Annual report of the Wisconsin State Horticultural Society embracing the full proceedings of the meeting held at Sparta June 19-20, 1889; also the annual meeting held at Madison, February 4-7, 1890, t...

Wisconsin State Horticultural Society
Madison, Wisconsin: Democrat Printing Company, State Printers, 1890 [covers 1889/1890]

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PETER HENDERSON.

For the above cut we are indebted to *Farm, Field and Stockman*, Chicago.—SECRETARY.

ANNUAL REPORT

OF THE

WISCONSIN

State Horticultural Society

EMBRACING THE

FULL PROCEEDINGS OF THE MEETING HELD AT SPARTA JUNE 19–20, 1889; ALSO THE ANNUAL MEETING HELD AT MADISON, FEBRUARY 4–7, 1890, TOGETHER WITH REPORTS FROM COMMITTEE ON OBSERVATION, ETC., ETC.

VOLUME XX.

PREPARED BY

B. S. HOXIE, Secretary,

EVANSVILLE, WIS.

MADISON, WISCONSIN:
DEMOCRAT PRINTING COMPANY, STATE PRINTERS,
1890.

LETTER OF TRANSMITTAL.

To WILLIAM D. HOARD,

Governor of the State of Wisconsin:

SIR:—I have the honor of presenting to you the twentieth annual volume of transactions of the Wisconsin State Horticultural Society, containing accounts of the full receipts and expenditures of the society for the year 1889, together with reports of the proceedings of the annual and semi-annual meeting, embracing the full text of papers read and the discussion thereon.

Believing that this society is doing good work for the interest of horticulture in our state, I have the pleasure of subscribing myself,

Respectfully yours,

B. S. HOXIE,

Secretary Wisconsin State Horticultural Society.

WISCONSIN STATE HORTICULTURAL SOCIETY.

OFFICERS FOR 1889.

J. M. SMITH, President, ... Green Bay.
M. A. THAYER, Vice-President, ... Sparta.
B. S. HOXIE, Recording Secretary, ... Evansville.
MRS. VIE H. CAMPBELL, Treasurer, ... Evansville.
A. L. HATCH, Corresponding Secretary, . . . Ithaca.

EXECUTIVE COMMITTEE.

Ex-Officio.

THE ABOVE OFFICERS.

By Election.

Dist.		*Dist.*	
1.	GEORGE J. KELLOGG, Janesville.	5.	J. M. EDWARDS, Fort Atkinson.
2.	C. H. HAMILTON, Ripon.	6.	DANIEL HUNTLEY, Appleton.
3.	GEORGE H. ROBBINS, Platteville.	7.	C. A. HATCH, Ithaca.
4.	JAMES CURRIE, Milwaukee.	8.	WM. TOOLE, Baraboo.
		9.	WM. SPRINGER, Fremont.

COMMITTEE ON NEW FRUITS.

A. J. PHILLIPS, ... West Salem.
WM. M. SPRINGER, ... Fremont.
A. G. TUTTLE, ... Baraboo.

COMMITTEE ON NOMENCLATURE.

J. C. PLUMB, ... Milton.
CHAS. HIRSCHINGER, ... Baraboo.
G. J. KELLOGG, ... Janesville.

FINANCE COMMITTEE.

N. N. PALMER, ... Brodhead.
J. M. EDWARDS, ... Ft. Atkinson.
I. S. FREEBORN, ... Ithaca.

COMMITTEE ON LOCAL EXPERIMENTAL STATIONS.

J. M. SMITH,	Green Bay.	Horticultural Society.
B. S. HOXIE,	Evansville.	
B. F. ADAMS,	Madison.	
PROF. W. A. HENRY, PROF. E. S. GOFF,		State University.

COMMITTEE ON LEGISLATION.

M. A. THAYER,	Sparta.
B. S. HOXIE,	Evansville.
A. L. HATCH,	Ithaca.

COMMITTEE ON TRANSPORTATION.

M. A. THAYER,	Sparta.
GEO. J. KELLOGG,	Janesville.
D. C. CONVERSE,	Ft. Atkinson.

AD INTERIM COMMITTEE.

G. P. PEFFER,	Pewaukee.
WERDEN REYNOLDS,	Green Bay.
A. D. BARNES,	Waupaca.
DANIEL HUNTLEY,	Appleton.
M. GIBSON,	Berlin.
A. L. HATCH,	Ithaca.
D. C. CONVERSE,	Ft. Atkinson.
GEO. J. KELLOGG,	Janesville.
WARREN GRAY,	Darlington.

MEMBERS OF THE SOCIETY.

LIFE MEMBERS.

Geo. J. Kellogg,	Janesville.
F. W. Loudon,	Janesville.
H. S. Woodruff,	Janesville.
Mrs. Ida Tilson,	West Salem.

HONORARY LIFE MEMBERS.

Dr. Joseph Hobbins, F. C. S., Corresponding Member Royal Hort. Soc. ex-Pres.,	Madison.
O. S. Wiley, ex-Secretary,	Madison.
F. W. Case, ex-Secretary,	Chicago, Ill.
Prof. Wm. Trelease,	St. Louis, Mo.
J. S. Stickney, ex-Pres.,	Wauwatosa, Wis.
A. G. Tuttle, ex-Pres.,	Baraboo.
B. F. Adams,	Madison.
F. K. Pheonix,	Delavan.
Peter M. Gideon,	Excelsior, Minn.
E. Wilcox,	La Crosse, Wis.

ANNUAL HONORARY MEMBERS.

J. S. Harris,	La Crescent, Minn.
W. B. Lloyd,	Chicago, Ill.
Jonathan Periam,	Chicago, Ill.
Orange Judd,	Chicago, Ill.
Prof. W. A. Henry,	Madison, Wis.
Prof. A. J. Cook,	Lansing, Mich.
C. G. Patten,	Charles City, Iowa.
Chas. W. Garfield,	Lansing, Mich.
Ø. F. Brand,	Fairbault, Minn.
Mrs. A. O. Neville,	Green Bay.
Hon. John B. Peaslee,	Cincinnati, Ohio.
Mrs. E. M. Tuthill,	Madison.

LIST OF ANNUAL MEMBERS, 1890.

(Annual membership fee in this society is $1.00 per annum and expires February 1, with current year. This list contains all names of members received up to time of printing this volume.)

Adams, H. C., Madison.
Anderson, Matt, Pine Bluff.
Adams, Miss E. B., Madison.
Adams, Miss Nora F., Evansville.

Barnes, A. D., Waupaca.
Bacon, F. B., Sparta.

Campbell, Henry, Evansville.
Campbell, Mrs. Vie H., Evansville.
Chappel, F. H., Oregon.
Currie, James, Milwaukee.
Coe & Converse, Ft. Atkinson.
Cook, Alex, Waukesha.

Doty, Wm. M., 266 East Huron St., Chicago, Ill.

Edwards & Son, Ft. Atkinson.

Fox, Wm., Baraboo.
Field, S. F., East Troy.

Gale, & Son, Isaac, Waukesha.
Gibson, Hollis, Lind.
Goff, Prof. E. S., Madison.

Hatch, A. L., Ithaca.
Hatch, Mrs. A. L., Ithaca.
Hatch, C. A., Ithaca.
Hirschinger, Chas., Baraboo.
Hewitt, Clark, Waupaca.
Howie, John, Waunakee.
Hanchett, Geo., & Son, Sparta.
Huntley, Daniel, Appleton.
Haviland, Miss Dora S., Janesville.
Hoxie, B. S., Evansville.
Hoxie, Mrs. E. A., Evansville.

Jeffery, Geo., No. 630 Chestnut St., Milwaukee.
Jewett, Z. K., Sparta.

Keepers, J. B., Ripon.
Kingman, R. S., Sparta.

Morrison, W. H., Madison.
Mills, Simeon, Madison.

Plumb, J. C., Milton.
Peffer, Geo. P., Pewaukee.
Palmer, N. N., Brodhead.

Reynolds, Werden, Green Bay.
Robbins, Geo. H., Platteville.
Robbins, H., Platteville.

Smith, J. M., Green Bay.
Smith, Mrs. J. M., Green Bay.
Spencer, E., Appleton.
Seymore, Asa, Mazomanie.
Springer, Wm., Fremont.
Spry, John, Ft. Atkinson.

Toole, Wm., Baraboo.
Thayer, M. A., Sparta.
Thayer, Mrs. M. A., Sparta.

Warren, A. A., Green Bay.
Warfield, B. C., Sandoval, Ill.
Williams, Daniel, Summit.

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FRUIT LIST.

APPLES.*

Ten varieties best adapted to Wisconsin — Hardiness, productiveness and quality taken into consideration — Oldenburg, Wealthy, Fameuse, Tallman Sweet, Wolf River, McMahan's White, Yellow Transparent, Hibernal, Longfield, and Orange Winter.

Additional list for special locations — Tetofski, Red Astrachan, St. Lawrence, Fall Orange, Fall Spitzenberg, Alexander, Utter, Westfield, Willow Twig, Golden Russet, Walbridge, Pewaukee, Haas, Plumb's Cider, Roman Stem, Transparent and Repka Malenka.

CRAB APPLES.

For general cultivation — Whitney's No. 20, Gibb, Hyslop, Sweet Russet, Transcendent, Martha, Novelty, and Spitzenberg.

STRAWBERRIES.†

For general cultivation — Wilson (H), Crescent (P), Jessie (H), Bubach, No. 5 (P), and Warfield, No. 2 (P).

For light soil — Crescent (P), Wilson (H), Manchester (P), Bubach, No. 5 (P), Parry (H), and Warfield, No. 2 (P).

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*Note.— The question of adaptation of varieties is one so largely dependent upon local conditions of soil, elevation and aspect, that a general list will not answer fully the wants of every planter, and at best can only be a general guide in the selection of varieties.

For more specific directions, the following rules are furnished by the committee chosen for this purpose:

1. Locations comparatively elevated and well drained, with a cool northern aspect and limestone clay soil, not very rich, may extend the general list named above to an indefinite extent, with fair prospect of success in southern and eastern districts of the state. But for warm, sheltered location and rich soils, which induce a great growth, no section of our state can safely plant other than those varieties known to be extremely hardy.

2. The best guide in the selection of varieties is for each to plant largely of such varieties as are found successful in locations similar to that each must plant upon. For all unfavorable locations, and extreme northern districts, only the most hardy, well tried apples of the Russian or Siberian types should be chosen for general planting,

3. In the extreme northern districts, only the crown of the hills should be chosen for the orchard, with a firm soil and porous subsoil, and if these materials are wanting naturally they should be supplied artificially.

4. Better plant but few varieties.

†Note.— Those marked P are pistilate or imperfect blossom and must be fertilized with H, hermaphrodite, perfect, or S, staminate varieties.

GRAPES.

For general cultivation — Moore's Early, Worden, Concord, Delaware, Brighton, Early Victor and Telegraph.

For frosty and otherwise unfavorable locations — Janesville Champion, Moore's Early, Early Victor and Ulster's Prolific.

For trial — Niagara, Lady, Wyoming Vergennes, Lindley and Duchess.

BLACK RASPBERRIES.

For general cultivation — Gregg, Ohio, Souhegan, Nemaha, Tyler (early); recommend with winter protection. Ohio may do without protection.

RED RASPBERRIES.

For general cultivation — Cuthbert, Turner, Brandywine and Shaffer's Colossal, Marlboro, with winter protection. Turner may do without protection.

BLACKBERRIES.

For general cultivation — Snyder, Stone's Hardy, Ancient Briton. (Winter protection is recommended for all.)

For trial — Taylor, Bartel's Dewberry and Lucretia. (Winter protection is recommended for all.)

PEARS.

New sorts for trial — Bessimianka, Gakovska.

Most likely to succeed. — Flemish Beauty.

For trial in the lake shore regions. — Ananas d'Été, Early Bergamot, Bartlett, Onondaga (Swan's Orange), Seckle, Winter, Nélis, Clapp's Favorite, Beurré d' Anjou, Doyenné d'Été.

PLUMS.

For general cultivation — De Soto.

For special localities — Lombard, Imperial Gage, Yellow Gage (*Magnum Bonum*), Duane's Purple.

For trial — Cheney, Rollingstone, Wolf.

CHERRIES.

For general cultivation — Kentish (*Early Richmond*), Late Kentish Morello, English Morello.

Trial — Wragg, Ostheim and Bessarabian.

CURRANTS.

Red Dutch, White Dutch, White Grape, Victoria, Fay's Prolific, Prince Albert and Long Bunch Holland.

GOOSEBERRIES.

Houghton, Downing, American Cluster, Smith's Improved and Industry.

TREES AND SHRUBS RECOMMENDED.

EVERGREENS.

For General Planting — in order named: White Pine, Norway Spruce, White Spruce, Arbor Vitæ, Balsam Fir, Austrian Pine, Scotch Pine.

For Ornamental Planting — in order named: Hemlock, Red Cedar, Siberian Arbor Vitæ, Dwarf Pine, Red or Norway Pine.

DECIDUOUS TREES.

For Timber — White Ash, Wild Black Walnut, Hickory, Black Cherry, Butternut, White Oak, European Larch, American Larch.

Street Shade Trees — White Elm, Hard Maple, Basswood or Linden, Ashleaf Maple (*Acer Negundo*), Norway Maple, Hackberry.

For Lawn Planting — Weeping Cut-leaved Birch, American Mountain Ash, Green Ash, Horse Chestnut, European Mountain Ash, Wisconsin Weeping Willow, Oak-leaved Mountain Ash, White Birch, Weeping Golden-barked Ash, Weeping Mountain Ash, Weeping Poplar.

ORNAMENTAL SHRUBS.

Hardy Shrubs — Snowball, Syringa, Upright Honeysuckle, European Strawberry Tree, Fringe or Smoke Tree, Purple-leaved Barbary; Lilac, White, Purple, and Persian; Black Alder; Nine Bark.

Half Hardy Shrubs — Deutzia (*Gracales*), Wygelia (*Rosea*), Flowering Almond, red and white; Spirea, Prunifolia and others, Flowering Quince, Cut-leaved Sumac, Hydrangia Grandiflora.

Climbers * — American Ivy (*Ampelopis quinquefolia*), Scarlet Honeysuckle (*Lonicera sempervirens*), Fragrant Honeysuckle, (*Lomicera caprifolium*), *Clematis jackmanni*, Virgin's Bower (*Clematis verginiana*), Climbing Bitter Sweet and Ampelpsis Veitchii.

ROSES (with protection).

Climbers — Queen of the Prairie, Gem of the Prairie, Baltimore Belle.

Moss Roses — Princess Adelaide, Luxembourg and others.

Hybrid and June Roses — Persian, Yellow Harrison, Madam Plantier, General Jacqueminot, La France, General Washington.

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* Should not be planted near grape vines.

CONSTITUTION AND BY-LAWS.

As amended February, 1885.

CONSTITUTION.

ARTICLE I. This society shall be known as the Wisconsin State Horticultural Society.

ARTICLE II. Its object shall be the advancement of the art and science of horticulture throughout the state.

ARTICLE III. Its members shall consist of *annual* members, paying an annual fee of one dollar, which shall entitle the wife of such member to the privileges of full membership; of secretaries of local horticultural societies reporting to the state society, who shall be considered members *ex-officio;* of *life* members, paying a fee of ten dollars at one time; of *honorary life* members, who shall be distinguished for merit in horticultural and kindred sciences, or who shall confer any particular benefit upon the society; and *honorary annual* members, who may, by vote, be invited to participate in the proceedings of the society.

ARTICLE IV. Its officers shall consist of a President, Vice-President, Recording Secretary, Corresponding Secretary, Treasurer, Superintendent, and an Executive Board, consisting of the foregoing officers and additional members, one from each congressional district of the state, five of whom shall constitute a quorum at any of its meetings. In addition to the foregoing officers, the presidents of all local horticultural societies reporting to this society shall be deemed honorary members and *ex-officio* vice-presidents of this society. All officers shall be elected by ballot, and shall hold their office for one year thereafter, and until their successors are elected; provided, the additional executive members may be elected by the county or local horticultural societies of their respective districts.

ARTICLE V. The society shall hold its annual meeting for the election of officers, commencing on the first Monday in February. It may also hold a meeting in December of each year, at such place and time as may be decided upon by the society, or the executive committee for the exhibition of fruit and for discussions, and such other meeting for discussions and exhibitions as the executive committee may direct, at such time and place as the executive board shall designate.

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

BY-LAWS.

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

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

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

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

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

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

VII. The standing committees of this society shall be as follows: 1st, Committee on Finance, consisting of three members; 2d, Committee on Nomenclature and New Fruits, consisting of three members; 3d, Committee on Observation, as now provided. Said committee to be appointed anuually by the executive committee of the society.

ACT OF REORGANIZATION,

AND LAWS RELATING TO THE

STATE HORTICULTURAL SOCIETY.

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

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

SECTION 2. The present officers and executive committee of said society shall hold their respective offices until the Tuesday next succeeding the first Monday in February, 1880, and until their successors are appointed.

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

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

SECTION 5. All vacancies in the offices of said society may be filled by the executive committee; and should there be a failure to elect a member of the executive committee in any district, the vacancy may be filled by a two-thirds vote of the members of the society present at any regularly appointed meeting.

SECTION 6. It shall be the duty of the secretary of said society to make an annual report to the governor of the state of the transactions of the

society, including an itemized account of all money expended during the year, in addition to such matters as are now specified in the law relating to the same.

CHAPTER 526, LAWS OF 1889.

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

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Horticultural Society, ten copies to each county agricultural society, and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of each of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university, to the governor, lieutenant governor, secretary of state, state treasurer, attorney-general, state superintendent of public instruction, railroad commissioner and insurance commissioner, twenty-five copies each; to the state superintendent of agricultural institute, fifty copies; to the superintendent of public property, commissioner of labor statistics, adjutant-general, quartermaster general, state board of health, each ten copies; to each public library in the state two copies; to each state normal school, two copies; to each of the state charitable and penal institutions one copy; and the remaining copies to the respective societies for distribution by their secretaries.

SECTION 7. In no case shall the number of printed pages in any report provided for in the act exceed the maximum number specified, except upon

written request of the officer submitting the same, and then only upon previous written approval of a majority of the commissioners of public printing, such application and approval to be filed with the secretary of state.

CHAPTER 417, LAWS OF 1889.

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

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

Approved April 16, 1889.

JOINT RESOLUTION NO. 19, A.

