliance with present tolerances, there was no good reason for allowing a greater tolerance for the dial scales even though they had been in use a few years.

Personnel

During the past two years, a great many changes have taken place in the personnel of both the state and city departments of weights and measures.

Mr. R. W. Smith, chief inspector of weights and measures, resigned in September, 1920, to accept a position with the Bureau of Standards at Washington, D. C. The writer, who was at that time state sealer, was appointed to fill the vacancy.

The vacancy caused by the resignation of William Sterns in June, 1920, was filled in July, 1920, by the appointment of Mr. F. E. Tappins.

Mr. Gordon Winder was appointed in September, 1920, to fill the vacancy caused by the transfer of Mr. Warner.

In October, 1920, Mr. J. M. Kelliher was transferred from the position of state sealer to state food inspector, and during this same month Mr. H. L. Bornheimer resigned as state sealer, thus leaving two vacancies in the weights and measures department.

Mr. S. M. Peebles was appointed to fill one vacancy in November, 1920, and Mr. A. T. Thompson was appointed in January, 1921, to fill the other.

In March, 1921, Mr. J. E. Boettcher was transferred from state sealer to the position of chief of the butter division, and Mr. R. M. Hadley was appointed in May, 1921, to fill the vacancy.

Mr. Gordon Winder resigned in August, 1921, and Mr. C. B. Atwood was appointed in September, 1921, to fill the vacancy.

Mr. S. M. Peebles resigned in December, 1921, and this vacancy was filled by the reappointment of Mr. Gordon Winder in June, 1922.

Nearly thirteen months time was lost between the time of resignations and appointments of the various sealers during the two year period.

There has also been a marked change in the personnel of the city departments as follows:

Beloit, Mr. C. A. Newton appointed city sealer in October, 1920, to fill vacancy caused by resignation of Mr. W. M. Van Lone. Mr. Newton resigned in May, 1922, and at this time (June 30, 1922) there is still a vacancy.

Fond du Lac, Mr. George McEntee resigned as city sealer in May, 1922, and no appointment has been made to fill the vacancy up to this date (June 30, 1922).

Janesville, Mr. J. B. Fountain appointed in January, 1921, to fill vacancy caused by resignation of Mr. W. B. Sullivan. Mr. Fountain resigned in the spring of 1921 and Mr. Glen Snyder was appointed in June, 1921, to fill the vacancy.

Waukesha, Mr. Henry Youmans was appointed in October, 1920, to fill vacancy caused by resignation of Mr. Geo. Kemmer in June, 1920.

Antigo, Mr. A. L. Deleglis appointed in May, 1921, to fill vacancy caused by resignation of Mr. C. S. Lycum in February, 1921. Mr. Deleglis resigned in 1922 (date not given) and since June, 1922, Mr. Frank K. Quimby has been acting as city sealer of weights and measures.

Wauwatosa, passed an ordinance in December, 1921, creating office of city sealer of weights and measures and Mr. Erwin J. Rogers was appointed sealer. Mr. Rogers is also city sealer of West Allis.

Stevens Point has had no sealer during the two year period covered by this report.

The cities of DePere, Two Rivers, Kaukauna and Stoughton have a population of more than 5,000 inhabitants, and are required by

section 1661 to have a city sealer. To date the state weights and measures office has not been notified of any appointment to the position of city sealer in any of the above mentioned cities.

Mechanical Work—City Sealers

Two tables for each year are submitted herewith, showing the mechanical work performed by the city sealers of weights and measures for the two year period ending June 30, 1922. These tabulations are compiled from the quarterly reports submitted to this office by the city sealers in accordance with the provisions of section 1661, subsection 5. The reports show an increasing amount of work done each year over the preceding year. The percentage of sealed apparatus remain about the same for the two year period covered by this report, but shows a small gain over that covered by the yearly report ending June 30, 1920. One table for each year covers the itemized summary of work performed by the city sealers and one table for each year covers the summary by cities and in addition shows the number and condition of the containers tested.

ITEMIZED SUMMARY OF MECHANICAL WORK PERFORMED BY CITY DEPARTMENTS FOR FISCAL YEAR ENDING JUNE 30, 1921

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Counter	3,271	261	90	20	3,381
Hopper	79	7	1	1	81
Suspension	106	11	6	5	117
Computing	6,891	1,149	594	36	7,521
Wagon	622	83	113	5	740
Port. platform	4,211	534	245	52	4,508
Dormant	983	83	126	2	1,111
Spring	1,888	161	222	151	2,261
Torsion	21	.....	.....	1	22
Beam	352	13	8	1	361
Slot machine	317	44	42	9	368
R. R. track	1	.....	.....	.....	1
Prescription	348	19	21	6	375
Jeweler's	26	.....	.....	.....	26
Auto. Dial	53	14	4	.....	57
Miscellaneous	1,682	129	26	56	1,764
Dry Measure	5,780	.....	.....	58	5,838
Liquid Measure	16,793	14	70	494	17,357
Pres. Grad	1,725	.....	.....	91	1,816
Auto Pumps	2,160	233	263	22	2,445
Linear Measure	2,077	5	3	140	2,220
Weights, Avoir	35,517	881	180	274	35,971
Weights, Pres	4,907	210	2	604	5,513
Weights, Troy	558	17	.....	10	568
Totals	90,368	3,868	2,016	2,038	94,422

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

ITEMIZED SUMMARY OF MECHANICAL WORK PERFORMED BY CITY DEPARTMENTS FOR FISCAL YEAR ENDING JUNE 30, 1922

Appliances	Sealed	Adjusted	Cond. for Repairs	Condemned	Total
Scales:					
Counter	3,928	204	111	28	4,067
Hopper	65	7	4	1	70
Suspension	94	12	6	7	107
Computing	7,592	1,064	731	43	8,366
Wagon	523	67	85	4	612
Port. platform	4,178	386	208	34	4,420
Dormant	915	51	91	6	1,012
Spring	2,024	92	190	193	2,407
Torsion	22	.....	.....	.....	22
Slot Machine	307	44	23	2	332
Prescription	180	.....	11	3	194
Jeweler's	17	.....	.....	.....	17
Aut. Dial	309	52	65	2	376
Dry Measure	6,191	.....	.....	53	6,244
Liquid Measure	19,807	13	82	940	20,829
Pres. Grad	1,246	2	.....	98	1,344
Aut. Pumps	2,781	496	392	25	3,198
Linear Measure	3,323	12	59	12	3,394
Weights:					
Avoir	36,528	938	269	299	37,096
Pres	3,304	20	.....	150	3,454
Troy	219	.....	.....	.....	219
Metric	386	.....	.....	7	393
Miscellaneous	1,101	99	44	23	1,168
Totals	95,040	3,559	2,371	1,930	99,341

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

SUMMARY BY CITIES OF MECHANICAL WORK PERFORMED BY CITY DEPARTMENTS FOR FISCAL YEAR ENDING JUNE 30, 1921

City	Weights and Measures Appliances					Containers		
	Sealed	Adj.	Cd. Rep.	Cond.	Total	Correct	In-correct	Total
Appleton	2,333	166	22	64	2,419	322	49	371
Ashland	326	38	1	14	341	50	.....	50
Baraboo	1,189	38	13	14	1,216	.....	.....	.....
Beaver Dam	410	2	15	7	432	.....	.....	.....
Beloit	167	78	7	5	179	19	.....	19
Chippewa Falls	323	102	21	4	348	37	.....	37
Eau Claire	474	100	36	25	535	.....	.....	.....
Fond du Lac	1,637	198	77	44	1,758	478	.....	478
Green Bay	2,160	223	74	133	2,367	126	27	153
Janesville	150	17	33	8	191	.....	.....	.....
Kenosha	584	43	17	9	610	.....	.....	.....
La Crosse	2,265	63	35	63	2,363	140	.....	140
Madison	3,267	171	41	94	3,402	446	88	534
Manitowoc	2,708	180	.....	3	2,711	452	.....	452
Marinette	462	34	21	33	516	40	.....	40
Marshfield	732	115	19	7	758	233	84	317
Menasha	452	73	.....	20	472	114	.....	114
Menomonie	781	38	3	10	794	1,674	.....	1,674
Merrill	200	45	.....	1	201	.....	.....	.....
Milwaukee	47,843	426	833	598	49,274	1,153	.....	1,153
Neenah	1,007	36	.....	10	1,017	1,926	7	1,933
Oconto	9	8	1	.....	10	.....	.....	.....
Oshkosh	3,492	246	157	80	3,729	136	1	137
Portage	713	9	3	18	734	3,264	72	3,336
Racine	5,374	416	158	407	5,939	1,484	201	1,685
Rhinelander	907	108	21	33	961	1,094	2,180	3,274
Sheboygan	2,986	39	227	33	3,246	237	73	310
Superior	1,801	276	36	82	1,919	1,394	200	1,594
Watertown	980	132	22	36	1,038	392	5	397
Waukesha	162	34	.....	.....	162	16	1	17
Wausau	2,611	116	33	93	2,737	696	48	744
West Allis	1,378	200	73	73	1,524	341	1	342
Wis. Rapids	485	98	17	17	519	980	2	982
Totals	90,368	3,868	2,016	2,038	94,422	17,244	3,039	20,283
Per cent	95.7	4.1	2.04	2.15				

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column

SUMMARY BY CITIES OF MECHANICAL WORK PERFORMED BY CITY DEPARTMENT FOR FISCAL YEAR ENDING JUNE 30, 1922

City	Weights and Measures Appliances					Containers		
	Sealed	Adj.	Cd. Rep.	Cond.	Total	Correct	Incorrect	Total
Antigo	149	31	.....	1	150	40	.....	40
Appleton	2,939	236	24	64	3,027	259	23	282
Ashland	226	35	.....	6	232	94	.....	94
Baraboo	808	93	10	5	823	60	.....	60
Beaver Dam	451	.....	2	7	460	.....	.....	.....
Beloit	.....	.....	.....	.....	.....	.....	.....	.....
Chippewa Falls	511	110	27	9	547	24	.....	24
Eau Claire	404	97	28	21	453	.....	.....	.....
Fond du Lac	1,182	140	52	53	1,287	452	.....	452
Green Bay	2,390	176	142	59	2,591	225	100	325
Janesville	1,190	189	31	33	1,254	.....	.....	.....
La Crosse	2,780	139	54	91	2,925	101	2	103
Madison	4,728	243	74	203	5,005	479	62	541
Manitowoc	2,841	149	.....	1	2,842	328	.....	328
Marinette	601	72	40	25	666	48	.....	48
Marshfield	789	46	6	5	800	165	8	173
Menasha	271	46	.....	.....	271	66	.....	66
Milwaukee	52,562	.....	878	639	54,079	372	78	450
Menomonie	588	38	2	10	600	1,296	.....	1,296
Merrill	50	22	2	.....	52	.....	.....	.....
Neenah	726	16	3	3	732	1,770	56	1,826
Oshkosh	3,075	188	105	55	3,235	76	.....	76
Portage	939	9	4	33	976	4,248	.....	4,248
Racine	2,902	366	251	238	3,391	528	245	773
Rhinelander	1,267	117	17	60	1,344	570	1	571
Sheboygan	2,892	91	250	32	3,174	341	8,524	8,865
Superior	1,020	195	67	49	1,136	3,604	13	3,617
Watertown	561	106	13	30	604	432	12	444
Waukesha	111	16	1	.....	112	13	.....	13
Wausau	2,637	120	24	35	2,696	532	4	536
Wauwatosa	599	50	48	37	684	38	.....	38
West Allis	2,336	317	202	105	2,643	185	.....	185
Wis. Rapids	515	106	14	21	550	703	26	729
Totals	95,040	3,559	2,371	1,930	99,341	17,049	9,154	26,203
Per cent	95.67	3.59	2.28	1.95				

Note.—The appliances adjusted have been sealed and in figuring the totals are included in the "Sealed" column.

Supervisional Work—City Sealers

One table for each year is submitted showing the supervisional work performed by the city sealers according to the reports on file in the office of the Dairy and Food Commissioner. Supervisional or try-out work as before mentioned is one of the most important functions of weights and measures work and the city sealers are to be commended for the large amount of work done along this line. City sealers have been very active during the past two years in testing milk bottles with the result that thousands of incorrect bottles have been kept out of use in Wisconsin. In a great many of the cities, the sealers have been called upon to remeasure car lots of wood, and when thus called upon have found shortages which if unchecked would mean the loss of many dollars to the ultimate consumer of the wood. What has been said regarding try-out work by state sealers applies with equal force to city sealers. However, the

city sealer is in a more advantageous position to follow up try-outs than is a state sealer. It is essential that there must be close co-operation between the state and city sealers in certain lines of try-out work. As one illustration, a manufacturer located outside of the city may be shipping short weight or short measure packages into a city. The city sealer may not for lack of jurisdiction, be able to investigate the cause of these short weight or measure packages, but by reporting to the state department, the state inspectors can go directly to the manufacturing plant and ascertain the cause of the trouble at its source.

In the course of time, close cooperation between the weights and measures departments of the different states can be obtained. This would aid materially in checking the practice of some firms in shipping goods not legal in their own state into other states.