WHEREAS, The Wisconsin State Horticultural Society has many valuable books which it is desirable shall be preserved; and

WHEREAS, Many such have heretofore been lost in moving from room to room; therefore,

Resolved by the assembly, the senate concurring, That room number twenty-seven (27) in the capitol, is hereby set apart for the permanent use of said horticultural society; provided, that nothing herein contained shall be construed to prevent its use by the clerical force of either branch of the legislature during any session thereof.

REPORT

OF THE

TRANSACTIONS AT THE SUMMER MEETING

OF THE

Wisconsin State Horticultural Society

At Opera Hall, Sparta, June 19 and 20, 1889.

OPERA HALL, June 19th, 11 o'clock A. M.

President Smith, in calling to order, stated that as this morning session was simply to organize for the work of the meeting, he would simply thank the friends of horticulture, at Sparta, for the very pleasant surroundings which we see here to-day, fruits and flowers in abundance and great variety. He was also gratified to see so many present at the morning session and would bespeak a pleasant and profitable meeting. The following announcement of committees was made when he declared an adjournment until 1:30 P. M.

Superintendent of Fruit and Flower Exhibit — Mr. Z. K. Jewett, Sparta.

Committee on Fruit — Daniel Huntley, of Appleton; Wm. Springer, of Fremont, and Mrs. E. A. Hoxie, Evansville.

Committee on Plants and Flowers — Wm. Toole, Baraboo; A. I. Gale, Waukesha, and Mrs. E. G. Marriott, Baraboo.

Committee on Cut Flowers — A. L. Hatch, Ithaca; Mrs. Vie H. Campbell, Evansville, and Mrs. J. M. Smith, Green Bay.

Committee on Resolutions — A. D. Barnes, Waupaca; D. C. Converse, Ft. Atkinson; L. G. Kellogg, Ripon, and A. I. Gale, Waukesha.

OPERA HALL, 2 o'clock P. M.

President Smith in the chair.

After singing by the Glee Club, Hon. M. A. Thayer, of Sparta, gave the following address of welcome which was responded to by A. L. Hatch, of Ithaca, Wis.:

Mr. President, Ladies and Gentlemen of the State Horticultural Society:— In this your first meeting with us, there are many reasons why I extend to you in behalf of our citizens a *most hearty welcome.* We have within a few miles of our city, nearly 100 acres of small fruit newly planted, and more than 25 persons growing one-half acre or more. Some have embarked in this industry without taste or knowledge to make it a success, and few realize the thorough culture and high fertilization necessary to raise small fruit and make it a prosperous business. Without organization, without experience in horticulture, without knowledge of varieties and their adaptation to our climate and soils, most of us are looking to you for counsel and advice in this direction. In no part of our state is there better opportunity for good work by your society than here. Situated as we are, in the beautiful La Crosse Valley, surrounded by high bluffs and wooded hills, possessing a great variety of soils, adapted to all small fruits, with the boundless prairies for our markets and shipping facilities unsurpassed, we feel that the development of the principles you represent will increase our material wealth. We see in horticulture new values in our land, added prosperity to our city, and an industry that may reach the door of every cottage and give employment to rich and poor. We see in horticulture health of body, the doctor's foe, and strength of mind, the bigot's bane. We see pleasant homes with pleasing duties well performed. The *true* horticulturist stands *close to nature*, the fruit and flower that was not, he causes to be. A thousand different forms of fairest fruits and fragrant flowers slumber in his garden, waiting only for his magic touch and tender care.

In the great household of nature the horticulturist stands at the door of the conservatory and fruit room, weighing out the sweetest morsels to sense and taste. There is no pleasure more lasting and no labor more honorable. From the garden of Eden down to the present time, it has lost none of its ancient charm. It has in all ages been an index of the world's progress. *Agriculture* is the foundation of prosperity, and all nobility rests on the *possession* and *use* of land. *Horticulture* is the best clothes, the spare room, the parlor, the nick-nacks, the holiday of agriculture. It is a bank account wherein deposits to our credit, have been made for generations, on which all checks and drafts, if properly drawn are never dishonored. "The man who plants a grove, or an orchard, or a fruit or flower garden, reclaims unproductive land, constructs a fountain or builds a seat by the roadside," makes the land lovely, helps society at large, gives himself a lasting pleasure, and advances the noble cause of horticulture.

The true horticulturist should look beyond the mere physical form of his fruit and the dollar it brings. Whence comes the germination, its bud, flower and fruit. The chemical changes by which mineral, vegetable and animal forms are prepared for its food. How it sends out a thousand mouths to feed on and appropriate whatever it needs from sun, air and earth. How it seems to bless us in its strength, and its weakness chide us for neglect.

Yes, more, in every stage of development from bursting bud to falling fruit. God himself is calling to us through these forms of beauty to come up higher, think better thoughts, do better deeds, and live better lives. This is the tendency of horticulture, and in this spirit we welcome you as an organization at this time.

Socially and individually we are pleased to have you with us. Our best endeavor is at your service, and knowing many of you personally, and most of you by reputation, we bespeak for all a pleasant and profitable session.

Response, A. L. Hatch, Ithaca, Wis.

Mr. President, Ladies and Gentlemen: — I thank you, Mr. Thayer, and the people of Monroe county, for the hearty words of welcome just uttered. It is with great reluctance that I stand in the place of the Hon. H. C. Adams, and it is doubtless a disappointment to you not to be able to listen to him at this time, as he is descended from the old family Adams of Revolutionary fame on one side, and Daniel Webster on the other; he is one of the most powerful orators of this state. Words of eloquence seem to flow from his tongue as water from a fountain.

I wish to say to you that each and every one of the members of the State Horticultural Society respond to the hearty words that have been uttered by your speaker and thank you for this welcome — both for the words spoken and for the kindly feeling manifested in the manner of your welcome to us — the beautiful music, harmony of sound; beautiful flowers, harmony of color. Noble women and noble men have united in this friendly greeting, and the welcome comes even from the boys and girls.

We hope to reach the high ideal which has been mentioned, and hope that Sparta may derive benefit and instruction from our visit as we expect to receive benefit on account of it, and that all of us may take a renewed interest in horticulture and that horticulture here may develop more fully, and your love for it as a means of recreation, as well as a means of obtaining money. May fruit culture increase, and when your bargaining shall cease and the banks have your hoarded wealth and you turn from hard toil and slavish care, you will look to horticulture for pleasure, we hope you will find it to be what it has been illustrated to be in this country; of what it is and what it can be you have a good illustration in the president of this society — a man who has been our president for ten years and

brings culture and experience to assist our efforts and help us in our work. We hope to see the time when you will be one with us to advise and help out of many of the difficulties we have had and still have to contend with in the climate of Wisconsin. We hope your efforts will bring about the time when horticulture shall affect the culture and life of Wisconsin, by beautifying and ennobling our thoughts and aims, and more particularly do I wish that it may enter into your own lives more fully and add new pleasure to the lives of those residing in Sparta and Monroe county.

GRAPES.

BY WILLIAM FOX.

Mr. William Fox, of Baraboo, Wis., was called upon to make a few remarks upon grape culture, and responded as follows:

Mr. President, Ladies and Gentlemen: — I am not prepared to be placed in this situation and it is hardly fair to get me here with a short-hand reporter to take down what I say, but I presume there is no one in this audience who does not like a nice bunch of grapes, so I will make a few remarks.

The first point in grape culture is location, and should receive careful attention. Land sloping toward the south and southeast is the best.

The second thing to be considered is the soil. If you have a clay soil to start a new vineyard you will have more difficulties of every nature than in a sandy loam. If you have sandy loam it is easier to make a vineyard; but if you have a clay ground prepare your soil with a great deal more care than otherwise. Plow deep, harrow well and get your ground in good condition before you plant your vines. Take more care when you set your plants in clay soil and mix it well with sand in the hill at least, as it seems the roots can not get as much nourishment out of clay soil and strike out as well as those set in loamy soil.

The next point of importance is the selection of varieties. Under this head come difficulties. Vine growers in Wisconsin should plant only such varieties as will mature. We have a good many varieties that early in the season promise an abundance of fruit, but they ripen late and are nipped by the early frosts. So a person going to set out a vineyard should always inquire of persons who are authority on the subject, as to the season the different varieties ripen, and should also understand the frost line of his locality.

The next item of importance is the selection of roots. A man in selecting these should aim to buy a first-class article. He had better pay a trifle more for a first-class plant than get a cheaper one and make a failure of it.

When all these things are ready mark out your lines in the vineyard. My rule is to plant vineyards parallel in straight rows ten by twelve feet apart, so you can get through with horses and reduce hand labor to a mere minimum. When I have my lines marked and trenches dug and ready to receive the plant, I take twenty-five or fifty, and cut the tops back and leave only two buds; then I take the twenty-five or fifty plants and put them into a pail of water and take with me, and as I plant one I take it out of the pail of water and put it in the trench, aiming to plant the roots all one way; so I make the hole or trench as long as the roots and just as deep as the stem is long; some are six inches, some eight inches and some nine inches. So you see as to depth I am always guided by the stems.

I have been in a little vineyard here in this town where the owner is having trouble from mildew on account of planting too close together. I advised him to the best of my ability and hope he will have better luck next year.

When you plant too close together the main difficulty is mildew. Many people plant as close as four feet and then the tops and roots have not room to run and you have to cut them back and will not get as much fruit as by planting ten by twelve; then the air can reach the roots and give them nourishment. I am confident that if you follow out the plan of planting ten by twelve you will never regret it.

When I have planted I take care of the vines and plow and cultivate them during the summer. The first thing you know a bud comes, then a leaf, then a second bud and then a second leaf.

In pruning I leave the main stem. The more you break the branches away the stronger the main cane becomes and in the fall of the first year cut the vine back to two buds. In that way the root will get more strength and more healthy bearing branches.

I wait until the first of November before I commence to cover my vines, and then I take a little straw and lay it around the plants and put a little soil over it. That is my winter covering. The next spring, uncover as soon as possible, but try to avoid the severe late frosts. This year we had frosts in May, and I got caught anyway. When uncovered you will find the two buds. Let them both grow the second year. By fall you will have two healthy canes. I tie my vines to poles.

Now as to pruning. There are two principal systems of pruning, the spur system and the renewal system. In the renewal system we often loose the next year's crop. In pruning according to the renewal system you cut away all the old wood to the ground each fall and leave only new canes, the canes that started the spring before, these the next year bear fruit. The spur system is the way they do it on the Rhine, but here where the vines have to be covered in the fall it is hardly practicable as the cane gets hard and is hard to lay down in the fall without breaking. Cut the branches away the first year, then let them go two or three years, as long as they are manageable and you can lay them down in the fall and keep

them. After experimenting I have given up both of these old systems as not adapted to our climate. The fall of the first year I prune the vine back to two buds and cover well with straw and soil. In the spring there will be two buds, let them grow to be four or five feet long before checking. The next fall, the fall of the second year, I leave the best of these two canes and cut the other back to two buds. Each year I save the best sprouts. Judgment must be used as to the best canes to leave. Do not cut the healthy cane away any more than you can help. There is such a thing as checking the vine at the expense of the fruit and vine. You may severely check a grape vine and get a large cluster but never the finest quality.

We have another custom in this country. A farmer saw my vines and said "it has too many leaves." "Your grapes cannot ripen, you can never get a good color or a perfect bunch." You will never get a good, ripe color by cutting the leaves away — leave them on.

DISCUSSION.

Mr. Kellogg — Tell us the best five varieties of grapes for farmers?

A.— With me a good variety is Moore's Early and the Brighton. For family use you might put in a few Concords, Early Victor and the Worden, but neither of the last are good market grapes.

Q.— Mr. Gibson: Explain the renewal and spur system of pruning?

A.— The renewal system is cutting away every year the old wood and leaving nothing but the new canes that grew the previous year. The spur system is where you leave a nice long limb or two, and the branches that come on these limbs bear the fruit. Then cut back the branches in the fall. I don't like to cut an arm away too close to the main branch. I explained to Mr. Toole this morning that he could not be too particular about close pruning. If you cut too close to the main branch it takes longer for the new bud to come than if you do not cut so close. Take a new spur with two buds in the spring, the bud comes larger and quicker and bears a larger, finer fruit. By the spur system you raise the largest, finest fruit if you don't carry it too far. By the renewal system we raise the largest num-

ber of grapes but not the finest quality, in a good season, but in an unfavorable season you will get few or none, because the vines are undeveloped and cannot perfect the fruit. That is as near as I can explain that point. (Illustrates.) We will let this be the vine; that we call the main cane. I would cut that (indicating part of branch about two inches from main arm) away and leave the two buds, and cut away about an inch behind the buds. I never break the spurs away next the main vine.

Q.—Mr. Hatch: You say you want to leave all the leaves you can. We have a vine that is making a good growth and carrying all the foliage and new sprouts are reaching away up. Can you in the fall do anything in the way of cutting off these vines or leaves and assist the maturing of the grapes? Is it a wise or foolish thing to do?

A.—In July you can go to the vineyard and pinch, like you pinch back the raspberry — like checking the raspberry. Checking done properly does not injure the vine.

Q.—Mr. Hatch: Did you go over your vine and pinch back these branches growing out there beyond the bunches of fruit, simply branches of leaves?

A.—I have done it carefully in about four acres myself.

Q.—How long did it take you to go over four acres of vines set ten by twelve? What I want to get at is, do you consider a man had better put in his time to pinch back or planting new vines?

A.—I don't believe in planting too many vines. That is a mistake. I don't believe in planting too many new vines. When I left my grandfather he hadn't planted any for fifteen years.

Q.—A member: White grapes, have you ever had any of them?

A.—I have twenty-four varieties of white grapes planted. Some are fine and of a delicious quality, but I can not stand here and recommend them. I do not feel that I have experimented enough with them to give a satisfactory recommendation.

Q.—Mr. Huntley: What do you use to fertilize?

A.—Manure and Chespeak Guano.

Q.—Have you ever used pen litter?

A.—No, I haven't. I have used ashes and chicken manure.

Q.—Do you fertilize every year?

A.—Yes, I believe it gives the best results.

Q.—Which do you prefer, high training or low?

A.—I use three or four stakes to the hill, and train as high as I can. I believe a grape vine ought to be trained so as to have a perfect circulation of air.

Mr. Barnes—We have a Switzer in our town who never trains above three feet high.

A.—I think six or eight feet high is the best. I believe in air and sunshine. I aim to not tie too many branches to the same pole, and in the fall when you get an order for five hundred pounds of grapes you can cut the bunches and never disturb those which remain.

Q.—Mr. Huntley: Have you ever bagged any grapes?

A.—I have.

Q.—What do you think of the practice?

A.—I am not so much in favor of it. They are safe from the birds.

Q.—What do you think of the K. Wood system of pruning? I have reference to the summer pruning and the style of trellis he used which does away with the system of bagging and gets the same results.

A.—I haven't seen it. I asked Mr. K. Wood last week to send it to me but he has not.

Q.—I got a letter from Mr. K. Wood, perhaps I can give in a word or two. I had written to get his system as I wished to experiment with it. According to that request of mine he said summer pruning was barbarous, he never cuts a leaf in summer. He thinks two leaves twice as good as one, and ten, ten times as good as one, and would advise having foliage enough to cover the grapes entirely. His system is this—he has a platform about four feet wide with the surface covered with the vines. They are perhaps a foot deep near the top. A person can go over his vineyard and never see a grape, a bird can never get a grape, they will be under the platform. In the fall they will be

cut back and pruned out. What do you think of that practice?

A.—I cannot answer, I never prune in the summer.

Q.—Mr. Hatch: How do you cultivate grapes?

A.—I plow.

Q.—How deep, what kind of plow do you use?

A.—A small plow, what we call a hock plow. I plow and cultivate once a week all through the summer. I may stop when the branches begin to bloom, they may all bloom in the course of a week, then I commence plowing again.

Q.—Do you grow potatoes or any other crop between your grapes?

A.—No, sir.

Q.—Mr. Hatch: Do you think there is any injury in breaking the surface roots by deep cultivation, say two to four inches?

A.—Not if you plant deep.

Q.—Mr. Smith: Tell us how many pounds you call a fair crop of grapes?

A.—From an acre and a half I never raise less than two ton. I have raised as high as nine ton from an acre and a half. That would be six tons per acre. 1878 was the best year. From an acre and a half I look to get four or five ton. I have the figures for thirteen years.

Q.—Mr. Thayer: What do you consider a fair average price per pound?

A.—Five cents is the least I have ever sold at.

Grape discussion closed, and the chair called for music by the band.

President Smith—The State Horticultural Society have long been hoping the time would come when we could have a professor of horticulture in our university. At last our expectations have been realized. He is with us to-day for the first time, and I take great pleasure in introducing to you Prof. Goff, who will speak on the Spraying Pump and Insecticides.

Prof. E. S. Goff—I will say it gives me great pleasure to meet with you, and I feel a great desire to become acquainted with Wisconsin horticulturists.

THE SPRAYING PUMP IN HORTICULTURE.

BY E. S. GOFF, PROFESSOR OF HORTICULTURE, UNIVERSITY OF WISCONSIN.

In the spring of 1869, the orchard of Hon. J. S. Woodward, of Niagara County, N. Y., and that of a friend of his, was attacked by canker worms. Having heard that Paris green had been successfully used for destroying this pest, Mr. Woodward directed his men to make the experiment of spraying the infested trees with water containing a small percentage of this arsenical poison, and advised his friend to do the same, which he did. The trial proved entirely successful, so far as destroying the canker worms was concerned, and little more was thought of it until the time for harvesting the fruit. His man now observed, or thought he did, that the apples on the trees that had been sprayed with the Paris green water were decidedly less injured by the codling moth than those on adjacent trees of the same variety that had not been sprayed. Mr. Woodward was at first quite incredulous of this statement. He could not understand, he said, how the Paris green could affect an insect that did not feed upon the foliage of the tree. But fortunately, his incredulity did not prevent him from making a careful examination of the facts. After looking over thoroughly, the apples from his own trees, and those from his friend's, he was convinced that his man was right. He repeated the spraying the following year with the same result, and becoming convinced that the codling moth may be largely controlled in this way, he communicated the results of his experiments to the Western New York Horticultural Society.

This simple remedy soon began to be used by many other apple growers, and instead of being found inefficient as so many new ideas are, it soon appeared that not only the canker worm and codling moth could be held under subjection by it, but that other insects, notably the tent caterpillar and apple bucculatrix, were also effectually destroyed by the same application. Some aggressive experiments even went so far as to try it for the plum curculio, probably expecting little from it. But here a new surprise awaited both fruit growers and entomologists. It soon appeared that even the destructive "little Turk" that has so nearly driven the plum out of our orchards and markets for the last three-quarters of a century, seems likely to fall a victim to this new method of treatment. The entomologists at first declared it could not be. The curculio said they, neither feeds on the fruit nor the foliage, and so cannot be reached in this way. But abundant evidence was furnished them that injuries from the insect were lessened where the application had been used, and now we have no less an authority than Prof. Comstock, of Cornell university, officially declaring in a bulletin from that institution, that the curculio does feed on both the foliage and fruit of the plum.

Such in brief, is the history of one of the most important horticultural discoveries of the century. As we shall see later, its ultimate value has probably not yet been fully developed. I will next proceed to give some of the details necessary to be observed in using spraying mixtures. The arsenical poisons, Paris green and London purple, are the ones most generally employed. The common white arsenic of commerce would be cheaper than either, but as it is somewhat soluble in water, and hence is absorbed to some extent by the foliage, it proves very injurious to the latter. Besides, as it is a white powder, it bears a close resemblance to various domestic articles, and hence is a more dangerous poison to keep on hand than either of the compounds named above. Between Paris green and London purple, the preference is now generally given to the latter, as it costs but about half as much for the same amount of arsenic, and what is perhaps quite as important, it remains suspended longer in the water, thus requiring less stirring in the barrel. Some think, also, that it is rather less liable to injure the foliage than Paris green. About one-half a pound to the one hundred gallons of water is found to be the proper amount to use. More than this is liable to injure foliage, though it does not always do so.

It is important that the spraying be made at just the right time. If done too early, it will not accomplish the object, while it is likely to work harm by destroying bees and various other insects that visit the flowers of fruit trees for perfectly legitimate reasons. If done too late, the calyx of the fruit is liable to be so far closed that it does not so readily receive the poison, the best time is just after the petals have done falling. If for any reason the work cannot be done at this time, it had better be done later than not at all. Experience shows that sprayings made as late as when the fruit has attained the size of large cherries has been productive of much good. It is generally advisable to repeat the spraying about ten days after it is made, especially if heavy rains fall in the meantime.

How much good does spraying really do? This is an important question, and the one that must decide to what extent it may be profitably practiced. In the year 1888 Professor Forbes, of Illinois, made a series of very thorough and careful trials at the University of Illinois, from which it appeared that the proportion of apples saved from injury by the codling moth amounted to about seventy per cent. A trial conducted by myself at the New York Agricultural Experiment Station in 1885 showed a saving of about sixty-nine per cent. The experiments of Mr. Clarence M. Weed, at the Ohio Agricultural Experiment Station in the use of London purple for the curculio on cherries indicated a saving of seventy-five per cent. All these experiments, it should be remembered, were thoroughly conducted, and they may therefore be considered to represent the maximum benefit that we may look for from this source. I have no data to offer in relation to the amount of benefit that accrues from a single spraying made at the proper time. It is probable, however, that the greater part of the good is accomplished by one or two treatments.

I mentioned that the curculio on the plum has also been to some extent held in check by this same remedy. Many who have tried it testify to this fact, but I know of no experiments that have been conducted in such a way as to tell us precisely how far we may hope to control this insect in this way. Last season, I sprayed three trees of the General Hand plum that had rarely, if ever, matured any fruit, with water containing London purple at the rate of an ounce to ten gallons, applying the mixture at three different times. The result was that the trees ripened a fair crop of very fine plums. The curculio was rather less destructive about Geneva last season than usual, hence I cannot say positively how far the crop was due to the spraying, but I have no doubt that the greater part of it was. It augrus well for the value of this remedy that Prof. Cook, of Michigan, who formerly had no faith in it, has changed his views, and now considers it of the greatest importance. Professor Cook now believes that by planting a few plum trees in our pear and apple orchards, and spraying these at the proper time, we may not only secure a crop of plums from these, but that the curculio will so far congregate on these trees that the pears and apples will be very little injured by it.

Another field of usefulness for the spraying pump is now being developed in the treatment of fungus diseases. The experiments made at Geneva show conclusively that the apple scab may to some extent, at least, be controlled by spraying the trees with certain compounds of sulphur, notably hyposulphite of soda, and sulphide of potassium. The use of these has in every case been followed with beneficial results, and in some cases the effect was striking, making the difference between a good and a very poor crop of fruit. I will add that through the assistance of the United States Department of Agriculture, and our esteemed member, Mr. Hatch, our Station is making further experiments in this line this season.

In closing, I desire to briefly allude to the experiments of the Department of Agriculture, conducted under the direction of Professor Scribner and Mr. Galloway, in the treatment of the black rot of the grape, in which the spraying pump also comes in for a share of the credit. The results of these trials are so satisfactory, that it is thought we have a positive remedy for this most destructive disease.

The spraying pump is rapidly becoming an indispensable requisite to successful fruit growing.

DISCUSSION.

Q.—When do the apples turn downward?

A.—Prof. Goff: I find the apples do not turn downward as soon as I formerly thought they did. I think it is not as important as the matter of the calyx closing.

Q.—Why is not arsenic a good material to use?

A.—The white arsenic dissolves in the water, hence can not be used without injuring the foliage.

Q.—Which causes the most injury, the curculio or the codling moth?

A.—Prof. Goff: So far as my observation goes this year I find the injury greater from the curculio than from the codling moth.

Q.—Mr. Thayer: How shall we destroy the currant worm?

A.—Mrs. Smith: The way I generally do is to use hellebore.

Q.—Powder or solution?

A.—Mrs. Smith: I will explain the way we do. Sometimes where we have a large amount of currants we find it is cheaper the first time to use London purple, because it kills the worm and does not injure the currant as it is too small at that time, and the London purple washes off before it can do the fruit any harm.

Q.—Do you find it necessary to go over more than once to destroy the worms?

A.—Mrs. Smith: Almost always. The main secret is to watch for its first appearance on the lower leaves. Watch closely the leaves, and as soon as the worm appears apply the London purple.

Q.—Mr. Thayer: Can you apply it dry, or do you use the spraying pump.

A.—Mrs. Smith: The spraying pump.

Q.—How do you use the hellebore?

A.—Mrs. Smith: Spray carefully.

Mr. Hatch: I generally make a paste of it first, put the hellebore in a cloth, then put the cloth in the water and work it out through the cloth. It is very much better managed in this way as you get a clearer spray and a stronger solution. When it is dissolved enough dilute it and apply with the spraying pump. London purple does very well.

Q.—Is not the hellebore as destructive in a dry state as in a solution?

A.—Prof. Goff: Yes.

Q.—Is it not easier to handle?

A.—Prof. Goff: There is more waste in applying it.

Mr. Hatch—Most of the insects work on the under side of the leaf. With the powder you cannot reach them while if made in a paste and sent in a spray as water you can save your material and force it under the leaves. In regard to plant lice I use a solution of potassium. It destroys them.

Q.—Prof. Goff: Does it destroy them?

Mr. Hatch—Yes, sir. Wet it once and the alkali will destroy them.

Mrs. Smith—You spoke of rubbing the hellebore through a cloth before using. Why not put the powder first in a pail of warm water?

Mr. Hatch—It is quicker than cold water, perhaps as good, on our plums that were sprayed the curculio were everyone destroyed.

President Smith—Can Mr. Jewett tell us anything about a remedy?

Mr. Jewett—I don't know as I can give any except—they have been very bad this year—the only recommendation I have to offer is use three or four hundred pounds of salt to an acre.

Mr. Kellogg—About the application of poisons for the scab. Is it too late now?

A.—Prof. Goff: I spray for the scab and codling moth at the same time.

Q.—What of kerosene? How do use that?

Prof. Goff—We heat water boiling hot, put in soap and then mix in the kerosene.

Q.—How much water?

Prof. Goff—That depends on the plant. Diluted with the other ingredients there is very little danger of the kerosene injuring the foliage.

Q.—For apple trees?

Prof. Goff—With apple trees it should be diluted: one gallon water, one quart of soap, one quart of kerosene. Dilute with ten gallons of water.

Mr. Toole—By simply mixing the ingredients will the soap and kerosene mix readily?

Prof. Goff—Not very readily. Stir until cold. It has never seemed to me a sufficient insecticide. My experience has not been satisfactory.

Mr. Toole—I have tried it a good many times and I want to have some one else give it a trial.

Prof. Goff—I am still experimenting with kerosene, injecting it directly with water. I have a spraying machine that makes a spray of water and at the same time one of kerosene. I cannot say whether it will be practicable or not.

Q.—Do you know of a mixture called Napthaila? I bought a bottle and used it. I used it sprinkling the same way as other insecticides, and used it on plum trees.

A.—I have used Napthaila in the greenhouse on house plants, with some success.

Mr. Hatch—What are we going to do with the rust on blackberries and strawberries?

Prof. Goff—I would recommend you to send to the department of agriculture for circulars giving various formulas for applications for mildew. The department has also issued a bulletin on the treatment for the codling moth.

Mr. Smith—I have been having the currant worm for years, and this is my remedy: Take a pail with three gallons of water, one-half spoon of hellebore, then take a common market sprinkler. It is better to take the sprinkler, because as a man goes over the plants he can open the bushes with one hand and carry the sprinkler in the other. We watch for the worm. They make their first appearance near the ground on the underside. Open the bush with one hand and sprinkle where you see any signs of them, and kill them. I had two little Belgians at work for me the other day. They went over nearly an acre in less than half a day. That was the third time we had gone over it. They eat off the edge of the leaves as a rule, and can easily be seen.

Mr. Hatch—I used about twenty or thirty pounds of London purple the past year and I use it for the curran worm. You will find it much better than Paris green. Paris green will cost you forty cents per pound.

Mr. Huntley — How much to a pail of water?

Mr. Hatch — One ounce to ten gallons of water if mixed with a cloth.

Mr. Kellogg — There is nothing that ever came before this society that is of so much importance as this curculio question. We have been fighting them for two years with London purple with the same modus operandi. Last year I used the pump with the nozzle Mr. Hatch is using and was disgusted with it. I think it is no good and I got a Boss nozzle.

Mr. Hatch — You can overcome all difficulty by straining the water.

Mr. Kellogg — The other is better.

Mr. Huntley — Are you agent for the Boss nozzle?

Mr. Kellogg — No, sir. I send to New York to get London purple and pay twenty cents a pound. Mr. Goff tells me it can be bought for six and a quarter cents a pound.

Prof. Goff — I do not think I said everybody could get it for six and a quarter cents. The largest house there wrote that they would sell us what we wanted at six and a quarter cents per pound by the keg.

A member — That is quite a margin between twenty cents and six and a quarter. Somebody must be making something.

Mr. Gould — Before the currant worm made its appearance you could sell a good many plants. Since its appearance the farmers will tell you it is too much trouble to kill the currant worm. I asked Mr. Nye how much he got for his currants. Eighten cents he said, and "I think I could get twenty-five if I asked it." The people won't use poisons to destroy the worms, not even if they could get them for a cent a pound. White hellebore can be used to kill off the worms and will do it if you don't have too many of them.

Mr. Thayer — There is a gentleman here says he has a remedy different from all these.

Mr. Paul — I made the discovery about ten days ago. The worms have been troubling my bushes more or less for the last four or five years, and about a week ago I told my man to go over to the house and get the large sprinkler we have,

I filled it with hot water right from the boiler. I took a stick about this size (indicating) and knocked the bushes, and the man following sprinkled them, and it killed them every time. You can hardly find a live worm there now. A very slight whack will cause them to drop on the ground. I have a tank that holds sixty-five gallons and it is hot from morning until night. All I have to say is, try it. If it happens to strike the bush a little it wont hurt it.

A member — I have several new bunches, newly planted this year, and I put three shovels full of leached ashes on, and when I left home a week ago the worms hadn't made their appearance. Since leaving home I have written them te sprinkle with sour milk.

Q.— Is that a remedy?

A.— Sure.

QUESTIONS FROM QUESTION BOX.

Is the apple scab due to conditions of temperature or to conditions of the soil?

Prof. Goff — My impression is it is due to the conditions of the temperature whatever the conditions of the soil. I think a moist atmosphere favors the development of the scab.

I notice that the ox-eyed daisy is the favorite flower of the exhibition here. Need we fear it becoming a pest with our system of farming?

Mr. Peffer — I don't think it will injure the farmers as long as it is used as a flower in the door yard and the women take care of it.

Mr. Hirschinger — The flower I see here is not the ox-eyed daisy and is not one to be feared.

Q.— With the present knowledge of varieties what two kinds of strawberries shall we plant?

Mr. Harris — Two-thirds Crescent and one of Captain Jack.

Mr. Kellogg: I could not get along with either one, or two varieties. If it was to be limited to only one variety I would take the Jessie. If you are in a region where the

Wilson is what it was twenty years ago, I would take the Wilson, but if the Wilson is rusting, as it is in most parts of the state I would take the Jessie for one, and second, the Warfield.

A member: What is the matter with the Wilson for general cultivation in the field at large? I will tell you what it is, it is the slip-shod way people have who don't care for anything. It is a good bearer for general use. There is not so much money in them perhaps, but I would like to see anyone who does not like the Wilson. I say the Wilson for general use all the time. I have sold them twenty-three years in Wisconsin. If I set out but two kinds of strawberries, I would want half of them Wilson.

Mr. Gale: The Crescent will do better than the Wilson on our soil. It is more profitable than the Wilson on sandy land. I prefer the Crescent to the Wilson.

Mr. Peffer: That is my experience.

Mr. Hatch: I should say the Crescent and Wilson.

Mr. Hirschinger: I would take the Wilson and Crescent.

Mr. Hanchett: The reason I don't say Wilson is because it don't pan out. I like it if it would. If I were to select two kinds I would select the Jessie and the Warfield, the Jessie to fertilize the Warfield. I think the Jessie don't stand the frost as well as the Warfield. I wish to read from the Chicago market report for the benefit of those raising strawberries for profit: "June 10th, strawberries listed at $1.50, Jessie at $2.25 in some cases." Fine Warfield varieties sold for $3.50 at La Crosse, I think that was a good recommend for the Warfield.

Mr. Fox — While in Chicago some one called my attention to this matter and I concluded the best way to settle it would be by going through the different stores where they sold them at wholesale, and I found all of the dealers in favor of the Warfield. I went to the trouble to inquire although I am not a strawberry raiser.

Mr. Huntley — If you can only raise one quart of Warfields where you can two of Wilson or Jessie, then which?

Mr. Kellogg — You can raise ten quarts of Warfield where you can't raise one of Wilson or Jessie.

Mr. Hanchet — Mr. Gould always buys Crescent of me. James Vick is second best. Captain Jack with me was utterly worthless, and the Manchester worse than worthless.

Mr. Smith — I have been growing the Wilson for nearly thirty years. I have tried a great many virieties, and if I were to select one I should not hesitate a minute to take the Wilson in preference to any that I have ever tried. My second choice would be Manchester; that or the Crescent.

Q.— Is the Manchester very prolific?

A.— I do not think it is as good as the Wilson.

Mr. Harris — The Crescent on sandy soil is good, on my clay soil it is good for nothing.

Mr. Hanchett — Mr. Gould raises to make money out of them. If there is a better kind to-day — better for shipping qualities, than the Wilson, I would like to know it. I put in half a crate of Jessie with a shipment of Wilson and asked the man I shipped them to, to write me of the conditien they arrived in. He wrote that the Jessie were mussed and not in good condition, while the Wilsons were all right.

Mr. Kellogg — That is the best I can do with the Wilson, and that is the best I can do with the Bubach (exhibiting clusters of each). The Warfield will ship and stand it days longer than the Wilson will. I am satisfied that the Warfield is the best shipping variety.

Mr. Smith — Has the Warfield been tried extensively enough and long enongh for the society to endorse it?

Mr. Kellogg — We have not endorsed it, we are simply giving individual experience and how it is doing in the different localities.

Mr. Gould — I do not raise strawberries to sell. I have the Wilson and Manchester. Perhaps I will learn enough so as to be able soon to raise all kinds.

Q.— Mrs. Sargent: I would like to ask what kind of soil Mr. Gould grows the Manchester in. We have clay soil and it won't grow at all.

Mr. Gould — I live across from Mrs. Sargent's and we

grow them with success. They will stand more neglect and stand more shipping than any other berry.

Mr. Hanchett — I have grown the Manchester for years. It is a good late berry, but with me it rusts. Two or three years ago the Manchester was the best berry I raised. Last year it entirely failed, this year I do not know whether it will or not.

Mr. Huntley — I move we drop this discussion and take a vote on it by ballot, writing the names of the two berries we prefer, and see what two berries receive the most votes.

Mr. Hirschinger — I move to make it five. Motion seconded.

Mr. Kellogg — The question calls for two for profit, for early and late varieties. We will get the five varieties if we answer the question.

Mr. Huntley — I think that two varieties are enough for any farmer.

Mr. Hanchett — I would like to know what the question would amount to provided you do not know what kind of soil the plants grow on?

Mr. Smith — That question can be answered afterwards if we want it. Strawberries will grow on all soils, but better on some than on others. We will vote * on Mr. Kellogg's amended motion.

Motion carried.

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* The following is the vote on strawberries:

Geo. J. Kellogg, of Janesville — For long shipment, Wilson and Warfield. For near market and early berries, Jessie and Bubach. For profit, May King and Crescent. For late berries, Mt. Vernon and Manchester.

T. G. Gould, Sparta — Wilson and Manchester.

J. S. Harris, La Crescent, Minn. — Captain Jack and Crescent.

L. J. Kellogg, Ripon — Best two strawberries, Jessie and Warfield.

J. M. Smith, Green Bay — Best two, Wilson and Manchester.

Mr. Hanchett, Sparta — Best two, Jessie and Warfield, with Manchester for late.

Wm. Fox, Baraboo — Warfield.

Z. K. Jewett, Sparta — James Vick.

A. I. Gale, Waukesha — Crescent and Wilson.

Geo. P. Peffer, Pewaukee — Crescent and Wilson.

Q.— What is the form, color, etc., of the model strawberry?

Mr. Kellogg — The Warfield.

Mr. Hatch — A good model to have in your mind is the kind you prefer and that does the best with you.