SUMMARY BY CITIES OF SUPERVISIONAL WORK PERFORMED BY CITY DEPARTMENTS FOR FISCAL YEAR ENDING JUNE 30, 1921

City	Try-Outs				Prosecutions	
	No. of Visits	No. of Tests	No. Found Short	Misbranded	Cases Brought	Convictions
Appleton	424	1,863	114	897		
Ashland	268	432			1	1
Baraboo	35	427	87			
Beaver Dam						
Beloit	32	72	11			
Chippewa Falls	54	678	13			
Eau Claire	24	220	38			
Fond du Lac	419	2,007	2			
Green Bay	525	6,438	980	1,067	14	14
Janesville	7	32	13	8		
Kenosha	17	100	5		1	
La Crosse	300	664	2		2	1
Madison	637	1,741	388	388	1	1
Manitowoc		2	2			
Marinette	107	198				
Marshfield	261	312	3	8		
Menasha	101	163	6			
Menomonie	382	1,087	10			
Merrill	12	61	7	4		
Milwaukee	1,268	34,813	100	26	12	10
Neenah	1,696	12,568	44	21		
Oconto						
Oshkosh	170	577	27	1	2	2
Portage		271	16	16		
Racine	1,297	3,148	295	1,565	4	4
Rhinelander	398	2,629	89			
Sheboygan	359	893	242	1	4	4
Superior	521	805	101	58		
Watertown	934	1,020	9	8	1	1
Waukesha	22	25	2			
Wausau	1,975	5,023	277	22	4	2
West Allis	157	2,148	22		3	3
Wisconsin Rapids	1,910	3,338	352		1	1
Totals	14,312	83,755	3,257	4,090	50	44

SUMMARY BY CITIES OF SUPERVISIONAL WORK PERFORMED BY CITY DEPARTMENTS FOR FISCAL YEAR ENDING JUNE 30, 1922

City	Try-Outs				Prosecutions	
	No. of Visits	No. of Tests	No. Found Short	Misbranded	Cases Brought	Convictions
Antigo	39	262	36			
Appleton	524	2,458	157	2		
Ashland	158	243				
Baraboo	49	658	116			
Beaver Dam						
Beloit						
Chippewa Falls	86	777	50			
Eau Claire	66	353	109		1	
Fond du Lac	280	813	23			
Green Bay	428	3,497	434	237	9	9
Janesville	70	213	13			
La Crosse	1,723	826				
Madison	346	1,052	411	411	1	1
Manitowoc	54	8	2		3	3
Marinette	176	126	1			
Marshfield	336	602	18			
Menasha	65	102	3			
Milwaukee	1,006	39,433	1,158	849	16	16
Menomonie	111	623	10	2		
Merrill						
Neenah	1,765	9,628	110	48		
Oshkosh	146	516	37	20	2	2
Portage		210	1			
Racine	1,158	2,268	232	163	6	6
Rhinelander	422	2,672	104	27	2	2
Sheboygan	211	702	261		3	3
Superior	646	961	121	30		
Watertown	852	1,001	4			
Waukesha	23	29	2			
Wausau	4,001	7,368	135	106	1	1
Wauwatosa	12	155	4			
West Allis	89	1,714	119		3	3
Wisconsin Rapids	1,704	2,162	285			
Totals	16,546	81,330	3,956	1,895	47	46

Legislation

The importance of legislation necessary for the procurement of apparatus for testing railroad track scales was set forth very thoroughly in the report of Mr. R. W. Smith in 1920 and a very little can be added at this time. The Bureau of Standards has made no extended tests on track scales since that time in Wisconsin.

It appears that the demand for a law standardizing loaves of bread has reached such a point that the matter should be brought before the legislature at the coming session. The national conference on weights and measures of the United States has given the matter deep consideration and has prepared a model law that the different states might enact and thus secure uniform legislation throughout the whole United States. The essential features of this model law are the same as have been discussed in Wisconsin for some time and it would, therefore, seem as though longer delay in securing this legislation is unnecessary. A few amendments to the present weights

and measures law should be made to clarify its meaning and strengthen its weak parts. The present law makes it illegal to sell cherries and similar berries by weight, even though sold in bulk. This is certainly not in accord with the general principles of weights and measures legislation and should be changed.

The present law provides a penalty for selling a lesser quantity of a commodity than represented. However, service is not clearly included. The law should be changed to include service as well.

The present law gives the state superintendent of weights and measures authority to issue numbers to milk and cream bottle manufacturers to be used in identifying their bottles, but makes no provision for revocation of numbers. This additional authority should be given.

In conclusion, I believe it can truly be said, that when consideration is given to the number of changes in the personnel of both state and city departments and the period of discontent, unrest and readjustment, with corresponding fluctuations in prices of commodities, that the state and city departments of weights and measures have made a remarkably good record for the two years covered by this report.

Figure 1.

Vanilla Bottles.—Each of the bottles shown above holds two fluid ounces of vanilla, although to the eye the bottle on the left appears to be much the larger. This is an example of the deception practiced by certain manufacturers. The large bottle is made of heavier glass and has paneled sides. The heavy glass edges act as a magnifying lens. The net container law now requires the manufacturer or packer to mark the contents of the bottle on the outside thereof so that the purchaser who wishes to buy intelligently can compare different brands.

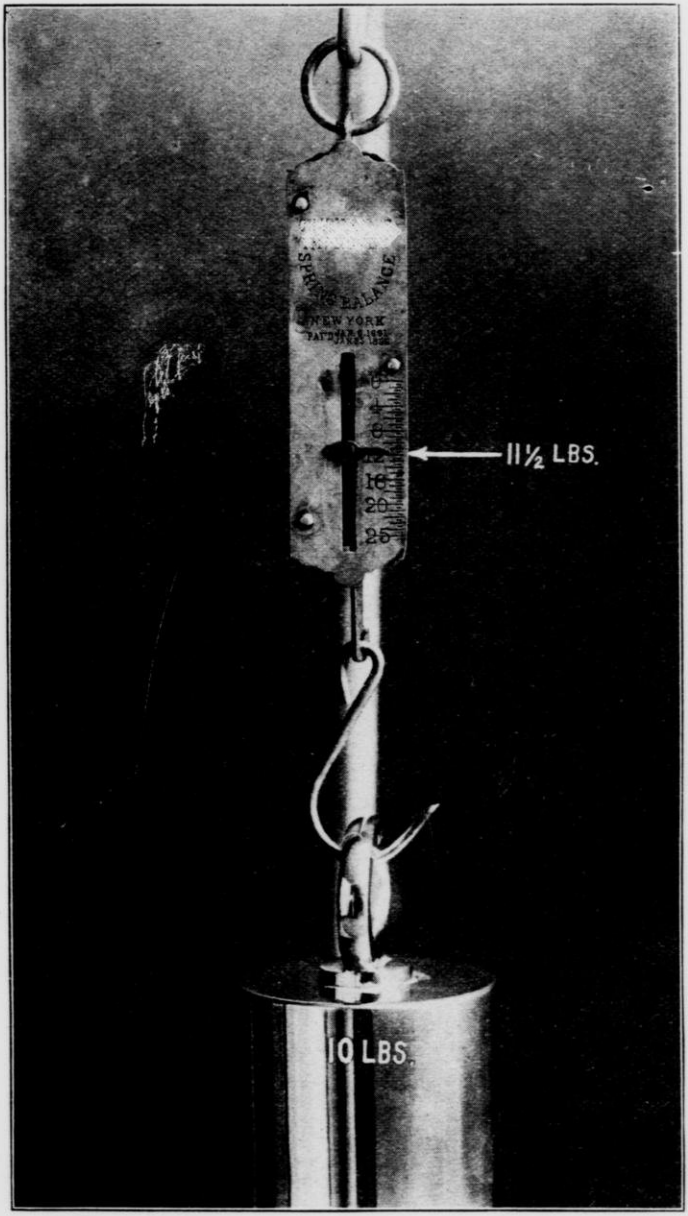


Figure 2.

Spring Balance.—This spring balance was used by a fish peddler and beat the customer out of 1½ pounds on every ten pounds. Scales of this type when weighing correctly are only intended for the weighing of cheap commodities such as rags and iron.

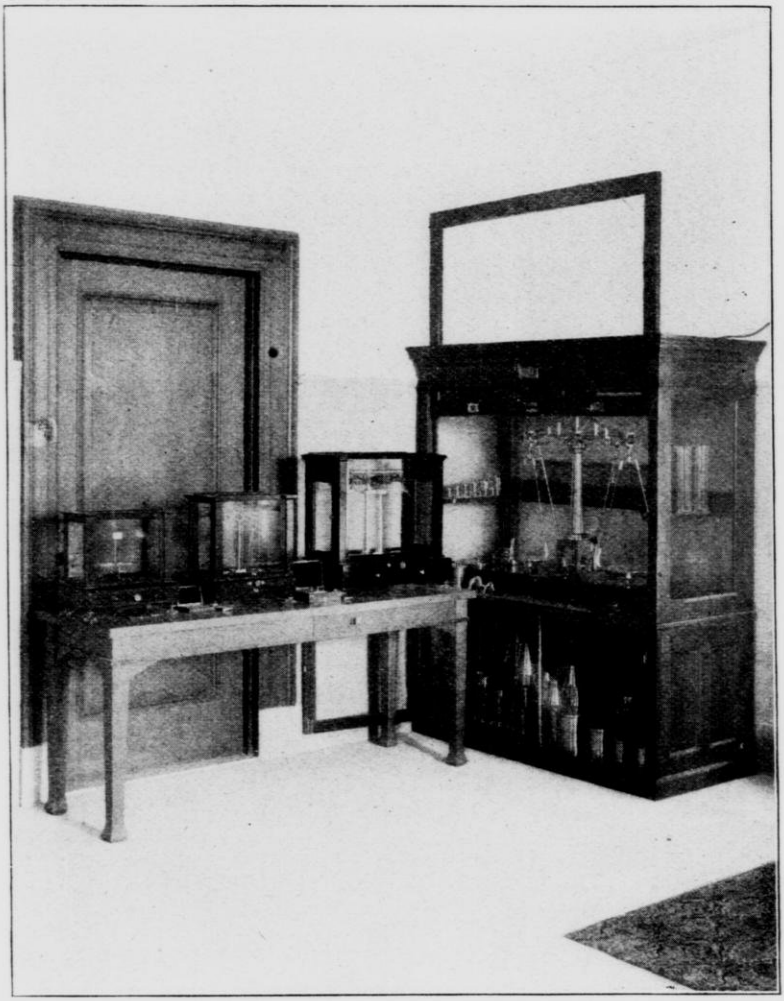


Figure 3.

Corner in office of weights and measures, balances and state standards.

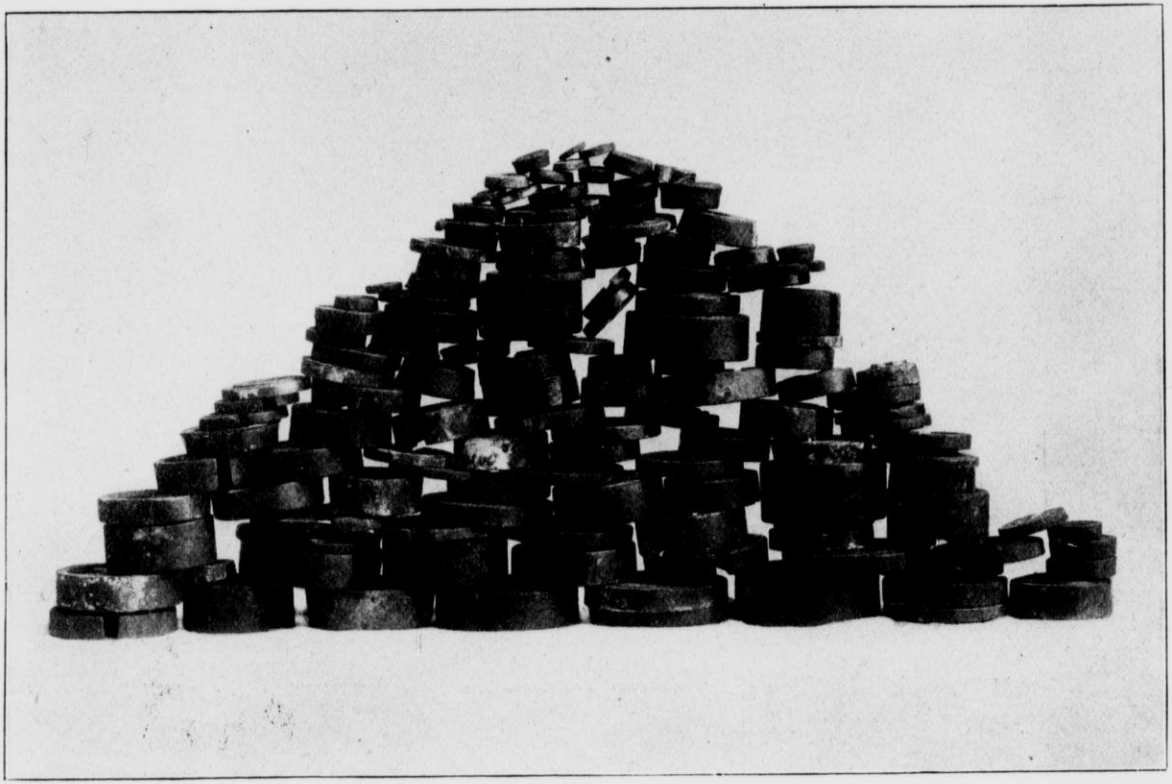


Figure 4. Confiscated, worn, plugged and drilled weights.

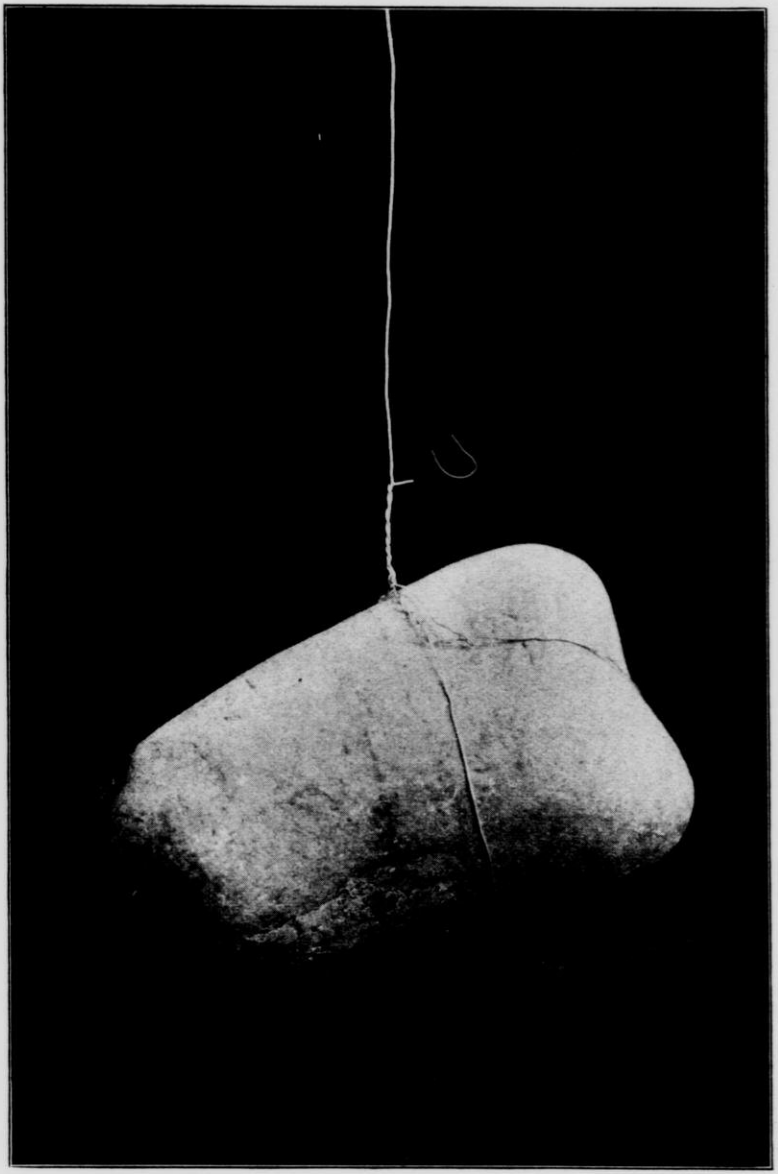


Figure 5.

Stone taken from interior of gasoline measuring pump, producing shortage of one-half pint to the gallon.

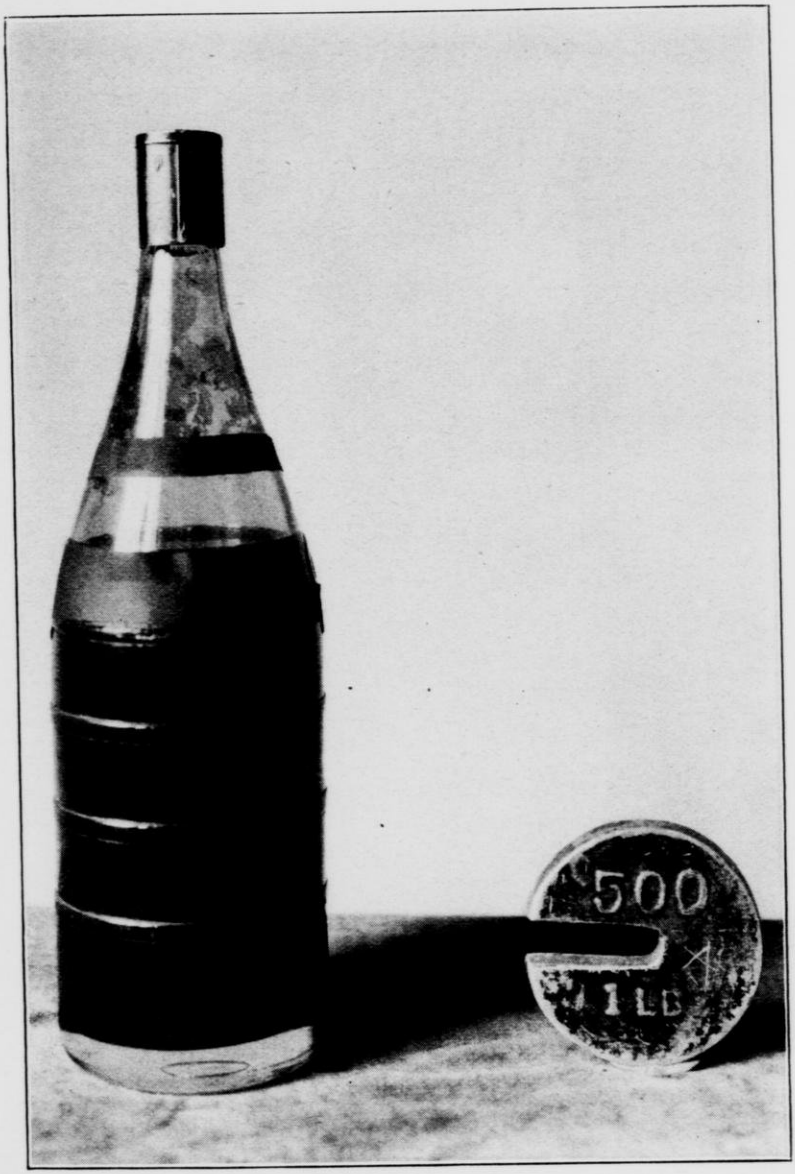


Figure 6.

D-5054.—This bottle of oil sold for one quart. It is 10 per cent short measure. If full quart, oil should reach point indicated by arrow. D-5055.—This weight used on stock scale made out of lead babbitt causing it to weigh 17½ ounces instead of one pound as marked. Each time the stock buyer used this weight he gained 54 pounds.

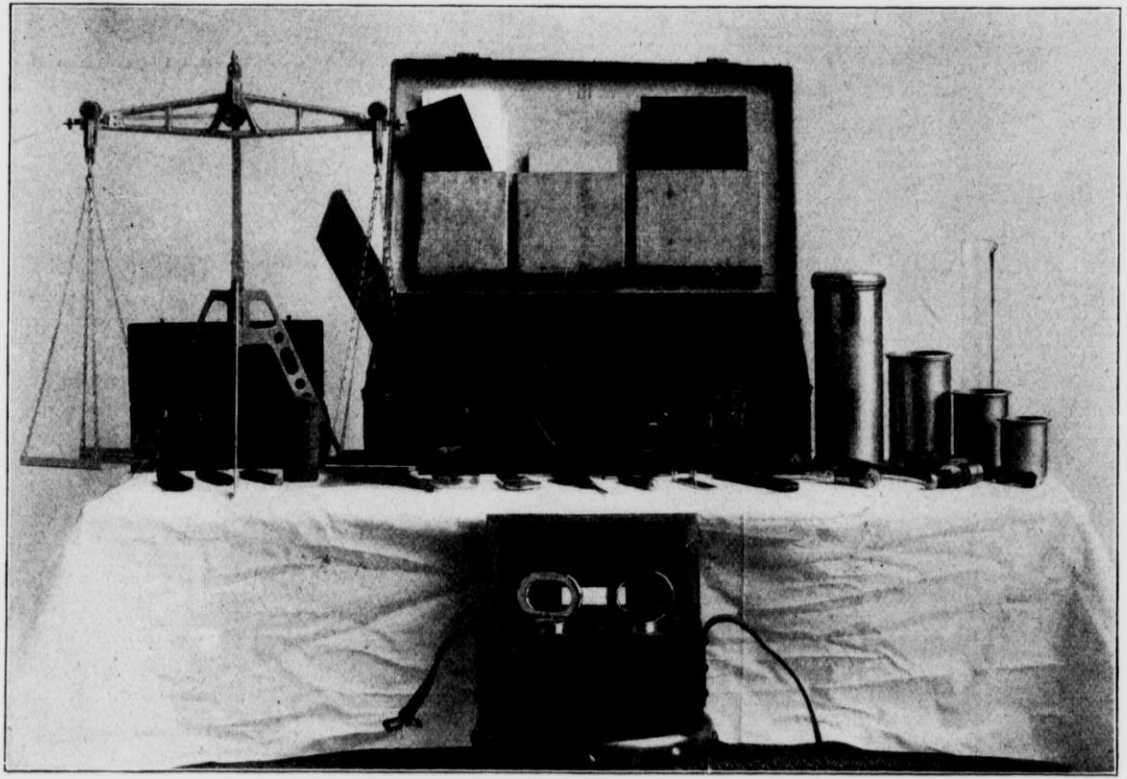


Figure 7.
Sealer's portable outfit for light inspection, weight 60 pounds, and contains apparatus for testing small scales weighing from 1/10 to about 200 pounds, also linear and liquid measures. Not all of the apparatus is shown in the picture.

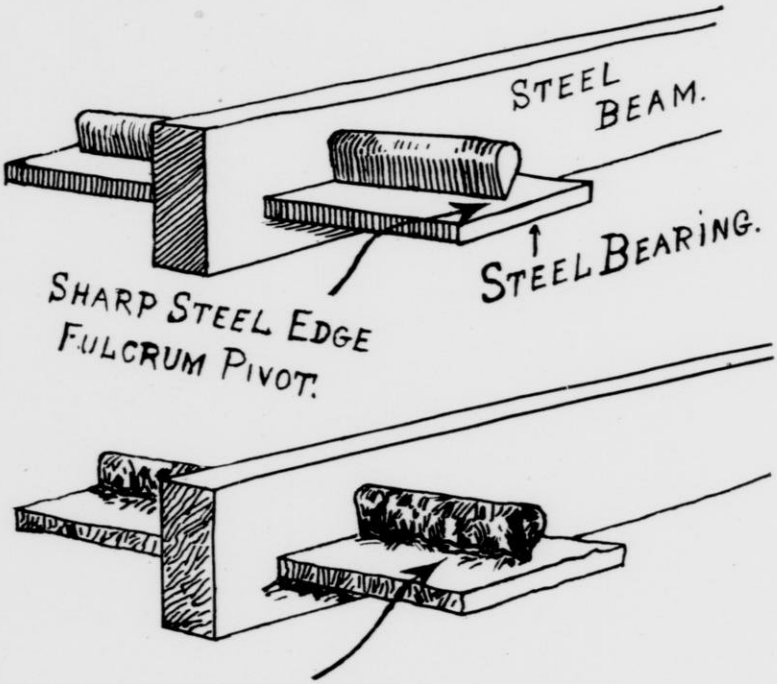


Figure 8.

Bearings on scales should be sharp and clean.

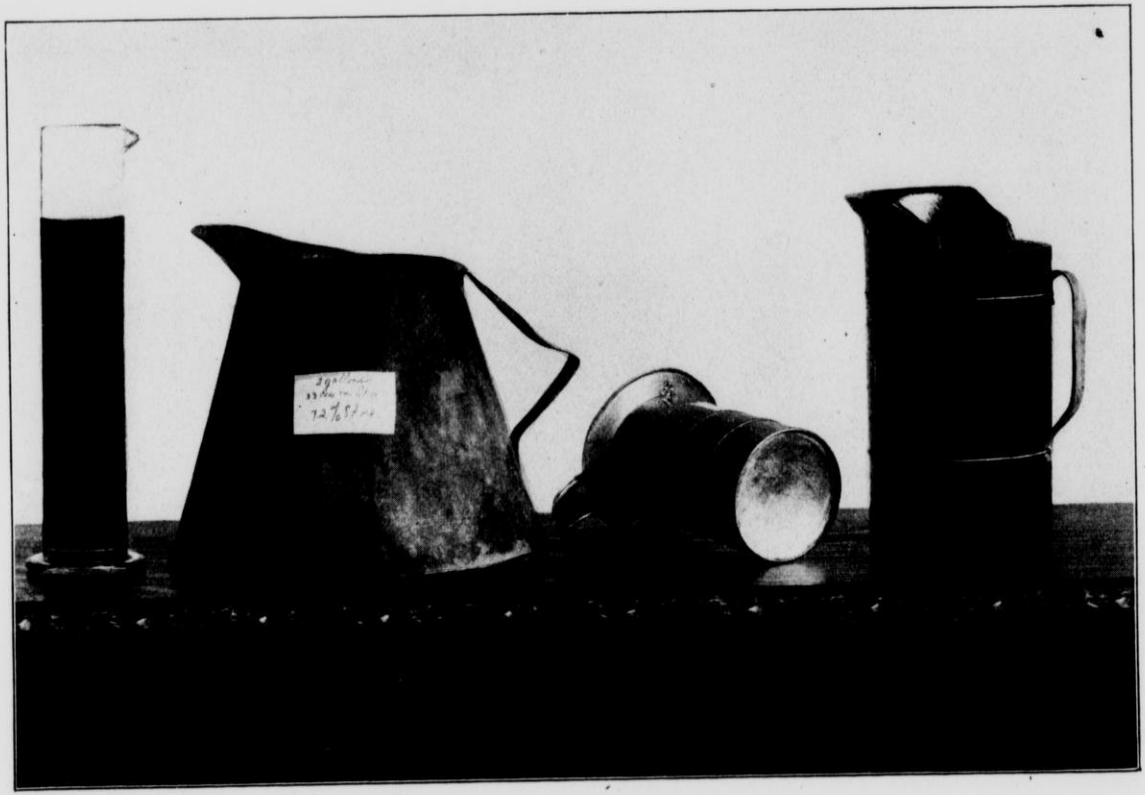


Figure 9.
Kerosene measure, shortage shown by graduate. Milk measure with bottom hammered upward. Vinegar measure made short by sawing off top.