President — Let us omit the rest of this discussion until to-morrow morning. There are a great many people going into strawberry raising and would it not be profitable to discuss it to-morrow morning?

Question — Would it be profitable to cultivate blueberries for market or family use?

Mr. Gould — I would like to hear from some one who has cultivated them.

Mr. Peffer — I have tried to cultivate it sometimes but never have succeeded.

Mr. A. L. Hatch — It is a wild plant. I have tried it and so has my brother. No one has tried it successfully that I know of.

Mr. Kellogg — I have failed with it.

Mr. Gould — We have so many here in the woods that we do not ever try to cultivate them.

Mr. Jewett — I have had some experience in trying to cultivate blueberries, and I find it very hard to get them started. The root don't run into the ground, it runs on top right along. I have planted them a number of times but they have not lived.

Mr. Smith — What is the distinction between the huckleberry and blueberry?

A.— The blueberry has soft seeds and the huckleberry has hard. I have seen the finest berries growing where almost nothing else will grow.

Mr. Hoxie — I have seen the blueberry growing on very light sandy soil, and I have seen them growing and bearing good crops on very heavy clay soil.

Mr. Jewett — It has a growth like the wild blackberry.

A member — My experience is you will have to burn them over in order to have berries. We have to burn over a certain portion of the blueberry patch every year or so in order to have berries for the next year. It cleans the ground

of all the weeds, and the bushes sprout the next year and bear abundantly. We have them on a heavy clay soil and on a light sandy soil, but the nicest berries are on the north slopes where we keep the timber off.

Mr. Gould—The berries grow on the side of the hills and in the woods around Sparta. In the woods the soil is sandy and on the side of the hills is clay—heavy clay soil.

Question from box: What are the most desirable shrubs for a village lot of a quarter of an acre, if not planted too thick?

Mr. Hatch—I would like to say a good word for some native shrubs. The Black Alder belonging to the Holly family, is a hardy shrub and a beautiful plant, especially when the fruit is ripe. Then there is the Nine-Bark (*Spiraea prunifolia*), beautiful in its bloom and beautiful in its seed. Both of these shrubs are hardy native shrubs, with their fruit turning a beautiful crimson in the fall. Among other things, not perhaps in the line of shrubs, are the climbing vines or plants, such as the Boston Ivy. It gives character to the buildings in the eastern states and adds beauty and charms to the common brick walls. If we can make it do half as well as they grow it there, it would change the looks of a village like Sparta more than any other thing that could be planted. The Five-leaved Ivy (*Ampelopsis yuinyuefolia*), commonly called Virginia Creeper, is another native vine and will grow well almost anywhere.

Q.—Is that what they call the Japan Ivy?

Mr. Hatch—I believe there is a variety called the Japan Ivy.* The Five-leaved Ivy turns crimson in the fall and is very beautiful all the year.

Mr. Gould—The Barberry bush is very fine and Mrs. Boynton says her mother used to make pies of the fruit in old Vermont. The Snow Ball is a shrub.

Mr. Kellogg—The Wygela is another beautiful hardy flowering shrub. The Barberry is perfectly hardy, in fact you can't kill it if you try. I just dug up at a cost of $25 a row of Barberry bushes. I set them out as a hedge and

* Is *Ampelopsis Veitchii*.—SECRETARY.

finally had to dig them out. I got sick of them. They are good as an ornamental shrub, simply one or two bushes. The berries do not count, they are not worth picking. A single shrub is all right. I wish to speak of the Hydrangea grandiflora. It is a hardy shrub and is one of the finest shrubs you can plant.

Mr. Gould — I would like to hear if anybody ever set the Barberry bush as a hedge. I never heard of anybody except Kellogg.

Answer — In Milwaukee there are several who planted them.

Mr. Toole — There is one of our shrubs that is sadly neglected, that is the wild rose. I am sorry to say they have become neglected. They are in bloom now and are always much earlier than the most of our shrubs. We could not do better than to make a selection of some of the pretty wild roses which are beautiful not only while in bloom but the foliage is always good, and the berries in the fall are beautiful and last long into the winter. The Wahoo, an Indian name, I think we can grow with profit. If I were planting shrubbery I would consider whether the leaves were beautiful as well as the flowers. One great trouble in growing these shrubs, we try to make trees of them. I would say the same in regard to the Tartarian Honeysuckle, you will like it and will succeed in growing it if you do not try to make a tree of it.

Question from box — Can cherries be successfully grown in Wisconsin?

Mr. Kellogg — In this part of it, no.

Mr. Hatch — I had a small crop of cherries last year.

Mr. Gould — I think they can be raised but you have to fight the robins.

Mr. Hoxie — I have a crop once in every three or four years.

Mr. Hirschinger — I would like to say yes to that question. I have raised so many cherries that I did not know what to do with them. In fact raised them until we got so many robins we did not know what to do with those. Now we have to raise the cherries to feed the robins. We have

cherry trees and they have borne for the last five years, and they are heavily loaded this year.

Question from box—Have we any native plums worthy of cultivation?

Mr. Hatch—The Cheney and the Weaver plum. The Weaver is a native plum introduced from Iowa.

Mr. Harris—The Cheney is the largest and best plum I have seen. The De Soto is a good plum and blooms several days earlier than the Cheney.

Mr. Hatch—Have you the De Soto?

A.—I have been trying thirty years to raise plums. I have one tree, it is called a wild plum, and is just a small tree. It is close to the house, and the house injures it, but it is the nicest plum I ever tasted in my life. The fruit is light colored. I am trying to get sprouts from the roots, and have arranged with Mr. Hirschinger to take some of the sprouts and take care of them.

Mr. Kellogg—Are you acquainted with the De Soto?

A.—Yes, sir, this is not like the De Soto?

Convention adjourned until evening.

7:30 P. M.

Meeting called to order by the President, J. M. Smith.

Q.—Are any of the members of the Wisconsin Horticultural Society raising seedling apples?

Mr. Peffer—I have fourteen varieties worthy of notice.

Q.—Are any of them winter?

A.—Yes, sir; eight.

Mr. Springer—I am, a few.

Mr. Smith—Are they promising?

A.—We think so.

Mr. Smith—Are they perfectly hardy as far as you have gone with them?

A.—If any of you will come to my place I will show you the old trees and what we have done with them?

Mr. Smith—What is their ancestry?

A.—I cannot tell you.

Q.— Is the failure in apple growing in Wisconsin owing to the climate or neglect of the grower?

A.—Well, there are more apple trees which die from neglect and starvation than from hard winters.

A member — That is my experience exactly.

Mr. Jewett — I had an orchard in good condition and in two years the trees were all dead and they were cultivated.

Mr. Kellogg — You must understand Mr. Jewett, that you live in the hardest part of Wisconsin. There isn't one tree in a hundred that has a decent top in that climate.

Q.— I would like to ask Mr. Jewett if the trees failed after bearing a very abundant fruit crop?

Mr. Jewett — After a very hard winter.

Q.— Did they go into the winter exhausted?

Mr. Jewett — To some extent.

A member — Mr. President, my experience is, if too much shade will not kill them, the hard winters will.

Mr. Springer — You must have the sun. You cannot have a good tree unless it is on some elevated ground. My friend Barnes at Waupaca, has planted largely, but he has gone way down as low as valleys are. It is not the shade, however, that is killing the trees, but the hard winters.

Q.— Mr. Springer, how long have you been cultivating trees?

Mr. Springer — I brought trees to Waupaca in 1849, there are a few of those left now.

Q.— Have you tried the different hardy grafts recommended by the society year after year?

Mr. Springer — Yes, sir; on the two farms I have planted there is scarcely a tree left, on one of them there is but two trees left, on the other there is one-half dozen left.

Q.— Doesn't the Duchess do well with you?

Mr. Springer — That is about all we have.

Mr. Hirschinger — I want to say something on apples. Mr. Springer is an older man perhaps, than I am, and has planted a good many trees.

Mr. Springer — Two orchards, six hundred trees each.

Mr. Hirschinger — That is twelve hundred, he has planted those trees and was doing well a short time ago and has

brought as beautiful apples to our fairs as anyone has. I am a specialist and I claim that our trees are killed by the severe winters we have, and generally speaking I will say that the planting of varieties not adapted to our varied climatic changes has much to do with this. I have planted between three and four thousand trees. I have planted five hundred trees this year, and you will be surprised when I tell you that out of the five hundred trees there are only fifty-two that are not new Russian.

Mr. Gould — I want to ask Mr. Springer if he thinks he got his money back on the two farms he planted?

Mr. Springer — Yes, sir. I raised apples for several years.

Mr. Gould — There is a German near here who raises apples and says they can be raised all over the country.

Q.— Will it injure the value of blackberries to leave the sprouts and raise them for sets?

A.— Yes.

A.— What will you do with the sets that come up between the roots?

Mr. Kellogg — Cut them up as you would weeds.

Question — Is it necessary and does it pay to mulch small fruit each year?

A.— In my experience it does every time.

Music.

FASHION vs. FLOWERS.

By MRS. NEVILLE, GREEN BAY, WIS.

Happy is the man who loves flowers! Happy, even if it be a love adulterated with vanity and strife; for love of gain, of fashion, of notoriety, often lurk in the hearts of even lovers of flowers. At different times and in different ages, some special family of the great family of flowers, has through some freak of fortune become famous. Some times this popularity is confined only to the fashionable world, and a limited locality, as witness the rage for the old-fashioned larkspur of our grandmother's gardens which held sway at one of our fashionable watering places a season or two ago. The flower had neither fragrance, sentiment, nor beauty to recommend it,

yet the city belles would wear no other. During one year the florists of our large cities could not supply the demand for the Jaqueminot rose, and the price asked for a single blossom, in some places, was *one dollar and twenty-five cents*, while to-day it withers and droops from the stems, and the La France and American Beauty hold their sway.

Flowers, in some spheres of life, are prized only according to their market value; that is, at the price Fashion has put on them, for Fashion invades even the realm where "God's sense of beauty speaks to man," and putting her stamp on this flower or that it becomes the rage, and fools rush in pursuit of it to the very ends of the earth.

Fashion is an *ignis fatuus*, cheating men into strange and delusive fancies, which are gone before they can be grasped, only to be replaced by others as strange and elusive. Mankind is bound hand and heart to this tyrant; she bewitches, she sings like the siren of old, and men are held captive by invisible chains. She cheats into the pursuit of these things which, seen through the light and glamour which she casts, seem like the golden apples of Hesperides, but when grasped, crumble into ashes.

We see everything through fashion's eyes, and old and established lines of beauty are discarded if she so decrees. Our men are attired in knee breeches and waist-coats of brocade and velvet, or in broadcloth and linen as the edict is sent forth; our women appear in modest attire of simply clinging draperies, or these are distended by bands of steel until the dress becomes all, and the woman nothing. We look at all our possessions through the light of fashion's eyes; for example, we have perhaps kept through many years some old-fashioned pieces of china; to our artistic sense, their garish colors and grotesque figures are ugly, but they are dear to us through ages of associations, and so we keep them. There is a murmur in the air and fashion utters the one word "Ceramic." For devotees whirl madly after, and on the van of the latest craze our plates are brought from oblivion; they are hung on drawing-room walls, a bit of silk draped about or behind them, and we are told by Fashion that it is quite "the thing," that they "compose" well. The plates are no more beautiful than they were before, but we see them with different eyes; the glamour of Fashion has bewitched us.

The tulip, through Fashion's fancy, in the year 1634 and for three or four years after, attained a value in Holland which set the staid phlegmatic Hollanders beside themselves. The tulip was introduced into Europe from Constantinople about the year 1559. Later, when it became known to the Dutch merchants and nobility of Vienna, it became a most important branch of trade. As in the South Sea bubble, all other business was neglected for it, and speculation ran rife to an astonishing degree. Men sold bulbs which they did not possess, on condition of delivering them to the buyers within a stipulated time, and of some varieties far more bulbs were sold than actually existed. The ownership of a sort was often divided into shares, and companies were organized for the control of it. To

such an extent was this traffic carried that a system of stock-jobbing was introduced and tulips which were bought and sold at more than their weight in gold, were nominally purchased without changing hands at all. A kind of board of trade held its meetings at stated times during these years, in taverns where these curious bargains were made; notaries and clerks were always in attendance and at the conclusion of the sales a banquet was served by the inn-keeper, to his own profit and the good cheer of the guests.

We find it on record to day that at one of these public sales, for a single root of the Viceroy, there was paid by a merchant of Amsterdam: two hogsheads of wine, four tuns of beer, two lasts of wheat, four lasts of rye, two tuns of butter, one thousand pounds of cheese, four fat oxen, eight fat swine, twelve fat sheep, a complete bed, a suit of clothes, and a silver firkin valued at 2,500 florins — all these for one single tulip root. The Simpor Augustus was a plant in great favor in those excited times; one gentleman received £3,000 for three roots which he sold, and an offer of £1,500 a year for the use of one plant for seven years, with the contract that it should be returned at the end of that time in as good condition as received, the increase alone being retained during the period. Prices increased until the bubble would bear no further inflation, it suddenly burst and prices declined in a day from £500 to £5. Obligations were violated and appeals made to the magistrates, but in vain. The state at last interposed and issued an order invalidating all contracts which put an end to the stock-jobbing, and the Tulipomania was dead, but not until it had involved many of the people in utter financial ruin. Looking back across the distance of more than two centuries, at the history of the Tulipomania, which well merited the name given it, we find it impossible to interpret this wild craze, arising among a people of such known deliberation, thoughtfulness and caution as the Dutch; a people which had been led only a century before by William, "the Silent." It is nevertheless a fact that those engaged in this, the strangest commerce in which Europe has ever been engaged, were deprived of both sense and judgment. "Whom the Gods would destroy they first make mad."

During these years of speculation the tulip was prized only at its commercial value, it was not until nearly a century later that it found its place among florist's flowers and it was then that the real flower trade of Holland reached its height. Fashion in raising this flower to its great popularity would seem to have destroyed whatever of sentiment might have clung to it, and we can feel only pride in its stately beauty which makes spring glorious with rich coloring. In other lands, however, where the tulip is a native of the wildwood untouched by artifice, it is an emblem of poetical beauty inspiring sentiments of love and purity. In Persia, the young lover who wishes to make known to the mistress of his heart his feelings of love, sends to her a tulip, presumably the flame-colored one with black anthers, thus,

according to Chardin, he gives her to understand that "he is all on fire with her beauty, and his heart is burned to a coal."

The tulip grows in great profusion throughout Syria, and an added interest is given it in the thought advanced by many, that it is the lily mentioned in the sermon on the Mount: Consider the lilies of the field, how they grow, they toil not, neither to they spin! Yet, I say unto you, that Solomon in all his glory was not arrayed like one of these!

But the tulip is not the only flower which Fashion, by her favor, has raised to great eminence; the Orchidomania of to-day is but a mild modern echo of the Tulipomania of two hundred and fifty years ago.

The orchid has been only known in England since about 1815, and then only few plants were cultivated; it was not until many years later that it attained any degree of eminence. The wonderful epidendrum or "air plants," as orchids were generally termed at first, were much admired wherever they blossomed, but "it was not until the duke of Devonshire saw the butterfly orchid from Demerara in flower at a London exhibition, that the orchid culture commenced in earnest among amatuers. The duke was so delighted with the golden blossom, with its fluttering wings and long antennæ like petals, that he set about forming a collection." He dispatched explorers to the East as collectors, and many rare species were thus introduced into England.

Fashion, Midas-like, turns into gold everything which she touches, and from this impetus given to the orchid trade by so noted a person as the duke of Devonshire, prices increased until to-day $1,000 is no uncommon price for a single plant. Although there has never been created an "exchange" for the sale of orchids, where fortunes are made and lost in a day; or stock companies formed for the ownership of a single plant, still the large prices which have been paid, give excuse for the coinage of the word Orchidomania. At one of the orchid marts in London, it is no uncommon thing for a salesman to dispose of orchids valued at from $10,000 to $15,000 in one day. But it is not alone with Englishmen that these high prices have prevailed. Pres. Smith, of this society, tells me that he saw in Boston last season, a plant in bloom for which $4,000 had but recently been given, it was at that time offered for sale at $2,000, probably because less of a novelty than at first. A writer in one of the late papers says of the Cypripadinms which are just now the special fad of orchid collectors: "An insignificant and often truly hideous specimen, known to be unique, brings an extravagant price. Think of a tiny monstrosity no bigger than a bunch of soup herbs, selling at auction for one hundred and fifty guineas! to an American, too!" But Americans are enthusiastic collectors, and several of the rarest specimens known have found their home on this side of the Atlantic.

An orchid house is a curiously interesting place to visit from the fact that so many of these plants are epiphytes, or air plants. Some of them, according to the eccentricities of the family, refusing to grow unless up-

side down, and have never been successfully cultivated except with their heels in the air; other varieties are seen fastened upon bits of bark or tied to cross sections of small trees with all their domestic economy in view, the long straggling white roots reaching down into the air below to gather nutriment and moisture from it.

These plants, or the rarest specimens, are imported from India and South America, but a number are indigeneous to the United States. Sometimes only a few plants of a single variety will be found within a radius of many miles. There is a beautiful pink orchid which grows in the woods not far from Green Bay; the blossom is of a delicate pink, mottled with darker spots, in shape resembling the Indian moccasin or lady slipper, which, by the way, belongs to the family of Orchids. In England they are more common than here. Ophelia made her garland of cornflowers, daisies, nettles and long purples, the long purple being a species of the Orchid.

These flowers, so rare and beautiful, through the extravagant prices demanded for them, are placed within the reach of only the wealthy, who wear them or present them to friends in boquets costing from $50 to $100 rather as an exponent of their wealth and fashion than for any sentiment attaching to them. But in their native homes the orchid seems to have to an exceptional degree the sentiment which we feel for the violet, lily-of-the-valley, or the rose, this power of "linking themselves to the joy and sorrow of life," which indicates love of flowers in distinction to the following of Fashion. Scarcely a feast, or fast, or act of devotion of the fanciful Mexican's but has its special orchid as its emblem and appropriate offerings. Christenings, marriages and deaths are all symbolized by some variety of these wonderful and beautitul flowers.

Flowers have been the inspiration of the poet's song for centuries, and the symbolism of flowers is an old poetic theme. Chaucer, who loved the flowers, "such that men called daisies in our time," called it "the daisie or else the eye of day." Longfellow names flowers "stars of day," and Margaret Fuller wrote: "The stars whisper all their secrets to the flowers and if men knew how to look around them, they need not look above." We are told that these poetic fancies have been justified by the scientific discovery of a coincident between the relative distances of leaves from each other on their stems and the distance of the plants from each other, suggesting that the starry heavens may be found after all, as the Scandinavian myth represents — a bed flower.

It has never been the florists' flower of rare beauty, which has been the poet's theme, but the dandelion; the violet, the familiar roadside flowers. With what a joyful sound does Shakespeare sing:

"I know a bank where on the wild thyme blows,
Where oxlips and the nodding violet grows.

But it was

"Where daisies feed, and violets blue
And lady smocks all silver white,
And cuckco buds of yellow hue,
Do paint the meadows with delight."

That we can picture him wandering in the fields of Stratford, where the daisies lie in the grass as close as stars in the milky way.

It is the object of art to create in man the love of nature. Every picture has this end in view. But those who love nature in the natural way, need no outside stimulus. Every flower of spring from the first appearance to the full flower and perfect fruitage, breathes to him a poem, spoken to his heart alone.

Saintine, in the exquisite story Picceila, has reveaied what a single plant may become to man, even though he be dead to every impulse of love and sympathy, if he opens his heart to its beauty and teaching.

He shows how the sweetness and light of perfect trust and love, may speak through its life into the inner soul, teaching supreme love.

Blessed is the man who loves flowers as the prisoner Charney loved Picciola. But he needs no blessing of ours, he is blessed of God.

"If we could open and unbind our eyes
We all like Moses should espy
E'en in a bush the radiant Deity.

SOME FACTS IN THE EXPERIENCE OF AN EXPERIMENTER.

By A. L. HATCH, ITHACA.

My experience is that fruit growing can be made successful in southern Wisconsin. Also, that on good sites it is as sure and can be as pleasantly followed as almost any other branch of farming; indeed, I believe it less laborious and more refining in its influences than the incessant drudgery of stock and dairy farming.

My observation is that every farm capable of growing corn can grow some kind of fruit. Small fruit culture can be often made a profitable and very desirable adjunct to dairy farming, and there is room for professional fruit growers in every town. Wherever farm laborers are not kept continuously and profitably employed, wherever good home markets are found, and where the farmer's own table is unsupplied, a good field for fruit growing is found. Where there are children whose busy fingers and restless brains must find something to entertain, guide and influence, there fruit culture should become a feature of home-life. Not, however, as an

additional care and burden to farm work that is now too often slave like, and especially depressing to boys and girls, but it should be one of the home attractions, cheering and helpful, in the kitchen, on the table, or going to market — pleasant wherever used.

The time has gone by when it is popular to say "you can't grow fruit in Wisconsin." Now it is more in accord with the times to discuss ways and means, and herein some of the value lies of such meetings as this. To begin then on the practical features of fruit culture, let us consider

TRANSPLANTING.

Fruit gardens and orchards are grown from transplanted vines, shrubs and trees and not from seeds. These vines and plants differ somewhat in their character and each kind requires treatment accordingly. Strawberry plants are grown from runners and should be mature plants of the previous season's growth. This maturity is not generally obtained until fall, and as it is very desirable to use only well ripened, vigorous plants it necessarily follows that transplanting in August and September is more or less hazardous, because plants are then not mature as a rule. Old plants with dark roots and hard brown trunk-like bodies should not be used when young plants with white, vigorous roots can be had.

Raspberry plants of the red kinds and blackberry plants are similar in style of growth — both suckering or growing from root sprouts. The blackberry is often grown from root cuttings and makes excellent plants but usually red raspberry and blackberry plants are taken from the sprouts thrown up around old plants. These are usually grown from underground roots running at right angles to the stem of the plant. These plants should be dug so as to preserve some of this lower root, for it is far better furnished with rootlets than the upright stem. Only so much of the top should be saved as is necessary to handle the plant.

Black raspberry plants are quite different. These are termed bow cane or tip varieties. The new plant is grown from the tip of bush that has grown the same season from the ground. They can not be grown early in the season for that reason and are not mature till after fall frosts.

Grape vines are grown from three bud cuttings usually. Two of these buds grow roots and one the top. It is desirable that both of these root crowns or whorls should be strong and abundant as they are usually six inches or more apart, and are desirable as giving both deep roots and surface roots.

Apple trees are now mostly grown on roots of seeelings grafted just below the surface of the ground. Those two and three years old will generally give most satisfaction in planting, but there is no objection to a four-year-old if carefully handled.

Currants and gooseberries are grown from cuttings and therefore most easily handled and transplanted, as the roots and tops are of the same kind and the crown of the plant less definite.

Now with these different plants let us proceed to the actual operation of transplanting. One rule to apply to all plants is this — get the roots in contact with as much moist well prepared soil as possible, so the plant can draw moisture promptly and continuously from the earth. In case of extreme dry weather it is usual to dip the roots in a puddle made of clay and water of the consistency of thick cream. This is very useful in case of grapes, apple trees and shrubbery, but often is injurious to fine rooted plants. In such case the fine roots are often massed together in a lump; better spread them out at planting, fill in with fine earth and then apply a little water to each plant.

DEPTH OF PLANTING

must be according to the kind of plant set. The crown of a strawberry plant should be set just at the surface, no more, no less. Blackberry and red raspberry plants have no definite crown, but should be planted as deep as will permit the buds to grow out of the ground, *i. e.*, the buds occuring first above the roots. These buds are to grow the fruiting bushes that live over one year, bear fruit and then die when they should be immediately removed. This deep planting of fruiting bushes is very desirable as giving support to the tender new bush which might otherwise be blown down and broken while young. Still it is not desirable to carry this to extremes and hill up or bank the earth about the plants, nor is it safe to plant so deeply as to prevent the buds pushing through. In the case of black raspberry plants, it is usual to leave a portion of the old bush upon the plant to serve as a handle to move them by. This is not to be mistaken for the top of the bush. It may grow some, but you cannot grow new bushes from it or build the new plant you desire, upon such a foundation. If you make this mistake you will probably bury the crown of the plant too deeply, and smother the buds found in the center of the mass of roots. Look carefully for these buds and be sure to fix them so they can grow through the soil to sunlight.

In planting apple trees especially Duchess and Tetofsky, it is best to plant them deep enough to prevent sprouts growing from the roots below the place where grafted. Two or three inches deeper than when in the nurseries is probably sufficient, always presuming the soil among the roots is right.

AVOID VERY RICH SOILS

for strawberries, apples and grapes. Currants, blackberries, raspberries and wild plums may do far better on rich soil, especially with good culture, but more loss is occasioned by too rich soils in strawberry growing than by too poor. Of course if you have only rich soils you may do well with some kinds, and my experience would suggest the Wilson as the very best for such a place. Select light mellow soil and give good culture rather than take heavy soils highly manured, for you do not want a perfect mass of vines that will grow runners to climb over one another before the berries can fairly get out of bloom.

STIRRING THE SOIL

is now considered to be the best possible mulching, and in case of strawberries only needs to be supplemented with something to keep them clean — that is, to keep the fruit free from the dirt washed on them by showers. Leaving the winter protection of straw on the beds and allowing the plants to grow through it is recommended by some. But it is not always satisfactory and in many cases very injurious. If the soil can be well stirred among the plants in the spring before fruiting and then a clean mulching applied where needed just before fruiting, the best results would follow. The requisites for this mulching are: 1st, cleanliness; 2d, no foul seeds; 3d, fineness so it will readily mix with the soil below and not retard evaporation as long as straw would. As seeming to be best and most available I would suggest planer shavings and turner's chips, or straw and corn stalks cut very fine.

TWO GOOD TOOLS

for working among strawberries as well as in the garden, are the triangular hoe and the bayonet hoe. The triangular hoe is made from the common field hoe by cutting off the round upper corners on a line from the shank to the lower corners on the cutting edge, leaving the edge the same as at first. The bayonet hoe is simply a narrow blade or point on a hoe handle for loosening among plants, but not for cutting weeds.

GROW YOUR OWN PLANTS,

is advice I would give all who can do so. Strawberry plants can be moved with earth adhering if obtained from your own grounds, and give a much better start than is possible with plants shipped far without soil adhering. You can move them by horse power, earth and all, and get along more rapidly than you would suppose possible, if you wish to plant by the acre.

Of course you will want more or less of new sorts for trial that must come from the nurserymen, wherever offered, but they can hardly supply you plants for large fields worth as much as those you can grow at home.

WINTER PROTECTION

is now regarded as one of the essentials of grape and small fruit culture in Wisconsin. It happens in our experience that the easiest way is the best for this purpose. Blackberries, raspberries and grapes are bent to the earth, a hill at a time, and covered with fine earth, so all spaces are filled and no air holes or hollow places are left around the bush or vine. This solid filling of earth is the keynote of success in winter protection. I do not mean that the earth should be pounded hard and solid as a road bed, but that the earth shall be fine and mellow enough to fill the air spaces. Of course we regard this as a principle in protecting all shrubbery, such as roses as well as fruit plants. This earth protection is usually sufficient for good sites and ordinary winters, but in case of tender roses or shrubs, or

of severe cold without snowfall, an outside protection of coarse manure or straw should be added as soon as the soil has frozen over the bushes.

For winter protection of strawberries, corn stalks, evergreen boughs and even oak brush with leaves on can be used with the probability that it will answer the purpose better than straw, and at the same time scatter no seeds of weeds and grass over the beds. If we give winter protection to our fruiting shrubs it is desirable that we know something about

TRAINING PLANTS AND VINES

so we can handle them without danger of breaking, and so we can protect easily and get them up again in the spring, safely and surely. It is now recommended to pinch off the ends of the new growth of blackberry and raspberry bushes to cause them to branch, and thus make a tree-shaped or stocky bush, instead of a single cane or whip-like stalk. This is done at a height of one to two feet. In the case of red raspberries and black raspberries these branches are shortened in before burying in the fall. The slim ends of all branches are cut off so the bush is a trunk with arms one to three feet long, according to the strength of the bush and branch. The object is to cut away such parts of the bush as will bear only small or defective berries and put the strength into the stoutest wood that will ripen its fruit more nearly at once.

In the case of the blackberry we must make a wide departure. Instead of cutting away the ends of the branches we must save the whole limb. Our aim in this case is to develop and save all the terminal wood we can because it is the last six inches that will bear the bulk of the crop.

In training the grape we have a quite different subject to deal with. Two or three buds are saved in the fall of each branch of the current year's growth. The rest is cut away, so we have stubs of the vine of new growth on the old wood. This old wood ought to be of some length to secure flexibility for handling and to get the fruit away from the ground. This length of course must have been attained while the vine was being established. Summer pruning is usually quite unpracticable and not desirable, except removing sprouts at the roots and where the buds grow double, when the weakest should be removed.

I have grouped together some of the salient points in small fruit management, to make them clear by comparison and contrast. They include some of the facts in my experience as an experimenter, which I consider most essential to lead to success.

It is usual at the close of papers delivered before our society, to allow all who wish to discuss the subjects suggested or brought out, and it is the special delight of the older members to lampoon each other from right to left. Of course they are good natured about it, but I don't want them to usurp the ladies' privilege of having the last word, and hope that the Monroe county people present will consider it their opportunity as well as ours.

I think several of our society have now their harpoons ready for my hor-

ticultural anatomy. Being quite diffident, and not wishing to do any more blushing, I want to forestall them a little and set up some questions as a temporary defense, so I can make a good retreat.

We need more light on winter protection of small fruits. How shall we protect? What material use? What causes of failure must we avoid both in vermin and weather, cold and heat? How shall we bring on plants, shrubs and vines out of winter quarters? How early uncover? How late can we keep them covered? What effect on the starting of plants?

What kind shall we plant? How shall we train shrubs and to make them most easily protected? How keep the fruit clean? What is best on sandy soils? On rich soils? On poor soils? What can we do in grapes, blackberries and dewberries?

DISCUSSION.

Q.—I would like to know what kind of mulch would be best to use in order to protect our fruit during the winter, strawberries and raspberries? I have understood it was best to cover raspberries with dirt and that would protect them sufficiently.

A.—Mr. Hatch—For strawberries I find nothing better than straw, provided it is not filled with seeds. It will protect them perfectly. Just enough to cover the leaves. Marsh hay is just as good. For raspberries, suppose the rows run north and south and you want to turn them toward the north, I have a man go along with a hoe and dig the earth a little from the north side of the plant. Another man follows with a fork and bends the plant towards the north. It disturbs the roots a little but not to damage them, he lays it down and another man with a shovel digs some earth from between the rows and throws it on the tops to hold them. The fourth man follows with a shovel and finishes covering them, hiding them for not over two inches. I never have failed to have a good crop when I covered, and never had a satisfactory crop a year I neglected to cover. They may not die when not covered up.

Mr. Thayer—I think you have omitted one essential point, the laying down of blackberry bushes. In any ordinary way of laying down they will be broken. The only way that can be prevented is to put the foot against the

bush and push strongly with the foot and at the same time cover with the fork.

Mr. Kellogg — In talking of using the hoe, that would be the last instrument I would use in preparing the ground for the blackberry. I want a six-tined fork and then you can put down with the foot if you have a good sized foot like friend Peffer's for instance.

A member — If you commence to put the dirt on the top end of the plant you will kink it. The spreading fork instead of a spade and shovel is better.

Mr. Hatch — I never do the same way the rest of you do. The man who bends down the plants has a four-tined fork. He places the four-tined fork near to the roots, takes hold of the bush with his left hand and brings it down gradually. The round pointed shovel is the best to use. Another tool I use in getting them out in the spring is the potato hoe. Have two men to do that, one to rake off the dirt and the other to follow with the fork to start up the bush.

Q.— I want to know how deep we can safely cover. How deep and when to cover, and when to get them out in the spring.

Mr. Hatch — Raise your blackberries the next day after you get your corn planted.

Q.— How long will it do to leave them uncovered in the spring. We have had a bad season this spring and I would like to know how long we can leave them, in the spring.

Mr. Smith — I left mine last spring until the buds were beginning to come, then I raised them up, the buds were swollen until ready to burst.

Mr. Hatch — If you had had frosty weather wouldn't they have been killed?

Mr. Smith — I left them to avoid that.

Mr. Converse — It seems to me as if there is a cheaper method of covering. We simply bend the bushes over and remove no dirt whatever, but merely cover the tops with marsh hay, and find they come out in better shape than when covered with dirt. In one plantation covered in this way we only lost ten per cent. In the rows we covered wholly with dirt, there was quite a severe loss. Bringing

over and covering the tops with dirt is generally sufficient, but when not covered with dirt, but with mulching, they come out in better shape.

Poem by Miss Carrie Davis, of Baraboo, read by Mrs. V. H. Campbell.

LEARNED FROM THE BOOK OF NATURE.

BY MISS CARRIE DAVIS, OF BARABOO.

[Written for the Wisconsin State Horticultural Society.]

O June, fair time of promise and of bud,
Fair dawning of the year's rich summer-hood,
With roses clustering you lace the hedge,
With roses border all the high way's edge,
With piping birds you brim the robin's nest,
With sweetest music fill his crimson breast.

Your suns sift gold-dust on the fields of grain,
The orchard's luscious yield with crimson stain,
And kiss until they blush a burning red,
The round cheeked berries on their leafy bed,
And with the clover's tufts of purple tie
The grassy coverlids, o'er earth that lie.

Your languid wind comes from a farther south,
Drowsy with sipping at its blossom mouth,
And falls asleep upon a rose's breast.
Perturbing all its leaves with sweet unrest,
And in each limpid lake, and purling stream,
The golden fleece in little heaps does gleam.

With summer's loveliness each heart is stirred,
And yet, it seems but yesterday, I heard
Spring's first red robin singing one chill morn,
In the grey semi-light ere day is born.
Night's over-robe, far in the eastern skies
Unclasped and folded back, showed to mine eyes
Fine underlacing wrought of threads of gold,
And blush pink linings edged with purple fold.
Slowly, the moon, a silver-bright cano,
Bound for a farther night, sailed out of view.

A long, brown line, far off, I saw the woods
That showed no faintest tinge of bursting buds.
In shadowed places, where the sun had failed,
Draggled and rent, the skirts of winter trailed.
Bare was the bough where sang spring's herald-bird,
And bleak the wind the barren bough that stirred;
No mate made answer in the chilly hush,
Nor other red-breast flashed from tree or brush
Or floats in lily boats on ruffled lakes,
Or on the tree-harps gentle music makes.

Your fleecy clouds melt quickly into rain,
As youthful hearts in tear drops melt their pain,
And leave your heavens tangled in a net
Of lacing streaks of rose and violet,
Which weave, with other, ever-shifting dyes,
An arch triumphal in your sapphire skies.

Your morns their orient chamber leave, and come,
As fair as new-made bride from maiden home,
With rosy blushes neath their misty veil,
All pearled with dew along its fleecy trail,
Songs hymeneal thrilling all the air,
And brimful cups of fragrance everywhere.

Your nights are opulent with silent charms,
Hushed as a life asleep within love's arms;
Your pale moon-shepherdess her star-flock keeps
All scattered wide upon the azure steeps,
Yet still the robin's notes rang clear and free,
Giving to earth the blessed prophecy
Of blossom-heavy boughs, and warmer sun,
And grassy fields with early flowers o'errun,
And downy nests, in leafy shadows built,
And fragrance from brimming flower-cups spilt.
Mateless, and in the morning's dusk and chill,
Still was his song with faith and hope a-thrill,
As all his soul in music flowed, to bring
The dreary earth the promises of spring,
Knowing, full well, that, in the season due,
Nature earth's summer-glory would renew.

O doubting heart, your voice with nature's raise,
And change your sighing to a song of praise!
What tho' you sit in shadow and alone,

What tho' you are so used to plaint and moan,
Shall one small bird a deathless soul outdo,
And render unto God more faith than you?

Take courage, doubting heart, and breathe a wide!
Let God come in upon the summer tide.
As flowers leave the process of their bloom
To warmth of light and cool of midnight gloom,
To clouds that with the copious showers o'errun,
To evening's gentle dew and morning's sun,
So leave our soul's perfecting to the years,
To fair but transient hopes, to idle fears,
To shifting light and shade of joy and woe,
To rain of tears from griefs that come and go.
For, all that comes to us, of good or ill,
Shall, in the soul, new growth inspire still;
And all that slips from out our clinging hand
Gives place to higher growth, to needs more grand.
While hearts are aching for the love that's lost
Behold! a nobler love their path has crossed;
Grieving for hope that's dead, for joy that's done,
Behold! new hope has bloomed, new joy begun.