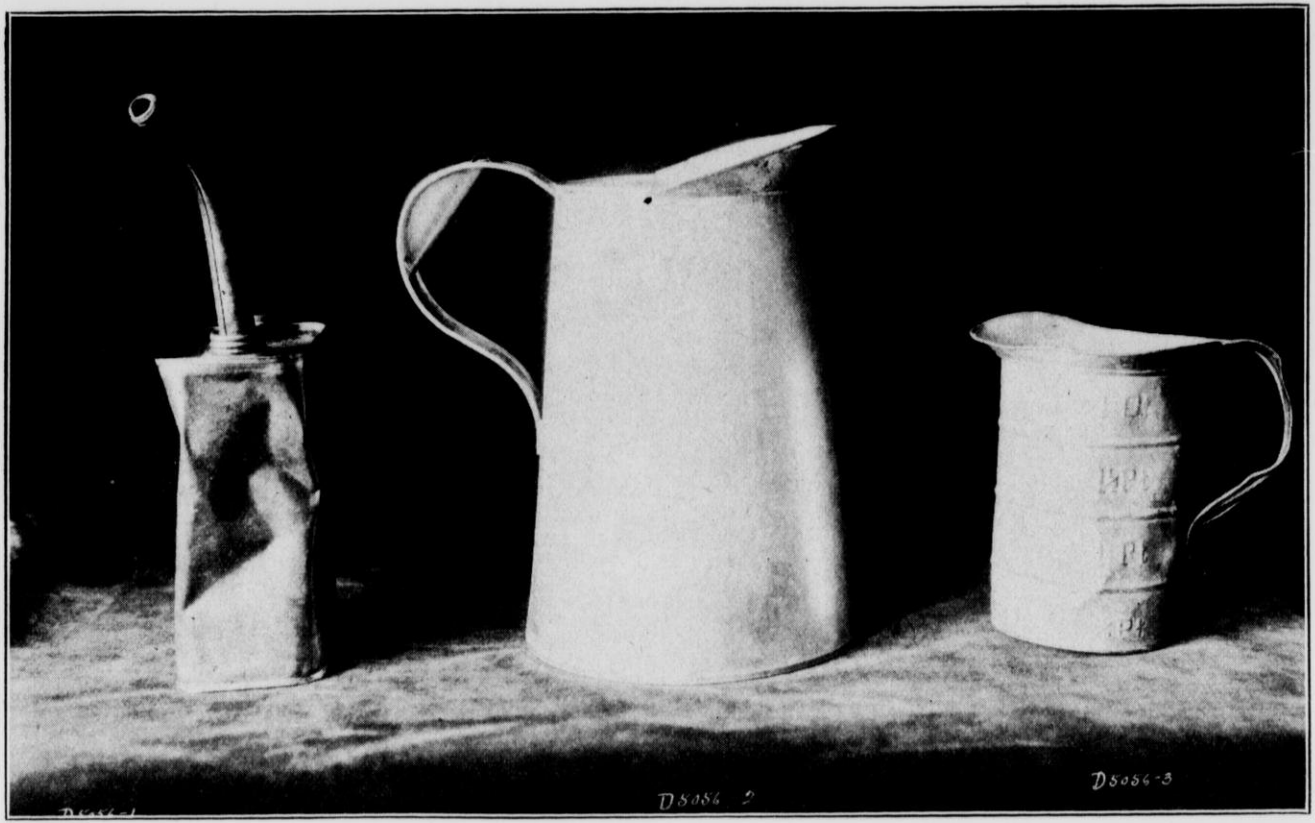


Figure 10.
D-5056-1.—Badly dented tin measure used by oil company. Even a correct tin measure after being dented will deliver short measure. D-5056-2.—This one-gallon measure is 1½ per cent short, apparently the fault of the manufacturer. The dealer in Wisconsin promptly discontinued sale of this kind of measures after the weights and measures inspector called at his place of business. D-5056-3.—This one-quart measure is ¼ pint short. It was taken from a milkman who had 100 customers, thereby gaining 12½ quarts of milk daily.

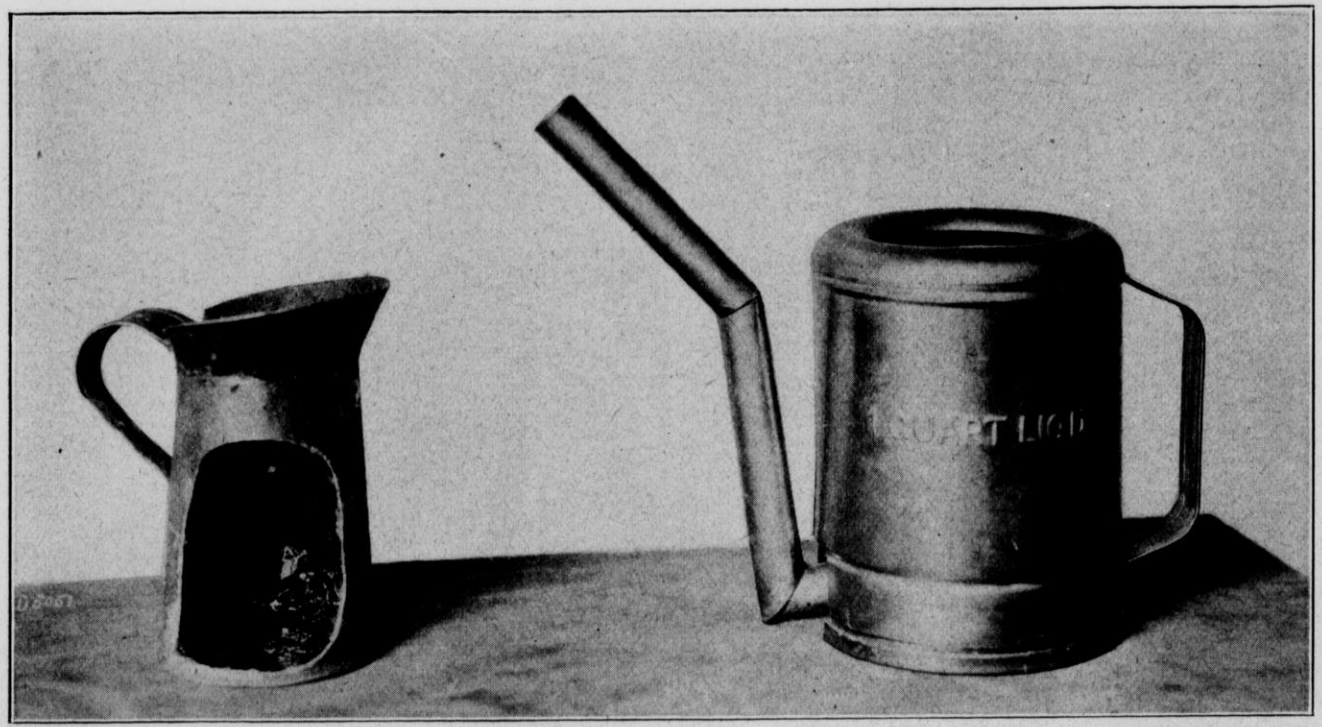


Figure 11.

D-5051.—One pint measure, side cut away showing how oil has been allowed to cake on bottom and sides making it 31 per cent short measure. D-5052.—When this measure is held in normal, level position, a considerable amount of oil will be retained in measure instead of draining into customer's car. The opening into discharge pipe is improperly placed.

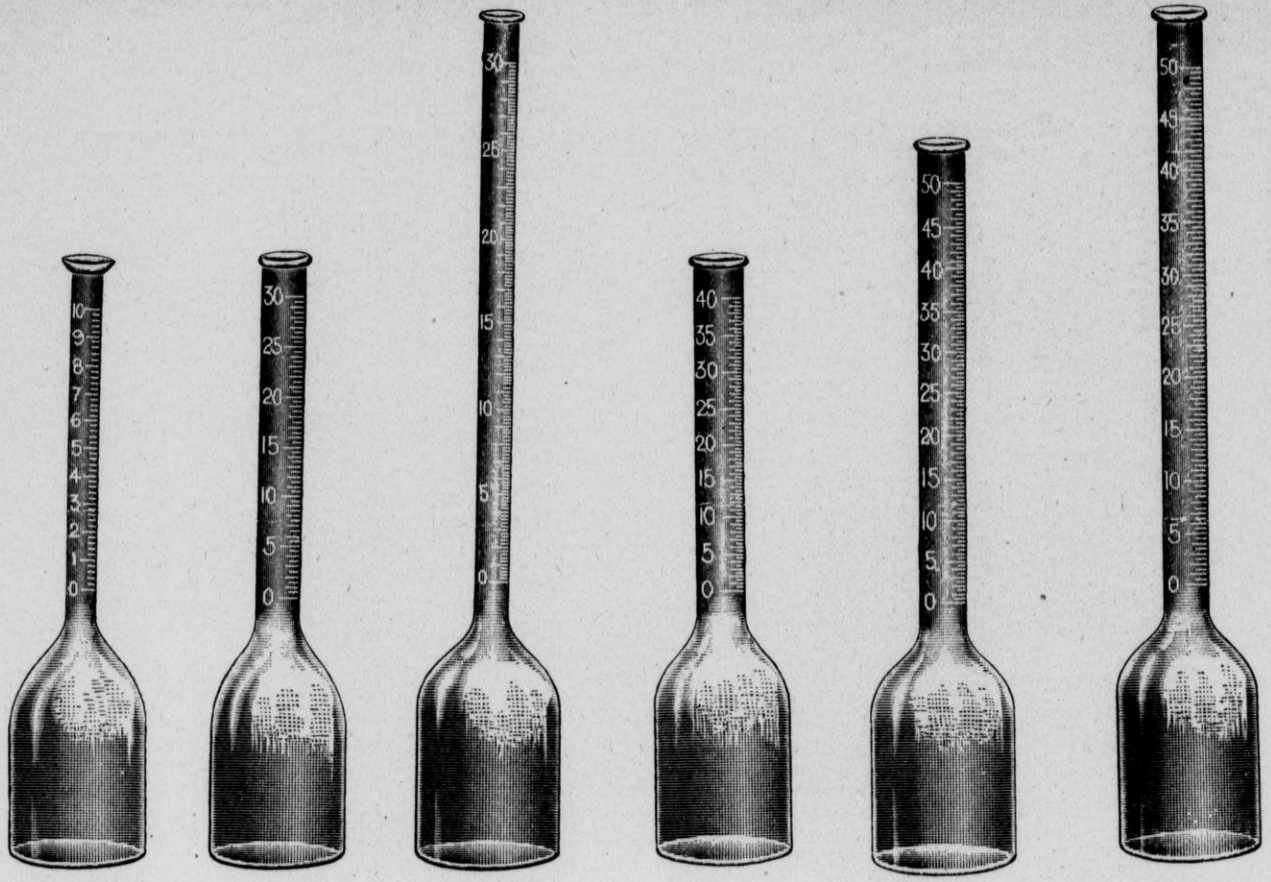


Figure 12.
Types of Babcock test bottles now standardized by law. Five types of cream and one type of milk bottle are the only ones approved by the Weights and Measures Department.

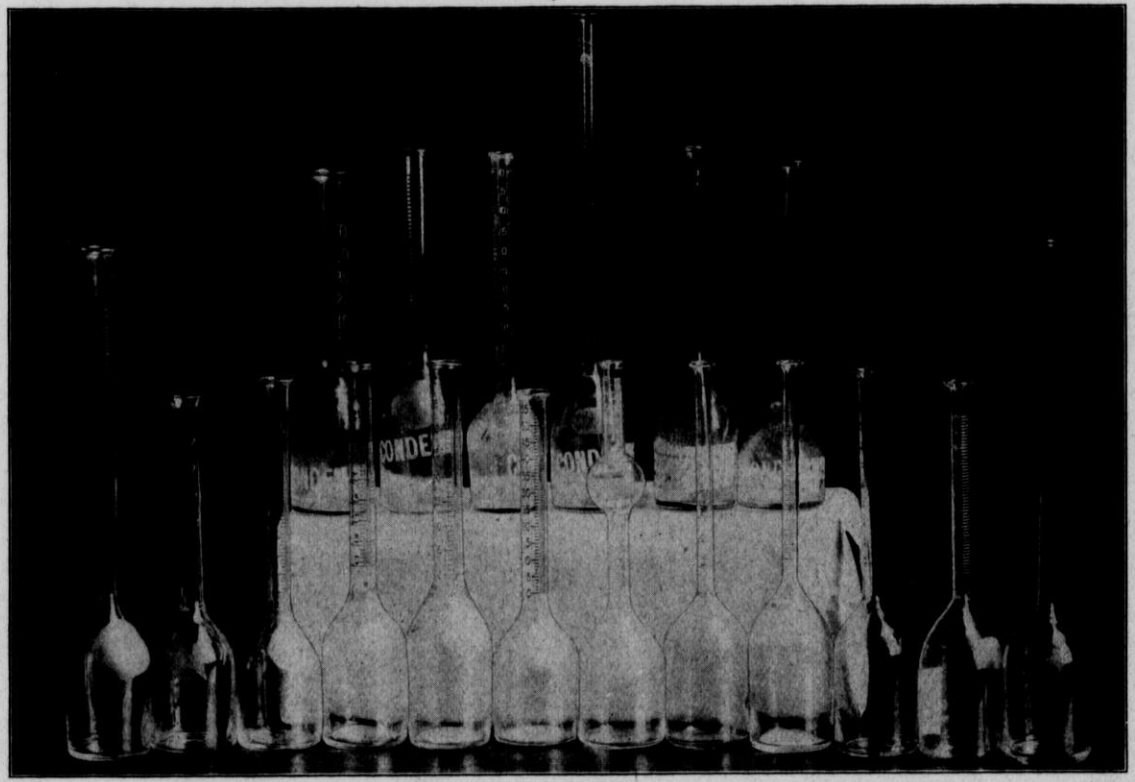


Figure 13.
A few of the numerous types of Babcock test bottles formerly used in Wisconsin creameries and cheese factories, many of them very inaccurate. See standardized bottles, Figure No. 12.