What mysteries are unto us revealed,
Should teach us faith in God for all concealed:
Faith that decay holds still the germ of life;
That blessed peace walks in the steps of strife,
And softly sings a heavenly refrain
To every song of mourning and of pain;
That joy's smile on lips of sorrow lies,
As oft as sorrow's tears blind joy's eyes;
That, those, who, toilsomely, life's task-round keep,
Are those who feel the restfulness of sleep;
That sin bears in its self-resultant woe,
Though uncondemned of *man* the sinner go;
That virtue holds its own sweet blessedness,
The world can render neither more nor less.
For, every impulse of the shifting will
Shall have its consequence in good, or ill,
And each effect reacts upon its cause,
Each subject is to self-enacting laws.

Seek not to fathom God with finite mind;
The spirit only can the spirit find.
Threading the labyrinths doubt e'er has trod,

The mortal questions, if there be a God,
Reasons upon life's inequalities,
The discords from the teeming world that rise,
The virtue toiling without just reward,
While vice heaps high its shining, golden hoard.
How poor, how poor, this little, doubting mind!
How dull these ears! These eyes how blind, how blind?

O you, denying, what, from earth to sky
All nature's myriad voices glorify,
Be still, and let the soul within you speak,—
The soul, a part of Him that soul would seek.
Where mind hears discords, soul hears harmonies,
And knows grand strains 'neath sorrow's touch arise;
Where mind beholds rank inequalities,
The soul, well-balanced compensation sees;
Where mind reverts to destiny, to chance,
Affirming we are things of circumstance,
The God-taught soul cries out with holy awe:
Behold the working of God's mighty law,
Self-executing and embracing all,
For which is none too great and none too small.
For, every cause conceived in wrong shall bring
Effect in just proportioned suffering,
Likewise, each impulse, high, unselfish, pure,
Shall in the sure result of good endure.

Who gives, with love, from out his treasure's store,
For every gift shall be enriched the more,
As earth, to him who sows the tiny seed,
Returns the gift, increased unto his need.
But he who keeps unto himself, alone,
What he has gained, at last, shall nothing own,—
For he who sows not, shall he think to reap?
Who gives not, hope, himself life's gifts to keep?

Nor think to measure by the man you see
The share of joy or woe that his may be.
No man another's heart may analyze,
Nor read its secrets with Miese dust-sealed eyes.
For, every gain unto the world revealed,
Has loss proportionate, perhaps concealed;
Each known advantage over others won,
Is balanced by some trouble, known to none.

Who stands, to-day, beside the grave, new made,
Where cypress trees cast low their mournful shade,
And thinks the spot too sad, too lone, too drear,
For aught beside a wail, a sob, a tear,
To-morrow finds upon the lowly bed
A flower, as 't were blossomed from the dead,
As tho', for every form of life that dies,
Life in some other form shall e'er arise,
And from the clay, death to the sense denies,
The Principle of Life springs blossom-wise.

The tears we weep above the lifeless clay
Love gathers in a blessed rosary,
And sorrow teaches us to tell it o'er,—
For every prayer some faith, unknown before.
For, who can stand before death's mystery,
His soul one with the spirit passed away,
And doubt that spirit's immortality?
His blest reunion with it, by and by?
Our power to love and suffer justifies
This faith in what is veiled from mortal eyes.

We sorrow for the friends that we have lost,
While from our lives are slighted friendship's test;
We break our hearts for loves that were but feigned,
And pass unseen the loves we might have gained.

We cry aloud: "Life's sweetest thing is dead!"
And wander through the past with drooping head,
Like black-clad mourners flitting to and fro,
Where marble tombstones ghostly shadows throw,
While Life immortal and eternal Good
Walks with us through death's awful solitude,—
The Spirit from our tear-blind eyes concealed
That weep the clay-form from our senses sealed.

We cry: "What we have not, that is life's best!"
And while the good that might have been possessed
From life fades quickly like a falling star,
We toil and reach for something set a far.

We weep above our past's entombed dead,
We crush our present good 'neath careless tread,
While our desires outstrip our destinies,
And life's deep meaning strikes on sightless eyes.

Ask not yourself what death is, neither ask
What waits your soul beyond this life's last task.
'Tis yours to live, and yours, when death draws nigh,
As nobly you have lived to nobly die.
This death is but a pang, then closéd eyes,
An after-wakening to grand mysteries.
This life is but a solemn space of time,
In which we are to build the stairs to climb
To higher plane, and every good in love
Or duty done, a golden step shall prove,
By which the soul above itself may mount.
Live for your fellowman, and never count
The cost of any pure unselfish deed,
For each will render less all mortal-need.
The humblest life a mighty power will be,
As it is lived or wrong, or righteously,
To lower from attainable, high good
All life, or lift it toward the altitude
Of charity, and faith, and godliness.
One wandering life set right will all life bless.
Remember that your every act will be
A motive power impelling all humanity
Or back, or forward, so, do right alway.
Strive to grow better each succeeding day,
To have the lovely charity that thinks
No evil, fails not ever, but still links
Into a grand and common brotherhood
All men, and loves all men, and does all good,
For love's sake, not for selfish ends, and dries
The tears of grief, and hushes sorrow's cries
And blesses everything it comes anigh —
Such creed lived up to, teaches how to die.

BARABOO, Wis., June 17, 1889.

Music.

Meeting adjourned until 9:30, June 20th, 1889.

9:30 A. M., JUNE 20TH, 1889.

Question from question box: Is there any way to protect the small fruit from frosts, and is it practicable to protect strawberries from the late spring frosts?

Prof. Goff — My brothers and I made an experiment covering the berries with straw we raked between the rows.

When there came a time we believed we were going to have a hard frost we went over the rows and raked the straw between the rows on to the rows. We saved at least *that* crop of berries we would otherwise have lost. It was surprising how cheap it was and how little time it took. We commenced about 5 o'clock and worked until tea time three days, and it was not expensive.

Q.—I would like to ask Prof. Goff how hard a frost it was?

Prof. Goff—It was a very severe frost.

Mr. Thayer—I would like to inquire if any one has experience building smudges and burning coal tar?

Mr. Hoxie—A good many farmers protect their tobacco by smudges. In order to do it properly they have their straw and grass piles located on different sides of the field.

A member—The cranberry men protect their cranberries by burning smudges.

Mr. Harris—A few days ago we had a frost (the 23rd of May), that killed the crops of strawberries in the region of La Crosse, apples, plums, etc. I saved the whole of my crop. I had a team hauling straw all day and sat up all night to burn the straw. We commenced at midnight. The leaves were all frost and about an hour afterwards there was a dripping as if rain was falling. I did not lose a dollar's worth of grapes and not a quart of strawberries, but I did not get any sleep.

Mr. Hatch—You would better write to Washington, D. C., requesting them to send you Lt. Allen's pamphlet to assist you in "Foretelling Frosts."

Q.—What is the parentage of the Warfield strawberry? Does the size of the Warfield hold out well during the season?

Mr. Kellogg—It holds out in picking, but I no not know its parentage.

Mr. Hatch—It certainly shows Crescent blood. There are those who state that it does contain Crescent elements. It is very important we should know.

Mr. Kellogg—If it is anything like the Sharpless we don't want it.

Q.— What is the most desirable site to locate an apple orchard?

Mr. Hatch — On a ridge on the highest ground. In the northern part of this township you have a strip of woodland, oak belt, where the lower soil is limestone.

Mr. Harris — What out-look, north, south, east or west?

Mr. Hatch — I do not care what the exposure is.

Mr. Toole — In Sauk county northern exposures are better than southeast exposures.

Mr. Phillips — I would go farther south in Wisconsin. If I located here I would go on the limestone ridge.

Mr. Hatch — I have made a success of it on that kind of ground and wont go back on the bridge that has carried me over. My apple crop has sold for $2,700.

Mr. Phillips — What has been the cost to get the $2,700.

Mr. Hatch — The orchard has paid me for years. I paid $800 for thirty-five acres of land containing ten or twelve acres of apple orchard and next year it paid for itself.

Mr. Gould — I want to know if there is any man in Wisconsin who invested $5 in crab apple trees and got it back.

Mr. Phillips — I raised $500 worth last year.

Q.— How shall we trim this year's growth of blackberries for fruit next year.

Mr. L. J. Kellogg, Ripon — It is a very simple thing. When the bush gets to be eighteen inches or two feet I merely pinch off the top of the cane, or new growth. This causes the cane to throw out latterals. We prefer to have a large branching top and get it by judiciously pinching back the new growth.

Q.— Do you pinch off the latterals?

Mr. L. J. Kellogg — I leave them and let them grow as long as they will. If you wish to trim any or shorten the latterals the best time is in the spring of the year.

Q.— Does it not hurt the plant and set it back in the spring?

Mr. L. J. Nellogg — No.

Mr. Hatch — How would you save the terminal wood?

Mr. L. J. Kellogg — In pinching the cane about two feet above the ground you can cover the bush as well as if

higher growth. In pinching back the latteral it will cause the cane to throw out new wood that would grow fruit buds, and in the winter those buds would be killed. We depend entirely upon a wire support for holding up the vines.

Q.—Do you ever use more than one wire on each side?

Mr. L. J. Kellogg—One on each side.

Q.—You do not intend to depress the wire to accommodate the new growth?

Mr. L. J. Kellogg—No, sir. There will be once in a while a bush that will hold itself. We have linen twine also in use.

Q.—Your wires are two feet apart?

Mr. Kellogg—Eighteen or twenty inches apart.

Mr. Thayer—What is the least distance you can place the stakes apart that support the wires?

Mr. Kellogg—We set our stakes about thirty feet apart.

Q.—What size wire do you use?

Mr. L. J. Kellogg—No. 13.

Q.—What does it cost a pound?

Mr. Kellogg—At Ripon four cents per pound.

Mr. Smith—How many pounds per acre?

Mr. L. J. Kellogg—It will take about 300 pound per acre. We cross tie to hold the bushes up, between the wires.

Q.—Would you treat black raspberries the same way?

Mr. L. J. Kellogg—The principle is the same. I would shorten the latterals in the spring of the year. We prefer to keep our raspberry bushes lower than the others.

Q.—Do you lay down black raspberries?

Mr. L. J. Kellogg—We do not.

Q.—Do you grow them?

Mr. L. J. Kellogg—Yes, sir.

Q.—What varieties of red do you grow?

Mr. Kellogg—I am not growing red raspberries to any extent. I have three-quarters of an acre that are Marlborough and Hansel. My idea of a red raspberry will be the type of the old Philadelphia.

Q.—Have you ever grown the Brandywine?

Mr. L. J. Kellogg—I have two seasons, and grubbed them out.

Q.— Will the Gregg raspberry stand the winter without covering?

Mr. L. J. Kellogg — No, sir; not always.

Mr. Thayer — How much will it cost to lay down an acre of blackberries with wages at a $1.25 per day?

Mr. L. J. Kellogg — In the vicinity of $5 an acre.

Mr. Thayer — Can you put down raspberries as cheaply as you can blackberries?

Mr. L. J. Kellogg — The same. The average life of the raspberry is not over three years. I do not think we can afford to put in the stakes and wires for that time.

Prof. Goff — I would like to know why it is advisable to shorten the latterals of raspberries and not of blackberries.

Mr. L. J. Kellogg — The terminal growth is matured on the blackberry.

Q.— Is there danger of attempting to grow too much fruit on a bush?

A.— In places we have to thin out.

Mr. L. J. Kellogg — Ancient Briton is the best of anything put on the market to-day.

Q.— What is the second best?

A.— There is no second best.

Q.— Have you tried the Stone's Hardy?

A.— Yes.

Q.— Was it good for a market berry?

A.— No, sir, it was not satisfactory in any way. It does not grow as much fruit as the others.

A member —If you will come to Ft. Atkinson I will show you that it has more fruit than the Snyder. I would like to hear from Mr. Converse on the blackberry question.

Mr. Converse —We have not had very much experience. In regard to the Ancient Briton, we had it for some three or four years, in that time we could not see that they were anything better than Stone's Hardy. We set out fourteen thousand of the Hardy and twelve thousand of the Snyder. Since then we have increased the Hardy patch and left the Snyder where it was.

SOME OF OUR NATIVE TREES.

BY J. S. STICKNEY, WAUWATOSA, WIS.

Ladies and Gentlemen:—In the course of our correspondence, our secretary asserted and insisted that I did know something about trees. You will very soon discover he has taken a very odd way to prove his assertion, and yet the subject of trees is important enough, and large enough, so that we all ought to know something of it. When you think for a moment that in the manufacture of matches even several millions of feet of timber are used annually, and then look at the car factories, agricultural implement factories, and the thousand and one other industries that are con-

Sugar Maple.

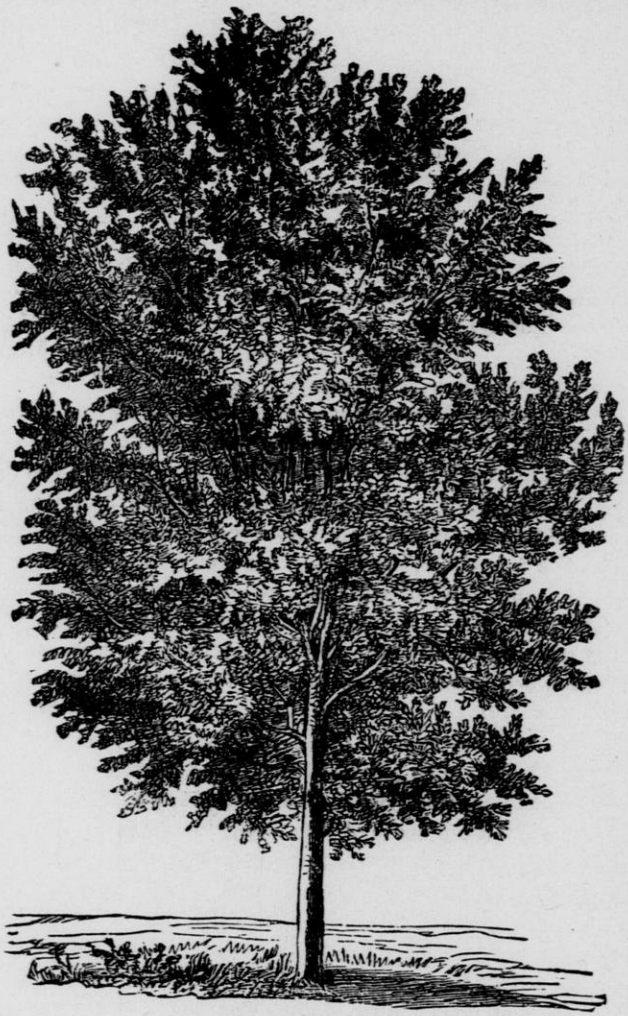
stantly consuming and using timber, you will readily perceive the magnitude of the timber industry. Most minds gain a better knowledge of things by comparisons. We are all aware of the fact of the great mineral resources of the country—the gold and silver mines of the country, and yet you will concede that as compared with those the timber interest is vastly more important. Can we see all this and not believe that in the near future there will be a dearth of timber,—a scarcity of timber that will put us to serious inconvenience? I suppose it is a fact to-day that Wisconsin has more timber than fifty years ago; in the prairie regions this is true at least. I think the increase there will more than balance the

decrease in the pine regions. When we go back to New England and see the vast areas of land in the mountain states in inaccessible valleys covered with timber, the immediate scarcity does not strike us as being very near. When you look at the accumulation of timber in Alaska for instance, the danger does not seem very imminent. It is the question of transportation rather than the actual scarcity that will come to the front in the next hundred years, this is being carried farther and farther every year. Well then the object in looking after our timber and growing timber is not for the fact that we must all perish for the want of it. I hardly know how to present what I want to say on the subject so that it will be both interesting and useful, but I will talk of our native timber. I believe that is the way the secretary put the subject before me.

OAKS.

First, our oaks. We have a dozen or more varieties of oaks, among them are three of our most useful and valuable trees. The white oak being the first, the burr oak coming next and the red oak third. There are others but their value is little as compared with the three mentioned. In cultivating the oaks or promoting their growth, the first move is to take the lands where the choice oaks are growing upon them and protect them from the cattle and fires. You understand, of course, the growth of timber is a matter that requires faith and patience almost unlimited, but if you will make fair and candid figures and give the necessary time to it you will see it pays as well as other things. Other crops are planted and we reap an almost immediate reward, while with timber we must take time and exercise patience. We Americans are always in a hurry and cannot take time, that is where we sometimes miss it. We want to plant this month and reach a definite result as soon as possible. In this country when we take off the parent trees there is a fine undergrowth of young trees which in time, if protected, will replace all the timber taken out. In my neighborhood to-day I know of one patch of twenty acres that perhaps twenty-five or thirty years ago was covered with little oak shrubbery, the first growth was all cut off and the underbrush left. To-day the trees are thirty-five feet high and you can cut forty cords of wood from an acre. In the meantime you could have cut ten cords of wood by thinning from year to year. That on land not needed particularly for cultivation, and not fit for cultivation is a pretty good return. The wood is worth from three to four dollars per cord. It is a pretty good crop, better than depositing in the bank at three per cent. and having the bank fail. In other words, where you can save a piece of land that is reasonably stocked with white oak or anything whatever in the line of good timber, do it. For the first few years they will not seem to gain very much, but as time goes by they gain wonderfully and the growth upward is very material. One theory of tree culture is to let the trees be close together thus driving the growth upward. The first object is to get height, length of body. This is of the utmost impor-

tance. There is only one way, only one right way to do it in planting young timber, and that is to plant closely. On the prairies they are planting them four feet apart each way, and thus cause the growth to have an upward tendency, while if you plant them farther apart, which you can do at less expense at the time of planting, the growth will be sideways instead of upward, and there will be no upward growth, consequently no long timber. Always plant thickly, so that the crowding on the side will send



White Ash.

the growth upward and the thicknecs of the shade will hold the moisture and that with the leaves that fall will form a good mulch. When the trees grow large enough to need thinning out do it, using the trees taken out for

poles, firewood, etc. There is one other rule of planting that must be observed, in the patches of ground we use for timber we are all apt to let the cattle run. This should not be, they tramp the ground making it solid and compact when the soil should be mellow. They spoil the ground. You want to let it alone.

ASH.