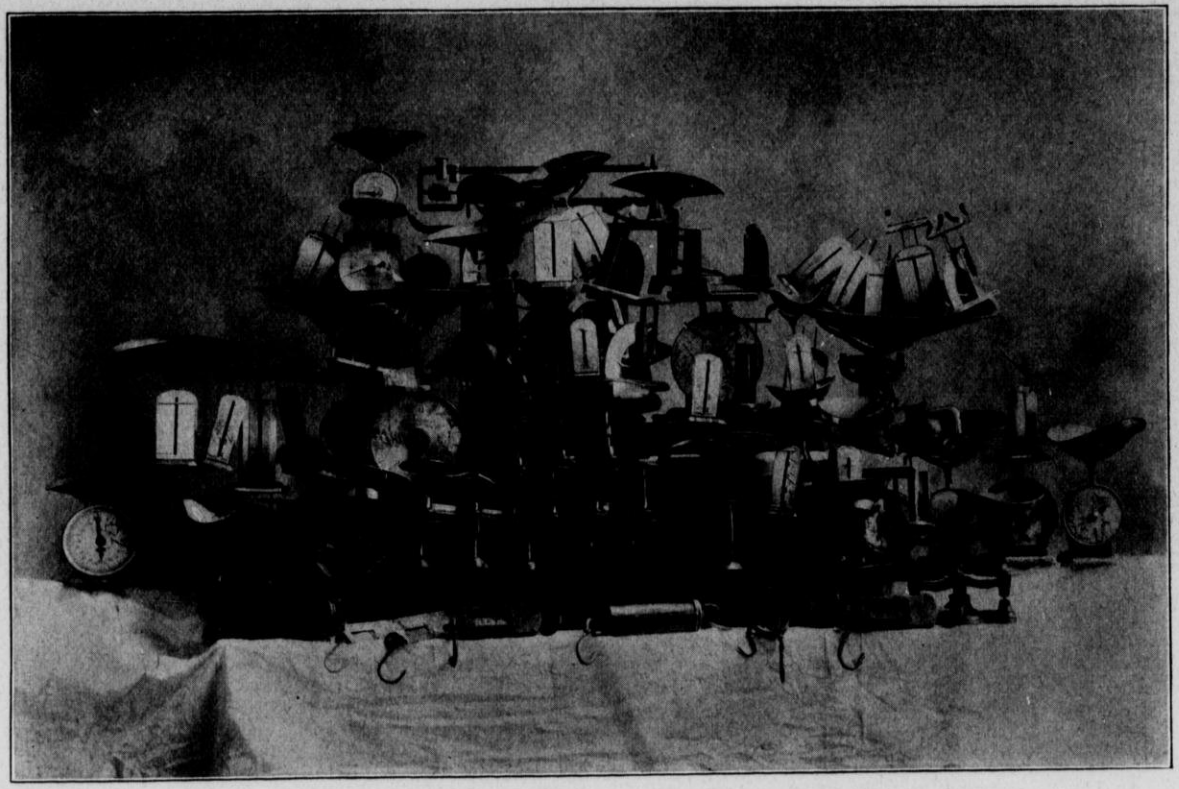


Figure 14. Samples of confiscated spring and counter scales.

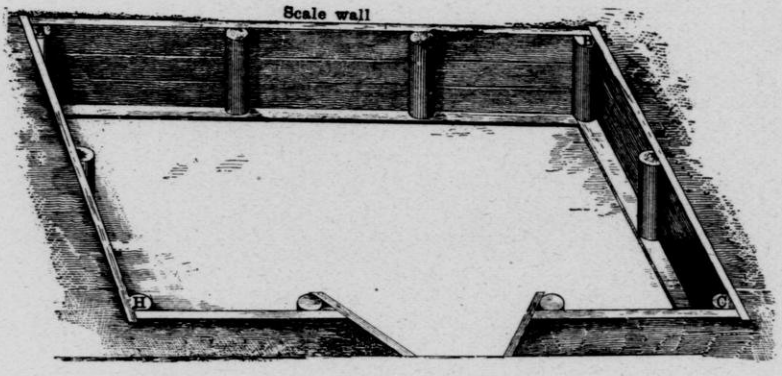


Figure 15.

An illustration of what the foundation of a scale should not be. The rotting of the timbers soon destroys the accuracy of the scale.

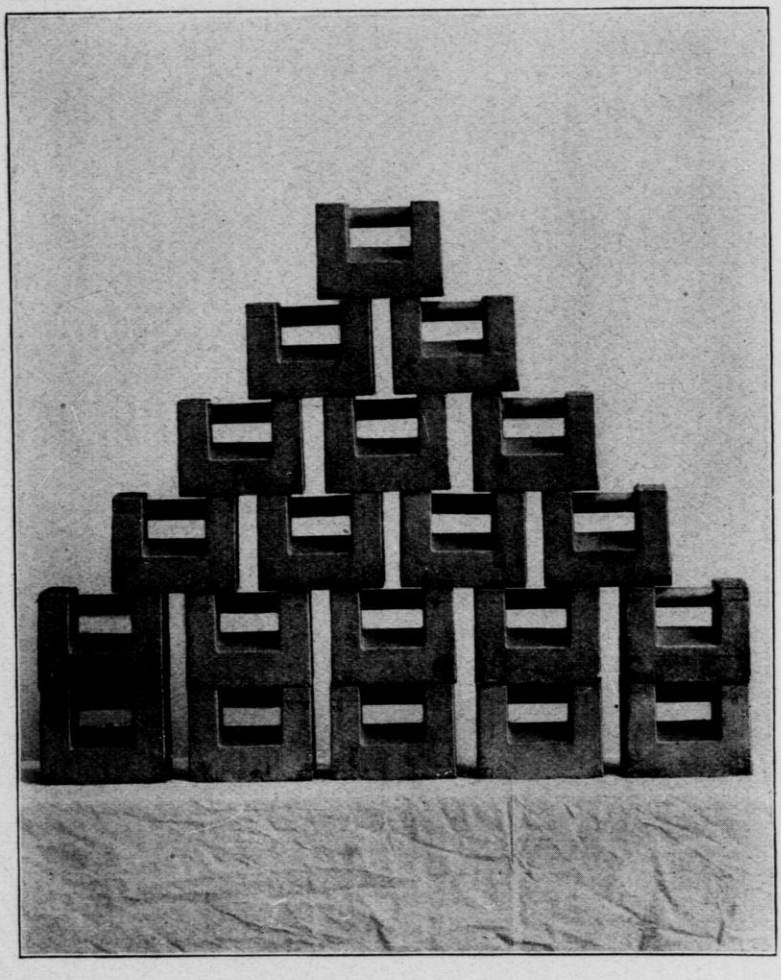


Figure 16.

Twenty 50-pound weights for testing wagon and platform scales, a necessary part of each sealer's portable outfit.

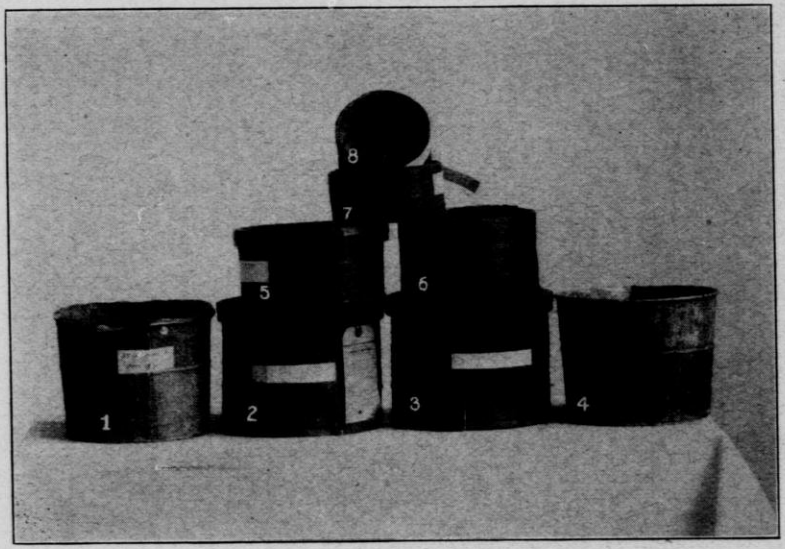


Figure 17.

False Measures.—(1) The top of this measure has been battered so as to shorten its capacity; (2, 3) peck measures cut to show the false bottoms; (4) graduated measure in which it is impossible to determine proper heap when half the capacity is measured; (5) one-half peck measure with double bottom; (6, 7) "cut down" measures; (8) four thicknesses of card board were placed in the bottom of this measure to lessen its capacity.

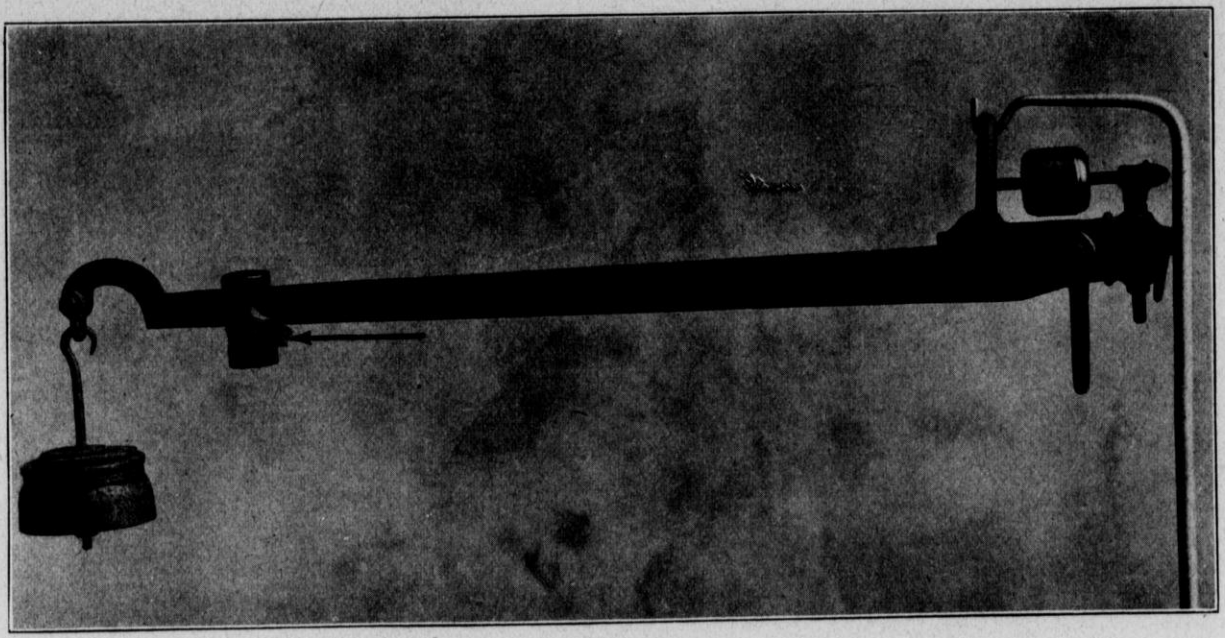


Figure 18.

Stock Scale Beam.—The arrow points to a piece of lead that was dropped into the sliding poise. This made the beam weigh 25 pounds heavy on 1,000 pounds. Over 200 carloads of stock were annually weighed over this scale, beating the farmers out of hundreds of dollars.

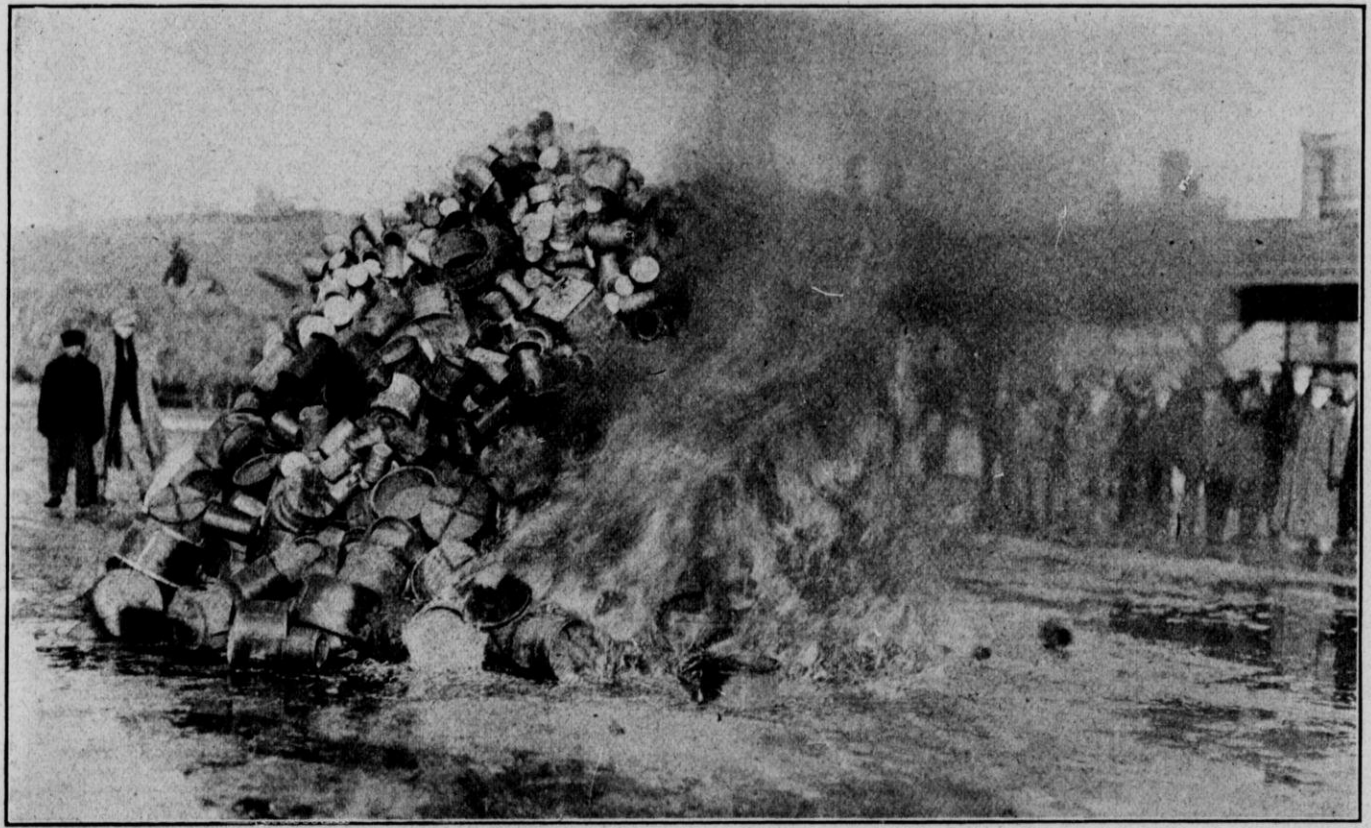


Figure 19. Burning of confiscated Measures, Milwaukee.