The next after the oak comes the ash, the white ash particularly growing well on high ground in localities farther south. The green ash is next in value, its native state is Ohio and it grows better farther east than this on moist ground. These are valuable for their fine timber and also for the fact that they are easy to cultivate. You can always find plenty of ash seed and you can gather and plant it and be as sure they will become trees as when you plant corn you are sure of the corn.

BLACK WALNUT.

Black walnut is a fine timber and a fast growing tree, and needs deep, rich, moist soil, and it wants all the room there is. It is a strong feeder and bad for other trees. The same is true of the butternut, they should be planted by themselves. A plantation of black walnut on deep rich soil, is perhaps as valuable as any other, and will pay as much money as any other. It does not reach maturity as soon as some trees, but when the harvest comes it always pays. These can be transplanted when one year old. After they grow larger they can be transplanted, but not safely.

HICKORY.

Next in order I would name the hickory. But do not attempt to transplant after one year old. I never have transplanted a tree and made it live. The nuts should be planted where they are to stand. We have two varieties of the hickory, the pig nut and shag bark. I would plant the pig nut for hoop poles, and cut for hoop poles at the right time, say once in five or six years. You can take a crop from them that will give you good prices. These are fine ornamental trees.

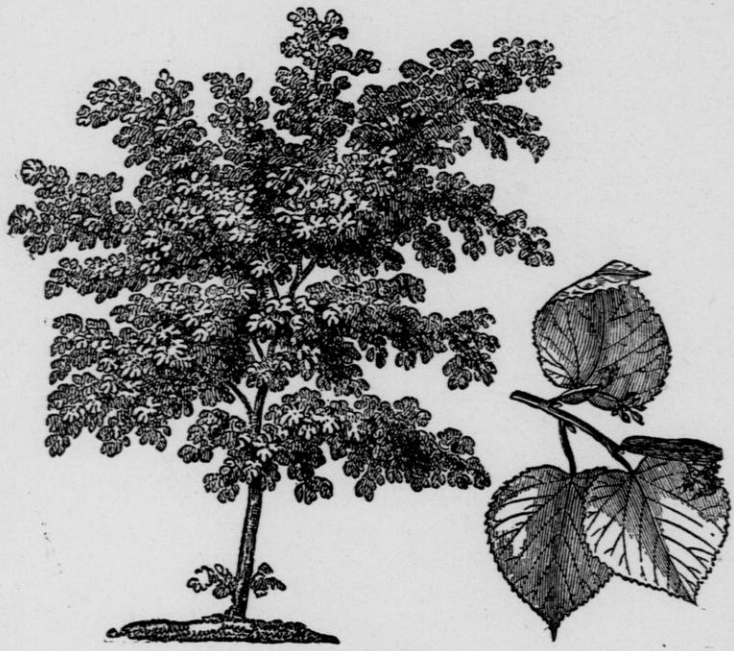
ELM.

The elm as a shade tree beats all the others. There are two, the white elm and the corky bark elm, which you see about this time in great beauty. It is a more beautiful tree and does not spread as much as the white elm. The elms are the easiest of all trees to handle. Their seed falls as soon as they are matured. The seeds readily grow making very handsome shade trees, they are a small tree but very handsome. You want to gather your elm seed the day it is ready and ripe, early in the season. You want to plant them immediately. You can keep them a few days by keeping slightly moist. The white elm has a very light little seed. Plant on carefully prepared ground, cover very slightly. If the weather is dry and hot cover with a light mulch of straw to keep it from drying until it sends its roots into the soil, then it will take care of itself.

MAPLE TREES.

Then come the maples. The hard maple or sugar maple is the king of trees. Good for shade and timber. The soft maple is very easily grown and transplanted. The soft maple seeds mature just about the middle of June and have to be gathered and planted immediately.

The box elder is also a maple. It carries its seed through the summer. It was formerly placed under the genus Acer by Linnæus, but later botanists have placed it in a new genus, the Negundo Fraxinibolium. The foliage is a light green, the tree is small and grows to perfection from Manitoba to Florida. It has no particular value for timber. Then there is the little red maple, small compared with the others. It is a very pretty tree particularly in the spring from the fact that the buds at that time are very beautiful.



Linden.

LINDEN AND BIRCH.

The next perhaps comes the linden, a valuable tree, giving a fine, broad shade, always clean, affording food for the bees, and grows well. Lumber is cut from its logs and it is therefore valuable for its timber. They are worthy of more attention than they receive.

Then there are the birchs, the white birch common all over the hills of the northeast, and is used for fuel and for making bobbins and spools and

other work of that kind. Of the improved birch I have some on my ground that I value very highly.

Black birch is another very nice tree. Canoe birch and black birch are very valuable for their wood. They grow well in some localities but not in my section.

There is the wild black cherry, a valuable tree easily grown and easily transplanted. There is also a little shrub cherry bearing red fruit, sugar bush we used to call it. If the birds will allow you, it will give you a good crop of berries.

The locust is hardly worth mentioning. If you can grow it, and not have it destroyed by the borers, it is valuable for posts, like the red cedar will stand a great many years, it is very enduring. I mention locusts simply on account of the talk that has been had in the state for the last year about the honey locust for hedges. Mr. Peffer has made a hedge of the honey locust and says it will stand the shears. I guess he has found it pretty expensive.

The poplars are hardly worth mentioning, the wood is light and easily broken and not worth much for fuel. The cottonwood grows rapidly and is valuable only to stand until other trees are grown to take its place.

There are quite a good many willows here. I never knew where they came from. The Wisconsin weeping willow has a value. It is the only weeping willow you can plant with any surety of its living. You can take white willow switches and plant them where it is slightly moist, and be certain they will grow readily and rapidly.

Now as an ornamental shrub we have two or three varieties of thorns that are worth mentioning. You can transplant them, you can shear them in any form. There is the hawthorn which has glossy leaves and sometimes grows thirty feet high. The borers will work on them, but there is too much shade for them to do harm to any great extent as they like the sun-light for their work.

The crab apple can be trimmed in any shape you like, it will make a good arbor. Their blossom in the spring is very pretty and the foliage is always fresh and green.

CONIFEROUS TREES.

We have some fine coniferous tress of which the white pine is the best of all. It is a pretty ornamental tree. You can plant nothing nicer than a white pine. Of all the trees you undertake to shear and make close and compact, it would be about the last you would select, and yet by a judicious use of the shears it will become more and more compact from year to year; if you shear it from the outside as you would a hedge of Arbor Vitæ you will get a wall of most beautiful green. I know of no tree that will shear more prettily than that. I saw a fine sample of this at Mr. Manning's, in Boston. You cannot find a handsomer tree to make an ornament of than the white pine. You will find none with broader, more generous shade than they.

Among our evergreens for ornaments there is nothing that stands right up and endures for years like the white spruce. There are two spruces, the white and the black. You will find the black spruce on the margins of the swamps. The black spruce is comparatively surface feeding. It will stand for years.

White and Norway Pine.

They never reach over twenty feet, but is of a low growth. The white spruce is of perfect form, always fine and handsome. You can distinguish the difference between the two trees by drawing a branch through your hand and noticing the odor. The black spruce you will smell no odor, while the white spruce has a strong musky odor. You can always tell it in that way. This is one of the nicest trees we have. The Norway spruce is another valuable tree, vigorous growth, easily transplanted; the timber is white and elastic. It makes a very fine, compact hedge. If you remember the matter of the odor you can always distinguish the kind of spruce you want. The general appearance of the Norway spruce will mark it definitely enough. Our native hemlock is another very nice, ornamental tree, very nice indeed; with long, graceful, drooping branches. It

is very hardy, stands all localities, dry and moist weather. I notice they have several in Washington. This tree is easily transplanted and can always be taken from the northern forests without the trouble of growing the seeds. The Scotch pine is grown very largely and disseminated from the nurseries. I think it must have a higher value in Europe than here. The Scotch pine I have seen in this country is only eight to twelve inches in diameter. I have some that are twenty years old, and after they got their growth became unthrifty, and there is no more life in them. The Austrian pine is a very much more vigorous tree with me, and grows better and maintains itself from year to year. *Why don't we plant more trees?* There is hardly a farmer but what has five or twenty acres of land of little value for other things which can be planted to trees, and if the cattle be kept away, in a brief period of time will be valuable. Every farmer ought to grow his own timber, particularly in this region that has been all pine. These two trees that could be planted here: The white pine whose seeds are springing up, and you can gather them in the woods, and the Arbor Vitæ, which are always grown with success in this region. It would be a better inheritance than anything else for the next generation. We do a great many things for the benefit of the next generation, why not this? Yesterday a man said to me, "we want fifty ash and maples" to plant next year. I said I should be very glad to send you ten next spring, and if you do well with them I will send you more until you get fifty.

FRUIT GROWING FOR FARMERS.

BY J. S. HARRIS, LA CRESCENT, MINN.

Mr. President and Members of the Wisconsin State Horticultural Society:— Too often the papers and discussions at such meetings as this are altogether too elaborate and scientific to be of the greatest benefit to the average farmer, and much of the matter contained in our annual reports is of value only to the professional gardener and fruit grower. I shall endeavor to make what I have to say at this time brief and yet plain enough to be understood, rather than a brilliant literary production, useful only as an ornament. Our mission is not so much to help the nurserymen and professional fruit growers as to educate and encourage the masses to grow their own fruits, and ornament their home surroundings with the beautiful trees and plants that will thrive upon our soil and in this climate, enhancing the value of the lands and the charms of country life.

In the older states south and east of Wisconsin, nearly every farm worthy of the name, is not considered complete without its orchard of apples, pears, plums, cherries and at least a few peach trees, and in many localities they bring liberal rewards in fruit, to those who care for them.

In Wisconsin and the region north and west, the difficulties and uncertainties attending have proved so great that many farmers have abandoned the setting of fruit trees, and their families are living without fruit except, in such meagre quantities as they feel able to purchase. I hold to the opinion that the farmer and his family should be supplied with an abundance of fruit the year around, and that there are but few farms in the northwest so badly located that it cannot be produced upon them in quantities ample for the needs of the family, and at a cost that will make the growing of it profitable. If they are carefully planted and cared for, the farmer can purchase from trustworthy nurserymen, trees of the Duchess, Tetofsky, some of the best of the hybrids, and perhaps a few of the newer Russians, at a cost of from 10 to 25 cents each. These should be set upon good elevated ground, that is rich enough to bring good crops of corn, and if they are kept cultivated and stock is not allowed to run among them, he may reasonably expect that they will soon pay for themselves in crops of fruit. But if we admit that the farmer cannot grow apples, there are plenty of other fruits that he can grow with absolute certainty, and scarcely feel the cost. Among these are native plums, strawberries, raspberries, blackberries, currants and grapes.

The native plum will thrive on almost any soil if given cultivation, but will not long survive blue grass sod or the rubbing or tramping of stock. They can in many localities be procured from the groves at the cost of digging, but as many of them are of poor quality it would be better economy to purchase enough for a start of such cultivated varieties as the De Soto, Weaver, Rolling Stone and Cheney. It is better to plant more than one variety and somewhat closely together in the style of a grove or thicket, and let the De Soto always be one of the varieties. If the plum orchard is located where poultry have a free range in it the fruit will be more free from attacks of curculio and other insects. The strawberry is peculiarly adapted for a farmer's fruit. It will grow and thrive almost everywhere in all kinds of soil and locations and give rich returns in fruit if simply given cultivation. If a choice of soil can be had set them in a deep rich sandy loam.

Deep plowing in the preparation of the bed is one of the prime essentials to success. If the ground is not already rich plow in a liberal dressing of compacted barn yard manure. That from neat cattle is the best. Before setting the plants let the surface be finely harrowed or raked. Set good plants. It is not a good or safe plan to set a new bed with plants taken from an old bearing bed, even if a neighbor will furnish them for nothing. They will be found lacking in vigor and often badly mixed. First procure plants of varieties wanted, from some careful grower. If after you get a start it is not desired to purchase plants for new beds raise your own by setting a little bed each year expressly for that purpose, using care that varieties do not run together and get mixed. Pinch off all blossoms to prevent fruiting and keep the ground mellow and rich so that the runners

shall make vigorous, well-rooted plants. Such plants at home can be carefully taken up and set almost any time during the growing season, but all things considered spring is the best time for setting a bed. Set in rows three or four feet apart and plants in the rows 16 to 24 inches apart according to the variety. After the plants are set see that the surface soil is kept mellow during the entire growing season and do not give weeds or grass a chance to get a foothold. It is best to turn the runners in towards the rows so that at the end of the season the bed will present the appearance of matted rows about two feet wide with clean narrow walks between.

At the beginning of winter, after the ground is frozen an inch or two in depth, the bed should be lightly covered with straw, coarse marsh hay, or broken corn stalks; this covering may be raked into the vacant spaces in the spring and will serve to keep the beds clean and moist. Do no hoeing the second season until after the fruiting season is past; if weeds appear pull them out. As two crops is all that can be profitably taken from a bed, it is best to prepare for a succession by planting a new bed each year, and plowing under an old one soon as the last fruit is picked. From 300 to 500 plants will form a bed sufficient for an average family. The best varieties for the farmer are Crescent, Capt. Jack, Wilson and Downer's Prolific. The Crescent is a pistilate variety and will not produce good fruit unless about every third or fourth row is planted to one of the other varieties named. If the farmer desires a few fancy berries let him try the Jessie or Buback No. 5. The season of raspberries follows close after the strawberries, and the labor of growing them is not as great. Give them good and well-prepared ground at the start; plant in rows six to eight feet apart and three feet apart in the rows. Give clean and frequent cultivation or heavy mulching. I cut the surplus suckers of red varieties as weeds, i. e., keep them out. Some varieties will require winter protection, and in this climate it pays to give some protection to all. This is given by bending down and covering with straw or earth; first throwing a spade full of earth against the base on the side to which they are bent to prevent breaking of the canes, and another on the tops to hold them down; after the row is down go back on it and finish up the covering. The covering should be applied at the beginning of winter and removed early in the spring.

The best varieties for farmers are, of blacks, Tyler and Ohio; of "reds," Turner, Cuthbert, and Brandywine. Blackberries require treatment similar to raspberries, except that all varieties must have winter protection, and in laying down a spade full of earth is removed from the base on the side towards which they are bent. Currants are a valuable and much neglected fruit; every one ought to know how to propagate them. A yearling shoot, six to ten inches long, planted two-thirds of its length in the ground, either in autumn or spring, will by the next autumn make a strong well-rooted plant. The currant will grow in almost any kind of soil, but that which is deep and rich and given high culture will give much the best re-

sults. Plant in rows six feet apart and four feet apart in the rows. About three or four stalks should be allowed to grow in a hill and sprouts are to be removed, except that when the bushes get four or five years old raise one new one and remove the oldest one each year.

Most farmers might raise their own grapes by setting them on high well drained ground, and using the hardiest and earliest varieties. They should be laid down and covered in the winter. In the fall the current season's growth should be cut back one-half or more, and not too many canes allowed to grow from the base. Moore's Early, Worden and Concord, are the safest varieties to plant. Every farmer should have from one-half to one acre devoted to the growing of fruit for his family. As far as possible everything should be set in long rows so that the work of cultivation may be done with a horse. With a plenty of fruit on the farm, the family is assured a cheaper and better living, better health and greater prosperity.

DISCUSSION.

Mr. Harris—I have been engaged in the growing of grapes some twenty-five years. I learned grape growing from a German down on the Rhine. I gradually abandoned the practice which he taught me. I have found that one-half the grape literature is a humbug. I am not practicing a great many things I teach. It would not do for me to go out and teach what I practice. I do believe that one-half the cause of black rot and mildew which we now have in America is brought on or induced by the practice of trimming or close pinching and summer pruning. I find this disease which is causing so much alarm has been brought on by that practice. We should keep the vine reasonably open and give it a good chance to produce leaves if you want the best vines and the best grapes. I have not lost a grape since 1873, it is about then I began to abandon the habit of close pinching. If I have the foliage and canes long and thick I have good wood. I would advise you or anybody else trying my way. If you cover them you are sure of a crop.

Mr. Stickney—By pinching back in summer do you promote ripening?

Mr. Harris—It does not promote the ripening, it starts the sap. It does more hurt than good. People do not understand the theory of pinching, they do not merely take

off a little pinch but a long piece. I went to visit Mr. E. Wilcox and found him in the vineyard taking out every latteral and leaves except one. He left one on a bunch. He didn't sell five hundred pounds of ripe grapes last year; I sold several tons of them. Mine were two weeks earlier than his; I didn't pinch at all.

Prof. Goff — We are making a bulletin at the Station of the several noxious weeds and there is one weed we have not been successful in finding. It is called the *sow thistle.* If there is any of the farmers here with this weed growing on their farms, who will send us a plant, we will be very glad and of course will pay the charges. The reason I speak of it in this way is some may think they have it when they do not and I had just received three or four which were supposed to be the same and there is not one. The plant must be in blossom at this time of year.

Another thing I wish to speak of, we are planting, and have laid out a good deal of work in the way of growing native plums. We desire to grow a tree of every valuable native plum. Our object is to get all the plums at the Station which we can find, and make a list to distribute around the state if desirable. If any of you have a valuable plum that you think is worth disseminating we will consider it a favor if you will send us half a dozen scions, we will repay the postage.

Mr. Harris — In sending those plum trees to the professor, it would be better if you would send them rooted and sprouted. If you have a variety that has never spread from the root it would be a vey good plan to see if you can't start it from cuttings. I will furnish a Cheney. I dug up a tree and cut it in pieces and in the fall put the cuttings in the cellar removing them in the spring and planting them. They are doing well and I will send in one.

Mr. Periam, of Chicago, editor *Prairie Farmer*, being called on for a few remarks, said:

I do not really know why I should be called upon to speak to you unless it is from the fact that I always like to go where there are horticulturists. I am always sure to find things good and beautiful. If you don't believe that I will ask you to look at the display here.

The remarks on trees and timber interested me very much and struck me

favorably, and I want to tell you, gentlemen, there could be no better inheritance for you to leave your children than a large plantation of growing timber, as you have it where you want it and just the variety you want. I am sure the valuable old oak will hold its own and will always be worthy of cultivation, perhaps more than any other timber we have.