Figure 20.

Prescription Graduates and Weights.—There are over 700 apothecary and metric weights in the pile in the center of the picture, many of which were from 3 per cent to 10 per cent light. Some of the glass graduates are 15 per cent too large, made this way by careless manufacturers. These weights and graduates were used by druggists in prescription work.

Figure 21.

D-5053.—Prescription graduates complying with specifications of the Wisconsin Weights and Measures Department. Note contrast between these standardized graduates and those shown in Figure 20. Extremely wide graduates cannot be read with precision, are therefore inaccurate, and may be dangerous when used in prescription work.

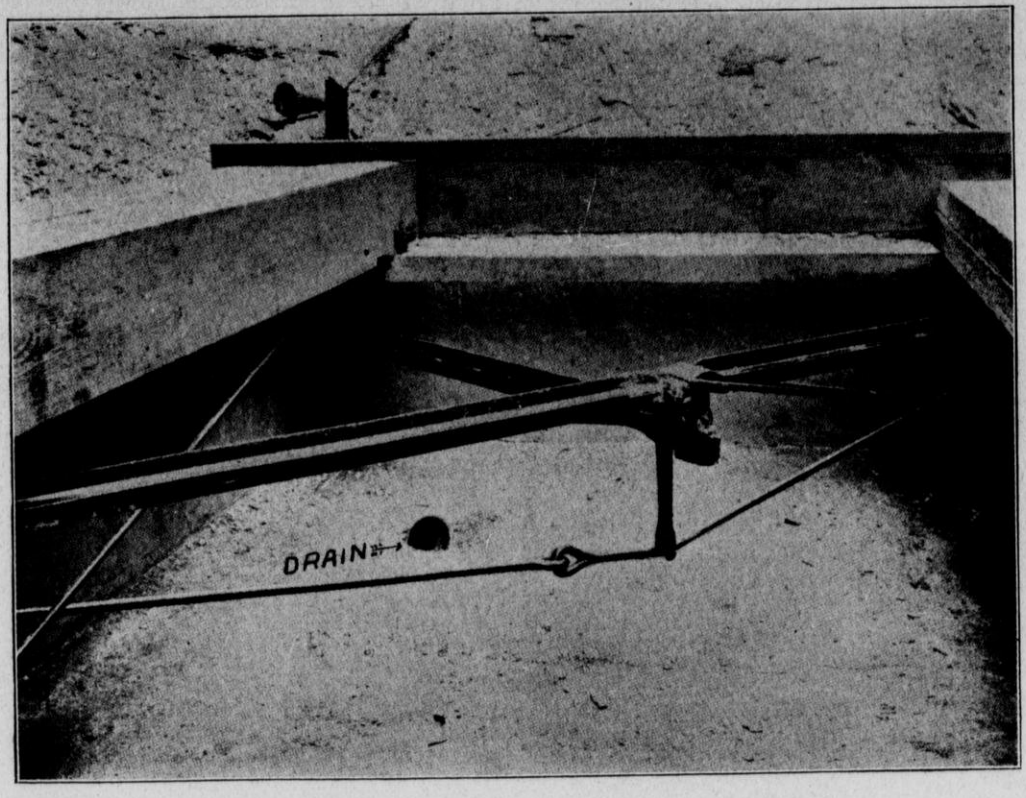


Figure 22.

Prolong the life of your scale by providing for proper drainage.

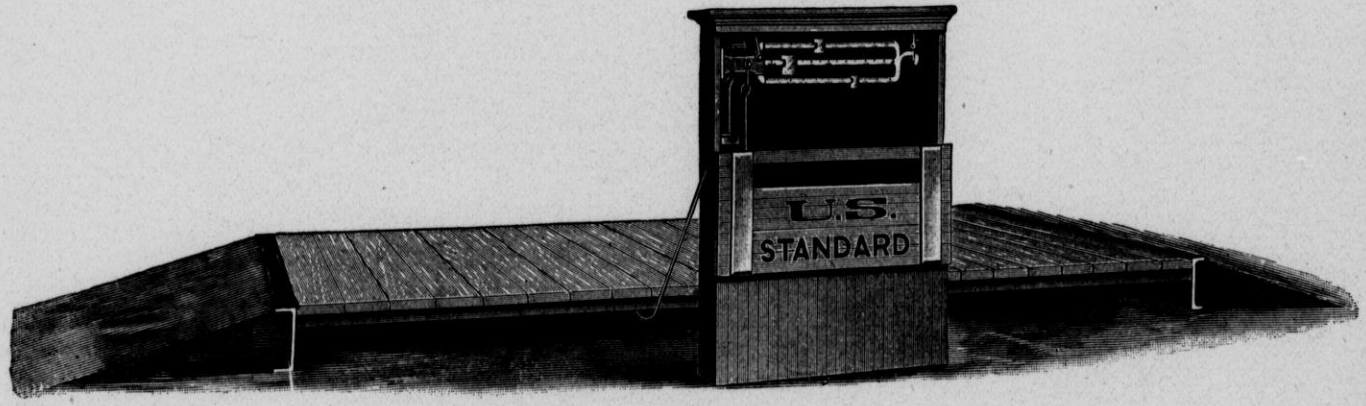


Figure 23.

The end approaches to this scale are not level, the sides are not enclosed which often leads to the introduction of serious errors on windy days, and no foundation exists for either platform or beam. "U. S. Standard" placed on this scale gives the false impression that it is guaranteed by the United States government.

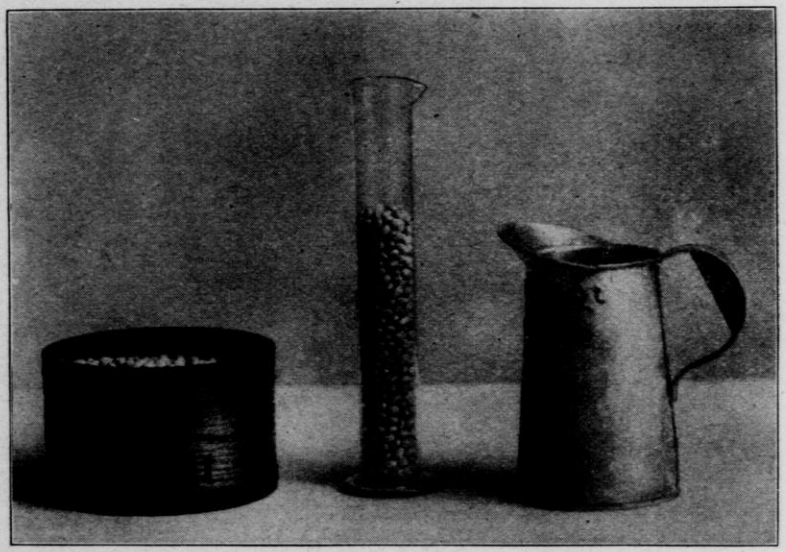


Figure 24.

Dry and Liquid Measures.—A dry quart measure is nearly 15 per cent larger than a liquid quart measure. A liquid quart measure of beans will only fill the quart measure to the height indicated in the picture. The glass graduate in the center shows the difference in capacity amounting to 9.45 cubic inches between the liquid and the dry quart measures. It is illegal to sell beans, cranberries and other dry commodities by liquid measure.

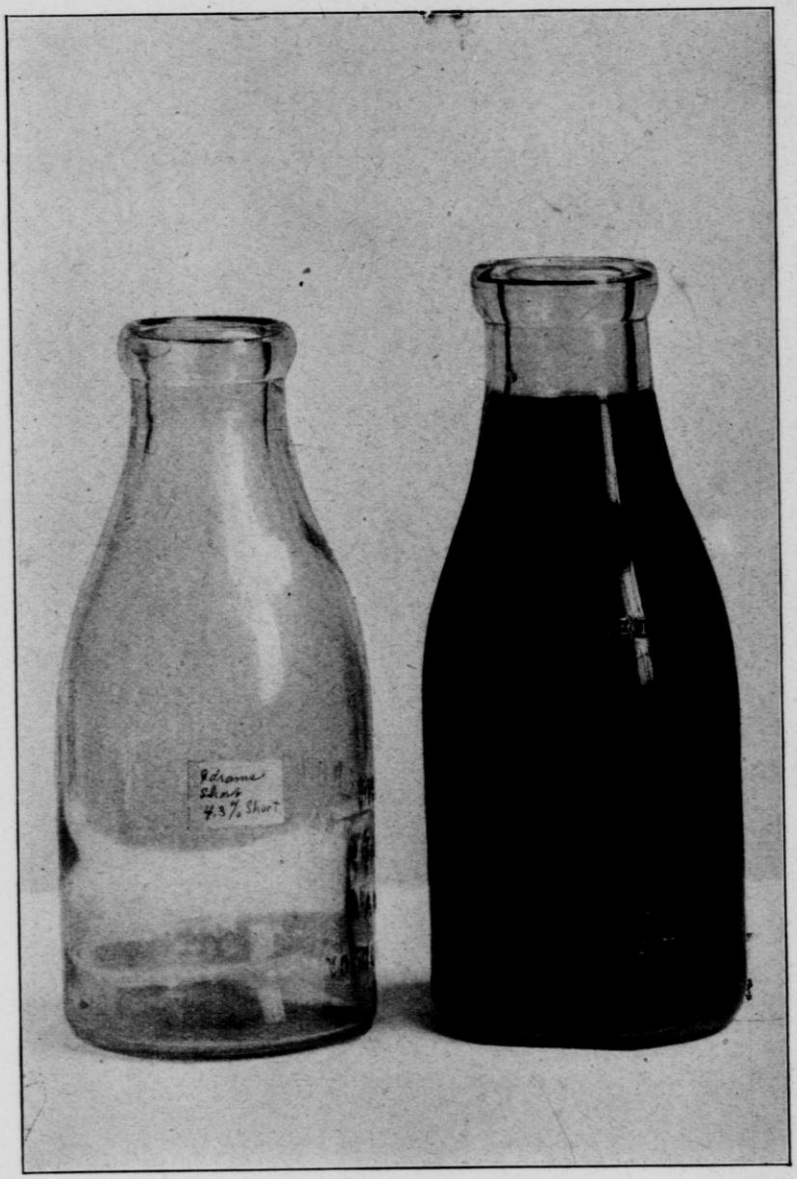


Figure 25.

Standard and nonstandard milk bottles. Nonstandard bottle now practically eliminated from use.

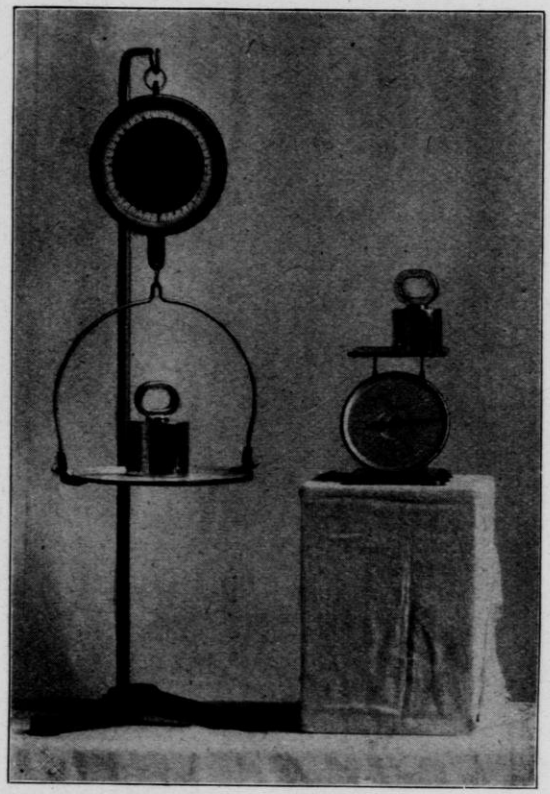


Figure 26.

Family Spring Scales.—The scale to the left weighs accurately. The five-pound weight placed on the scale to the right moves the pointer to the 5½ pound mark. This is not due so much to the spring as to friction or rubbing caused by shifting the weight to one side of the pan. This does not happen when the pan is suspended. The scale on the left can be hung from a swinging bracket fastened to the kitchen wall. The pan can be folded over so that when not in use the scale can be pushed back against the wall. This type of scale is moderate in price and can be used to advantage by the housewife in reweighing purchases.

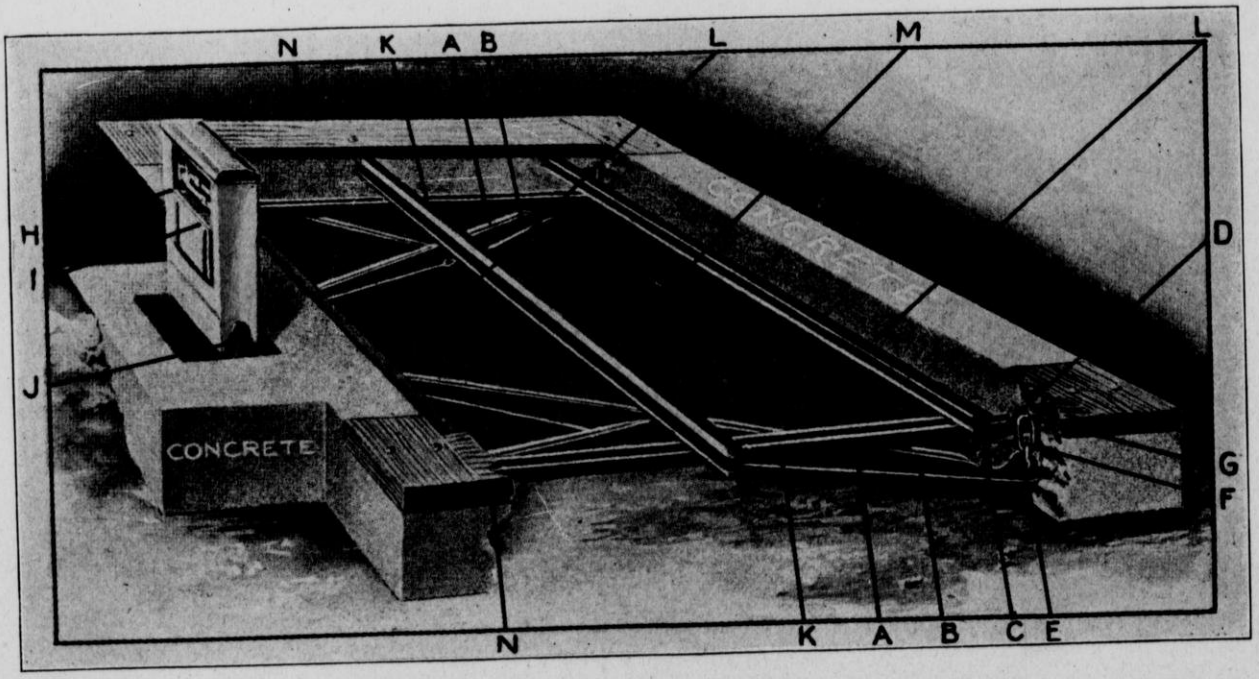


Figure 27.

This steel frame built on a concrete foundation insures accuracy in weighing and in the long run a saving in expenses. A.—Cast-iron levers. B.—Truss rods for levers. C.—Tool steel bearing pivot. D.—Tool steel bearing. E.—Tool steel fulcrum pivot. F.—Forged corner loop. G.—Forged link. H.—Heavy brass beam. I.—Graduated counterpoise. J.—Cast-iron brace for beam box. K.—Steel bearing channel beams. L.—I-beams for platform. M.—Channel beam for platform. N.—Oak plank for foothold for horses.

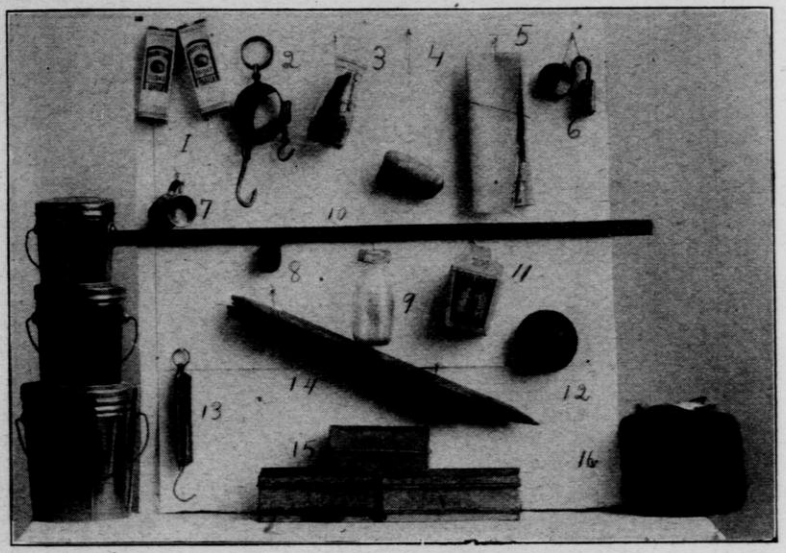


Figure 28.

(1) The two cartons are exactly the same size, but one contains a ten-cent and the other a fifteen-cent size bottle of lemon extract. (2) The "rag peddler's joy." Four different weights can be obtained on this scale, no one of which is correct. (3) This milk bottle contains over 400 confiscated prescription weights. (4) A stone hung in the cylinder of an oil pump displaced nearly one-half pint of oil. (5) The heavy tinfoil and manila wrapping on a two-pound print of Limburger cheese had been weighed in with the cheese. By this trade custom the customer pays for tinfoil and manila paper at the retail price of the cheese. (6) Inaccurate homemade poise and weights taken from a farmer's scale. (7) Copper measure with the bottom hammered up, making the measure 7 per cent short. (8) Cloth tape one inch short. (9) A milk bottle holding one-third quart. Milk bottles of this capacity are forbidden by law to prevent their being sold as pints for which they could readily be mistaken. (10) A yardstick with one end sawed off. (11) Paper ice cream bucket 15 per cent short. (12) A poor job of repair work by an incompetent scale repairer. (13) Spring balance with a sliding front that can be manipulated by a rag peddler to his advantage. (14) Wooden back pieces or spreaders weighing four ounces each and weighed with the meat. (15) Ice cream molds nearly 10 per cent short. (16) This is a ball of binder twine 20 per cent short of the guaranteed length. The lard pails to the left weigh but three, five and ten pounds gross weight. The pails weigh respectively seven, eleven and sixteen ounces.

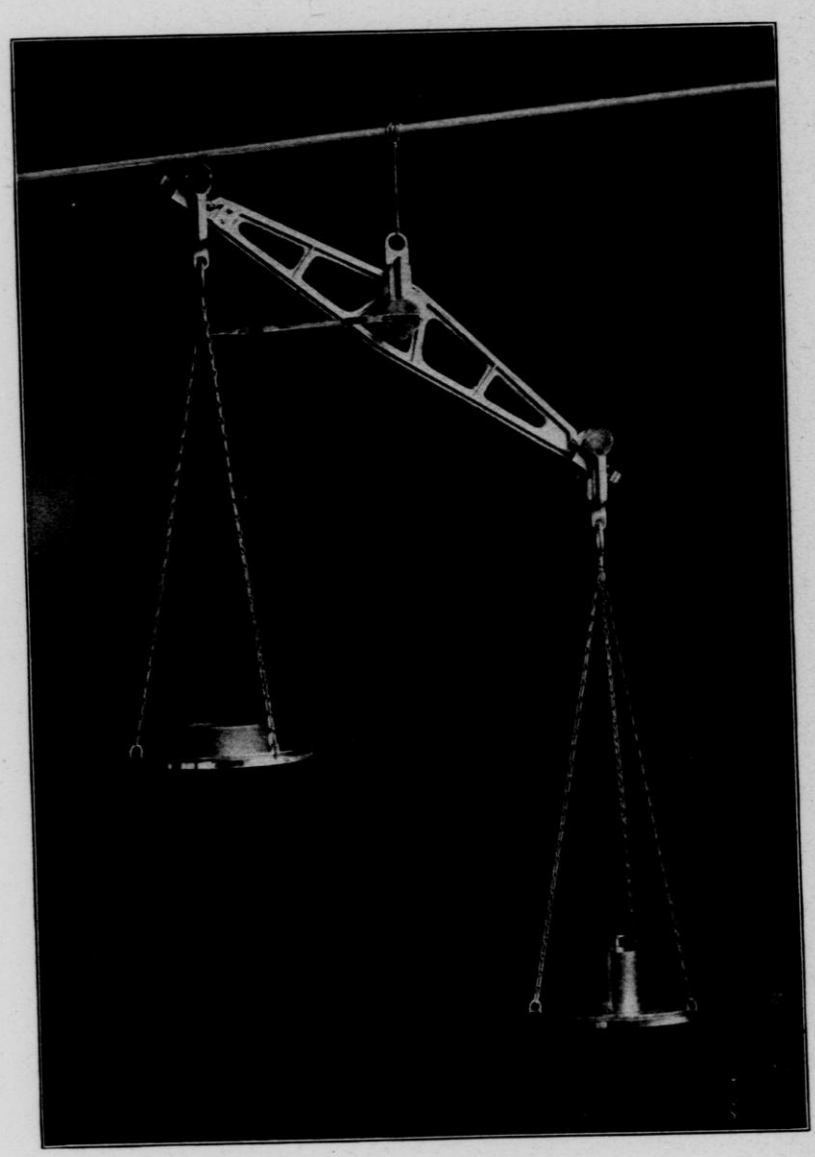


Figure 29.

Confiscated weight used in a grocery store short one ounce on pound.

Figure 30. Confiscated measures, Oshkosh.

Figure 31. Confiscated weights and measures, Milwaukee.

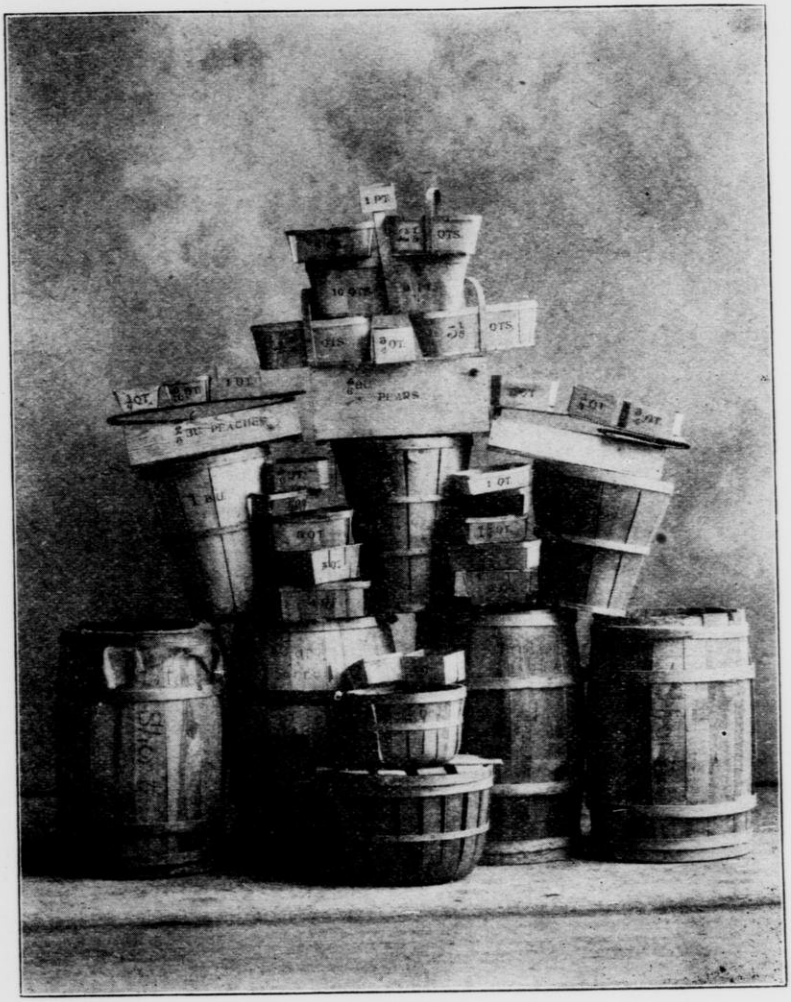


Figure 32.

Showing the varying sizes of "baskets," "barrels," "hampers," etc., and the necessity for their standardization.

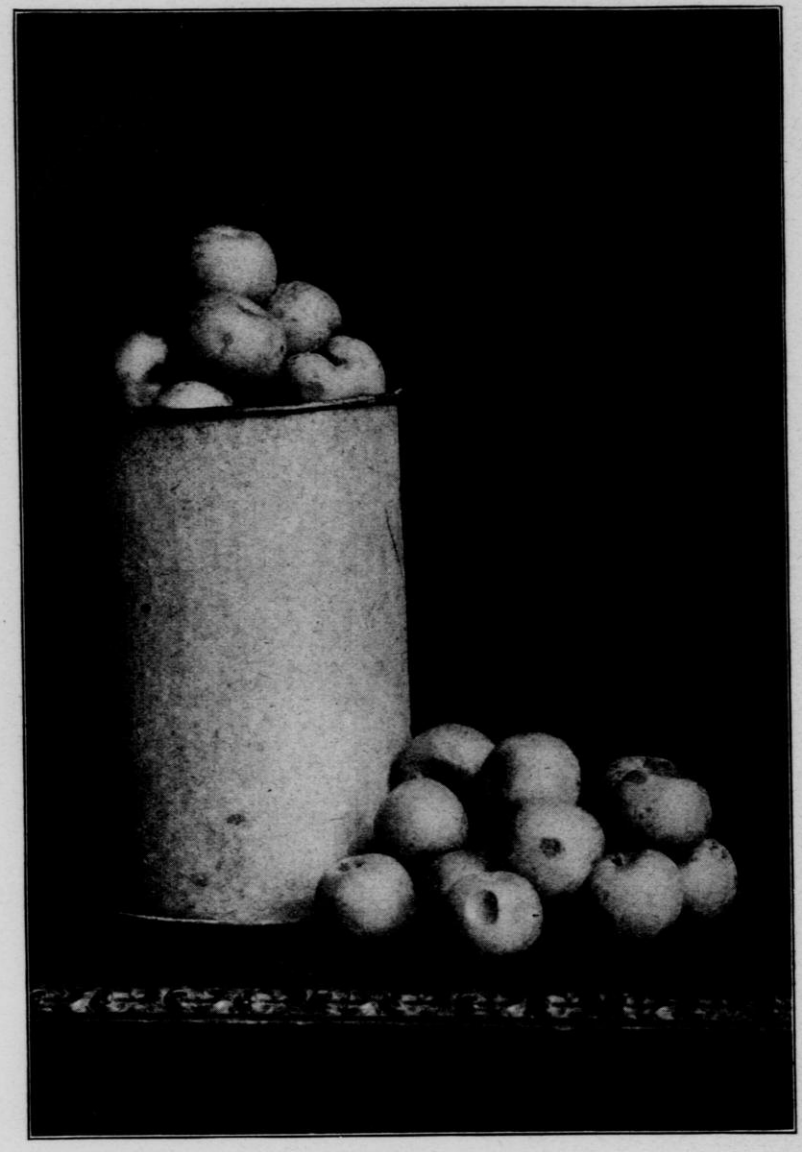


Figure 33.

Showing shortage in peck of apples as measured in "bottomless" measure.

Figure 34.

Liquid measures unlawfully used for measuring dry commodities, and bottomless measures seized by state sealers.

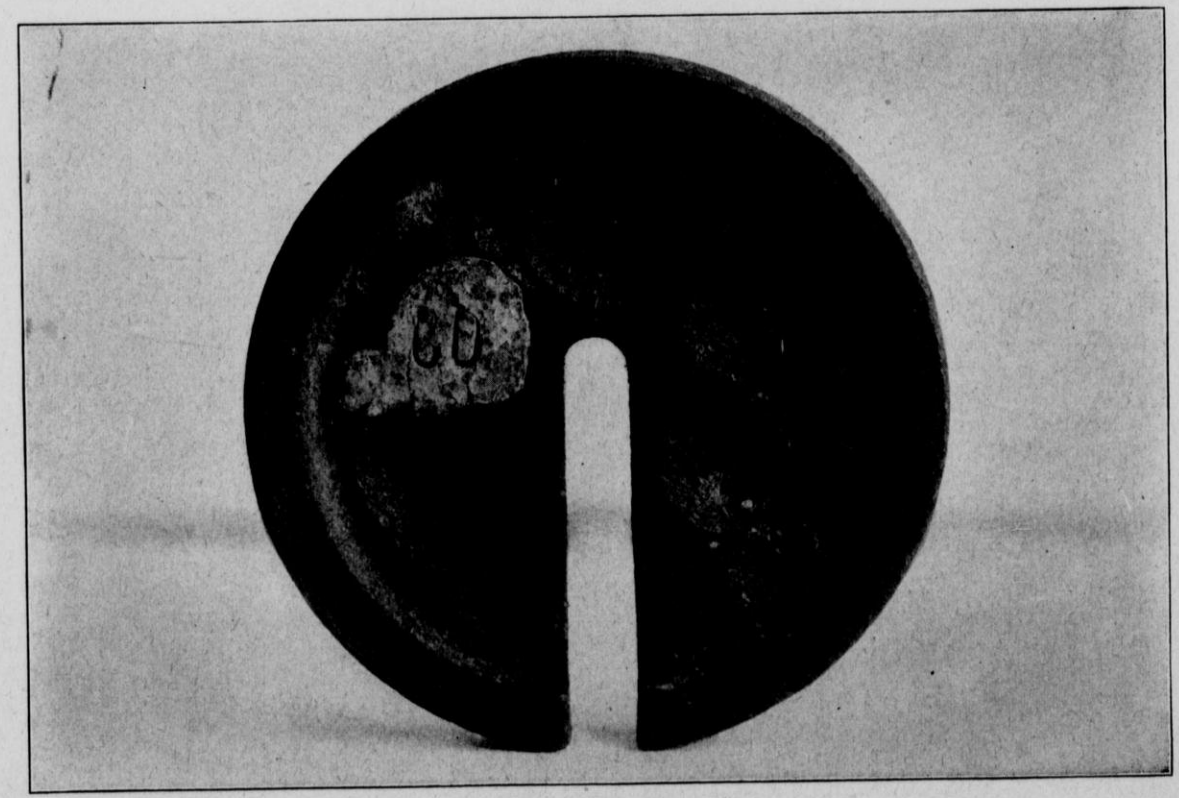


Figure 35.
Plugged weight used by potato buyer, by which he gained 26 pounds on a thousand pounds.

Figure 36. Types of berry boxes heretofore sold as "quarts."

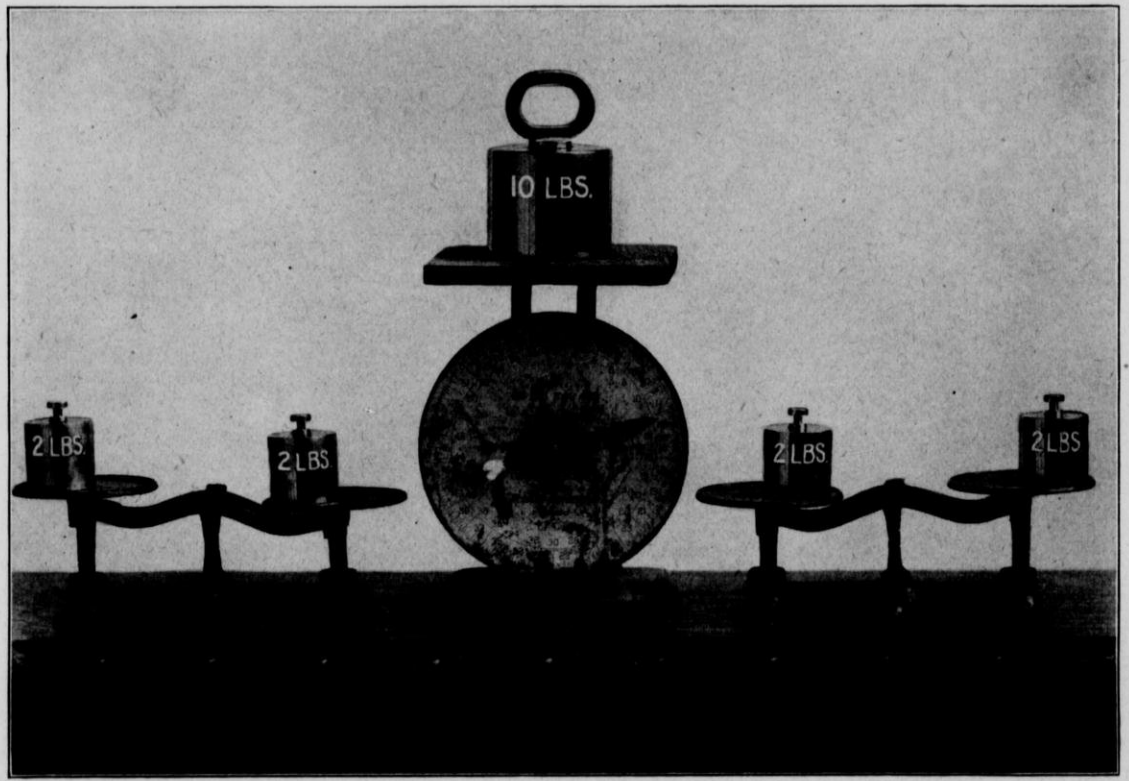


Figure 37.
Meat scales whereon 10 pounds registered 12½ pounds. Also, two even arm balances showing variation of 4 ounces by simply shifting place of load.

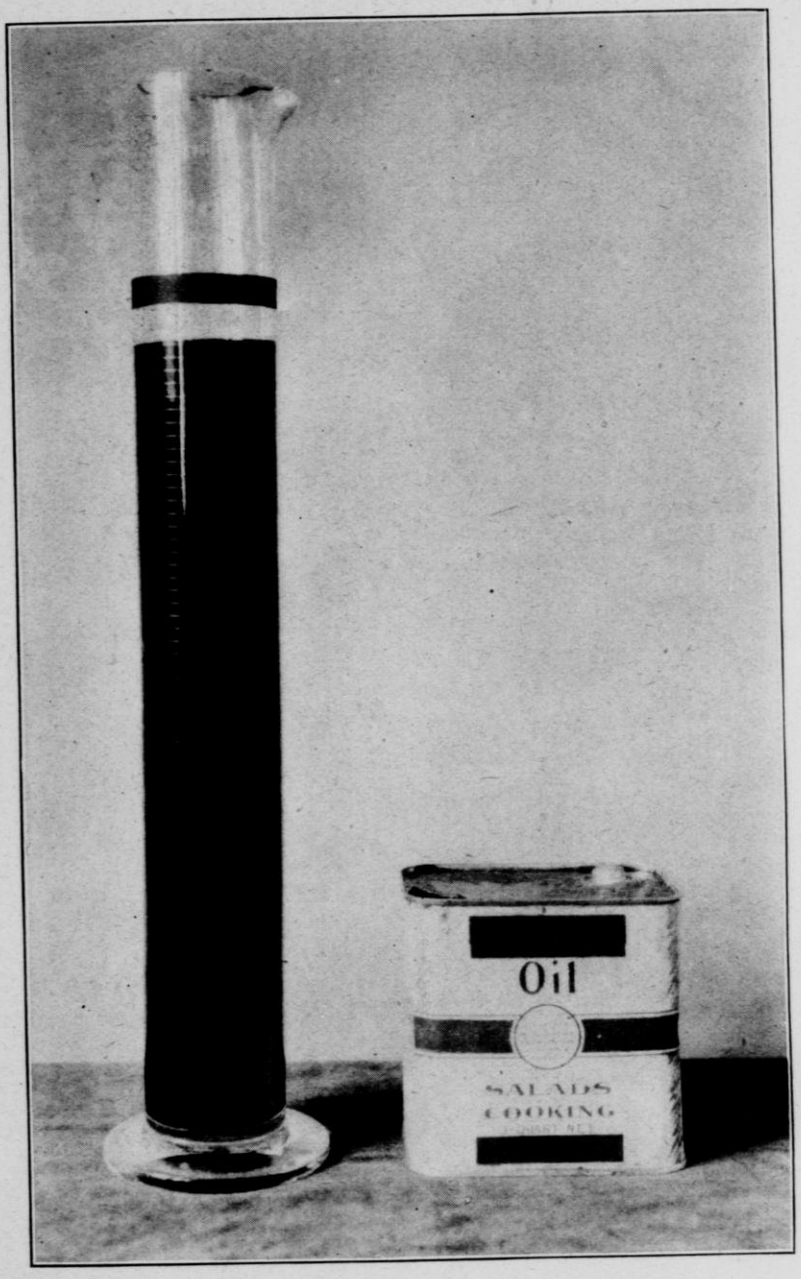


Figure 38.
D-5049.—The cooking oil from the can No. 5050 marked 1 quart net is shown in the graduate. The one-quart capacity mark is indicated by the arrow. Shortage about 3½ per cent.

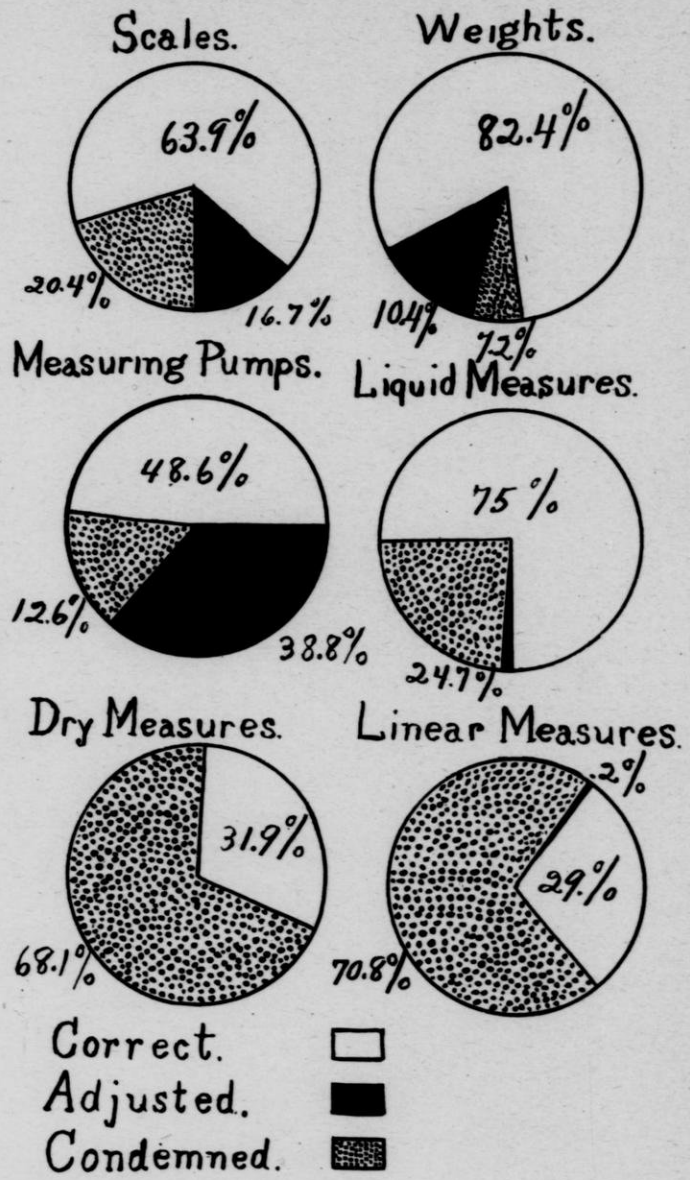


Figure 39.

Results of first testing done by Wisconsin Department of Weights and Measures, covering the first six months of 1912.