I was surprised to see vegetation farther advanced here than it is about the city of Chicago, especially corn and potatoes. It shows that you either have a warmer soil than we do or else you have had more sun and heat this year than usual. The Wisconsin Horticultural Society, as far as my observation goes, and it is pretty wide in keeping track of the horticultural societies and interests of the farmers generally, is the farmer's horticultural society of the west. At our former meetings in Chicago we had more or less large delegations from Missouri, Ohio, and Wisconsin, but now the interests of our society are no longer in this discussional work that gives us practical aid. We have now a State Board of Horticulture, and I have noticed that our last meetings were not so large as the previous ones. This year we intend to take active steps toward making our society a success, as the legislature has been more liberal this year, and we can accomplish more in that direction. Our local societies are good societies, both in northern Illinois and southern Illinois. They are really doing the work of the old horticultural society, and for that reason I am always very much gratified in attending the meetings of *this* society, and always find something of value and interest.

I do not know the capabilities of the state of Wisconsin for grape culture, neither do we begin yet to see the capabilities of the state of Minnesota. We have summer enough to ripen them and it is only a question of winter protection, as has been stated in relation to blackberries and raspberries, and you know the state of Wisconsin has entire control of the markets of the great northwestern district as far as blackberries and raspberries are concerned. We can get them in Chicago as we want them. What is the reason we can't grow them? We can, but we cannot protect them as you can. You have a little more snow. Now, if you will take the same care of the earlier maturing grapes, and with the hardier varieties, you may have grapes for the million. I am astonished that the average farmer —I mean the farmer of the average sized farm— I am astonished that you may travel through the state of Wisconsin and you do not find one good vegetable or fruit garden in ten farms. The money outlay in cultivating a garden is well invested. Why not then cultivate small fruits, it will afford you more pleasure and comfort than any other one thing, and is better than what you can buy. There are the raspberries, strawberries, currant, gooseberry and blackberry. It is astonishing to me that every farmer who has a twenty-acre lot doesn't half support the family by the cultivation of his garden.

Mr. Kellogg — I move that Mr. Periam be elected an honorary member of this society. Motion adopted.

THE MORAL INFLUENCE OF FRUITS AND FLOWERS.

BY MRS. VIE H. CAMPBELL, EVANSVILLE, WIS.

The individual who looks at the status of humanity through the lens of the optimist, has a better comprehension of the requirements necessary to promote its advancement than he who takes a pessimistical view of life. From his broadened outlook he has received an influx of love and sympathy from the All-Father that will re-act with beneficial results upon all with whom he may come in contact. His powers of perception are quickened, and so sharpened and lengthened that he is enabled to project them far into the future; and while he sees the plane upon which mankind stands to-day, he also sees the high altitude it may attain in the near to-morrow.

The faith in an uplifted humanity is an inspiration from Heaven, and he who possesses it is like one who receives a perpetual benediction. It renders easy all the countless difficulties that betide the way and fills the heart with courage for arduous undertakings. Faith is the soul of life; it is the intangible principle that, with unseen tentacles, grasps not only all that lies above and beyond the common plane of life, but also seeks to exalt that which, by reason of unfavorable conditions for development, is below; it is the sturdy oak in human lives upon which all other faculties cling for support; it is imperishable, and though it may become at times obscured by flitting shadows, it eventually shines out radiant and triumphant. Although the giant, Doubt, with his hammer of distrust, attempts to tear down and destroy whatever he comes in contact with, he has never been able to destroy Faith, nor to tear down the stronghold of its abiding place.

Whatever tends to develop man's moral nature strengthens, also, his faith in a better humanity.

It is an indisputable fact that man is vitally affected by his associations; how much they have to do in determining his moral status is difficult to estimate.

Association with nature develops the moral as well as the æsthetical faculties. Careful observation reveals to us the strong humanizing influences exerted by the cultivation of fruits and flowers; there is a refining influence that comes from their daily care and culture, that forms an important factor in the civilization of to-day. They not only conduce to a refined taste, but they also appeal to the sympathies and arouse the nobler instincts.

The powers of observation and appreciation are also quickened until it seems sacrilegious not to appreciate the beauties, or to be unmindful of the refining influences with which nature surrounds us, for

"where 'er we turn
"Are God's great pictures hung."

The profession of horticulture tends to broaden every one who becomes actively interested in, or associated with, it. With his outlook so broad there is no excuse for the true horticulturist growing narrow and selfish in his limitations. Scope, not contraction should ever be his watchword; better conditions and better results his constant aim. He is constantly being brought face to face with fundamental truths that will benefit and uplift, as well as broaden his sphere of action, for the uplifted is always the broadened outlook.

While the careful watching of the growth of fruits and flowers, and the study of those beautiful things that embellish our surroundings, afford enjoyment, they also elevate the character, and by making life happy and beautiful fit us for the life beyond.

Nature's museum lies at the very threshold of our own door-way if we but open our eyes to the fact and seek the wonders to the careful observer revealed; and we possess no faculty capable of so great cultivation as the faculty of observation. This power of observation is the power of intensifying thought upon objects seen so as to produce lasting impressions. To be able to see a fact and make an intelligent note of it is a faculty we all possess in a degree only limited by the amount of cultivation we have given it. This faculty has much to do with the success of those engaged in horticultural pursuits. They must possess the power to investigate, read and interpret nature in an eminent degree; they must be able to go to the fountain head and draw knowledge from the original source.

This close association with nature constantly tends to widen our sympathies, quicken our charities and enlarge our faith in our fellow man — something that we never have too much of. It also develops the reverential in our natures.

There is need of an awakening among people in the interest of horticulture — an arrest of thought if you please. People not directly interested in the cultivation of fruits and flowers are slow to perceive that the study of horticulture holds any attractions for them. Early impressions are lasting, and education furnishes a remedy for this indifference. The study and labor of horticulture is ennobling and refining in its influence, and beneficial results could be obtained by its introduction into our common schools. Children naturally love flowers and fruit, and it is very easy to interest them in studying and caring for them. The education of no child should be considered complete until he has learned enough of horticulture to familiarize him with the trees and shrubs indigenous to our country; also our fruits and their methods of cultivation. If a curriculum of study should be adopted for our common schools, that provided for a certain amount of time in each week to be spent in the study of horticulture, it would effect a revolution in some of our school-rooms; they would not be the dreary desolate looking places some of them are to-day — so desolate that it is little wonder that our boys and girls are restless amid the cheerlessness of their surroundings. I know that you will say that we have too much

taught in our schools now; that teachers and pupils are overburdened with work, and I agree with you, but under the new regime we will divest our curriculum of the superfluities and give more prominence to the real practical things of life. Who does not feel the force of the German proverb: "Was sie wünchen in das nations lebens erscheinen haben, sie müssen in ihrer schuleein führen"— "What you would have appear in the nation's life, you must introduce into its schools." Mold into the plastic mind of the little child a love for the labor of horticulture and it will strongly influence his future life.

In my experience as a teacher I always found my dullest pupils intensely awake whenever I introduced horticultural topics in our object lessons. They were so much interested in learning how plants grew, and were much more enthusiastic on those subjects than they were over the prescribed routine of text-book work. Whenever I think of the moral influence flowers exert over children, my mind instantly reverts to the success of a young lady friend who had undertaken to teach in a rural district every where known as a very difficult school to govern. With the aid of the older pupils she prepared flower beds in which seeds were sown, and in due time their patient toil and care was rewarded by a wealth of bloom. But the flowers and the improved appearance of the heretofore bare and cheerless school-grounds were only a small part of the reward that was reaped by that teacher in her summer's work. She awakened a new interest in the minds of those undisciplined pupils and the result was, they governed themselves. A few laughed a little at first about the "school-marm's posey beds," but they soon saw the good effects, and they see them to-day although many years have passed since then, and most of those pupils have homes of their own.

Our future farmers are receiving their education, forming their character and preparing for their life work, in our common schools. It is our duty to see that they have the opportunity to become educated in that branch of work that will exert the greatest influence for good; that will improve their own condition and enhance the beauty of their surroundings. To the observance of Arbor Day, and the many beneficial lessons it will teach, we look for grand results. Every tree or shrub that is planted and cared for will stimulate to further improvement.

Flowers are moral teachers; they are lovely companions, ministering spirits to the saddened heart and an inspiration to anyone who pauses long enough to drink in their wondrous beauty and fragrance. To give a faint idea of the great amount of good that is derived from the Flower Mission department of the W. C. T. U., alone, would take more time than I am allowed for this paper. Of the beneficial effects of the distribution of flowers among the dependent and the insane, those who have these poor unfortunates in charge are ready and glad to testify. Superintendents tell me that their patients look forward to the days they are accustomed to receive flowers, with the eagerness of little children.

It was thought by many that giving flowers to criminals would not do any good and might possibly do a great deal of harm by rendering attractive their places of confinement, consequently prison doors were the last to swing open in response to the entreaties of the Flower Mission.

The result has been very gratifying even to those who shook their heads in disapproval, and where women had to plead and urge admittance, formerly, now those in authority express the desire to have Prison Day observed, for they see the patience, tenderness, love, purity and gratitude that the gift of flowers incite in the hearts of those the world deems dead to refining and subduing influences. Those inmates are passing years of their lives in confinement in expiation of wrongs that throw such long shadows over their future that the whole path seems dark before them. Who can tell how much the influence of one little flower may be instrumental in lighting up that dark path to a useful and honorable life in the future? The instances of the penitence of a hardened criminal upon receiving a little spray of mignonette, is no doubt familar to you all, this instance is only one of many.

We are only in the a b c of horticulture, yet horticultural art is making its influence for good, felt everywhere. He who has a tasteful and well-kept lawn, unconsciously, perhaps, but none the less impressively, furnishes an object lesson to every passer by and stimulates him to improve the appearance of his own surroundings.

The desire to make our homes attractive becomes more prevalent each year.

To have beautiful flowers and fine fruit does not require a great outlay of money, they are within the easy reach of all, only requiring a very small expenditure in addition to patience and care.

It is said that the public parks of Chicago, upon which hundreds of thousands of dollars have been expended, are worth ten times that amount to her people in a moral point of view alone. Every tree and every flower that a city grows is a moral power exerting an influence that, to some extent, preserves its peace and insures safety to life and property. Fresh air, and the gentle laughing welcome of trees and flowers, calms and refreshes many a restless, turbulent spirit.

From being considered a luxury a few years ago, fruit is now regarded not only as a necessary article of diet, but as greatly promotive of health. So great has been the improvement in the past twenty-five years in the way of horticultural adornment, that thousands of lawns are now blossoming with beauty that would not have been worthy of the name of lawn then. This change has been wrought very largely, through the influence and endeavors of our horticulturists. It is to be hoped, with the increase of knowledge and better facilities for preaching the gospel of horticulture to all people, that the good work so auspiciously inaugurated in this state will go on until every home shall be blessed by sheltering trees, beautiful flowers or luscious fruits, and no person will think it pays

him to neglect any opportunity to provide his home with the attractions that conduce to beauty and refinement.

I am well aware that much that I have said on this subject will seem mere speculative theory to those who prove all things by the "does it pay" catechism, who sit down with pencil in hand to figure up the profits when we talk about raising fruit. When we talk about raising flowers they do not give quite so much attention, they know to a certainty there is no money in flowers and they do not waste time in trying to figure a profit. There are some things in life that are priceless; they are far above a money valuation, health, happiness and comfort cannot be estimated in dollars and cents. It is no exaggeration, nor vain pretext, to say that the pursuits and products of horticulture, not only conduce to health and comfort, but are essential factors of a higher and more refined civilization. Hence you see that no matter how much effort it may cost us to raise our fruits, or our flowers, their value cannot be over-estimated. Although we may not be misers, we imitate the example of the miser, and approach his type very largely, when we bend all the energies of our lives to the hard, unennobling work of making everything pay in dollars and cents. If we are successful in business efforts there is a tendency to bend all our energies in the one direction in which we are successful, and the effect is always deteriorating. We become warped and narrow; the fountains of love and sympathy become frozen and we lose the opportunities within our reach, for the elevating and refining influences that would make us better and happier in all the relations of life.

"Tell me what a soul desires and I will tell you what it is," is an old phrase that contains a world of meaning. He who desires to make this life the foundation for the broader life beyond, will so govern himself that the faculties for acquiring wealth will be subservient to the better and enduring qualities that develop the highest type of manhood.

Those things that have a money value alone, will seem insignificant to him in comparison with the essentials to an attractive and happy home.

Every person who makes his home and its surroundings attractive, is an educator of the public taste, and the children reared in such homes will love them. There is no influence so potent as the home influence; it follows the child all through life. Through infancy and childhood the tender nature will develop and grow beautiful, strong and symmetrical under the sunshine of love, or it will harden and grow rough in the cold shadow of neglect and uncongeniality, and will go out into the world with a heart full of hatred. Upon every hand the tempter lurks and plots against the happiness, character and usefulness of those who go out to meet life's responsibilities. In every pathway there are pitfalls and quick-sands awaiting the untrained feet; to escape them, necessitates right views of life and a careful judgment. Love in the home is a positive, developing force, with the love and intelligence that surrounds the home with everything to make it attractive, even though the actual money outlay may be small, with those

attributes, character will develop with a strength capable of meeting and overcoming all obstacles.

Whatever appeals to the finer faculties arouses and stimulates them to a healthy growth. The close association with nature, that is necessary in the cultivation of fruits and flowers, constantly tends towards a broader, spiritual development that lifts up out of the little things of life, that from their very littleness, would narrow our influence if we gave them too much heed.

Does it not pay, then, in something better than dollars and cents to supply our homes with the fruit and flowers, that form such an important factor in refining and elevating character?

The homes of a nation are an index of her prosperity. In the evolution which this nation will experience in the future, man's happiness will be of the first and greatest importance. Then man will consider it a sacred duty to guard the interests of his brother man equally with his own. The morally strong will protect the morally weak. The foes of men that rob them of their homes and blight the future of bright promising young manhood and womanhood, that makes life a dreary wilderness of blighted hopes and wasted energies, will be forever vanquished. Then individual manhood will not hesitate to assert itself for principle in opposition to error.

It may look to some of you, my friends, like a long way in the future — a long hill to climb — before a realization comes, yet an abiding faith, in Him who lives and reigns, assures me that it will come, and it is glorious at the summit, worthy of all our efforts to gain it. It is a grand transfiguration, a world redeemed! And although many of us shall have folded our weary hands long before the goal is reached, and no monument shall mark where we fell save the daisies that bloom above us, yet we shall be happy in the consciousness that we stood unflinchingly in the great battle for uplifted humanity; that we swerved not, nor faltered in the path of duty; that although our feet trampled the briars by the way we helped to make the path easier for other feet to follow and the burden lighter for other shoulders because we strove to bear our portion of it.

"The airs of heaven blows o'er me;
A glory shines before me
Of what mankind shall be,—
Pure, generous, brave, and free.

A dream of man and woman
Diviner but still human,
Solving the riddle old,
Shaping the Age of Gold.

The love of God and neighbor;
An equal handed labor;
The richer life, where beauty
Walks hand in hand with duty."

WOMAN'S MISSION.

BY MRS. J. M. SMITH, GREEN BAY.

We hear a great deal in these days of push and progress of woman's rights, which are defined by different people according to the different bent of their minds. Shall I tell you what seems to me the highest, or rather the most desirable, position for a real, true, educated and well balanced woman, in this happy land of ours, in this nineteenth century? Let me give you a little memory picture to illustrate my thought. Over sixty years ago, on one of the sunny hillsides of northern Pennsylvania, stood an humble log house. Outwardly, it was just such a house as you might have seen almost anywhere at that time, in that new country, but it differed in one respect from very many others. It was a real home, over which presided a gentle woman who was a veritable queen of hearts, whose rule, though positive and by no means to be disobeyed, was yet so gentle and loving, that very rarely did any of the little ones who called her mother, wish to disobey. Although the most strict and careful economy were necessary in order that the needful comforts might be provided, the little ones never thought they were poor. Though the food was simple, there was always enough to satisfy their appetites, and no one's way of preparing food was as good as mother's. Then when Sunday came, there were always clean clothes for every one, though perhaps the mother had sat up late the previous evening, that none might miss them. The Sundays were delightful, too, for then the mother had more time to devote to the children. They had not many books, but those they had were of the best, and they read them again and again. and the dear old Bible, which surely is the mother's own book, furnished beautiful stories of which they never tired. Around the home beautiful roses grew, and hollyhocks and johnny-jump-ups, as the children lovingly called them, with a few other simple garden flowers, were the delight of childish hearts.

But the children were many and the proceeds of the small farm were not enough to supply their increasing wants; so, after due consideration, it was thought best to leave the home they had carved out of the original forest, and all loved so well, and begin another where a fine waterpower and plenty of good timber promised more means to meet the needs of the growing family. The mill was built and a house provided, and the family, with all their belongings, bade adieu to kind neighbors, and all the places where they had enjoyed so many pleasures, and again commenced to build a home. The place was wild, but any place was all right where the gentle mother's face was seen. Still they missed the green grass and simple garden flowers, and roamed through the woods near their home in the early springtime, digging up roots of wild grass which they found here and there, and carefully carried them home to plant near the house, to make

it seem more homelike. There was no school near for them, but the mother, while her hands were busy with household work, superintended the children's lessons, the older ones helping the little ones; and when they did well, she rewarded them by singing simple and beautiful songs, which was sweeter to them than any music ever heard since, from any grand chorus of singers. Aye, those songs still ring in their memories though over three score years have passed. The home slowly grew, and again the roses bloomed, and all seemed well.

But now, the father, never strong, was stricken down, and in spite of all that tender love could do, and the friendly offices of kind neighbors, he soon passed away, leaving the mother with a large family of little ones, and no son old enough to help. Tenderly they laid the father away, and the property was sold, as the mother could not manage it, and again she went forth to another home where she could do something to take care of her little ones. Her heart must have been well nigh breaking, but to her children she was the same sweet, gentle mother, never complaining or fretting, but patiently doing whatever her hands found to do, to keep her children comfortable and to send them to school; for there were then no free schools as now. One by one, as fast as they were able, they went forth to make their way in the world; but their hearts ever turned to mother's home as the dearest spot on earth, and a few hours with mother was a greater treat than any other entertainment that could have been offered them. As years passed, and she began to feel the infirmities of age, she was tenderly cared for by her children and loved and revered by scores and hundreds who had known her through a long life. When over seventy years of age she daily taught a family of poor children, living near her, and gave them many valuable lessons they would not have been likely to receive in a common school. She kept up her interest in every good work, and in those around her, until at the age of eighty years, she gladly passed on to the beautiful land beyond, to join the beloved husband who had preceded her by over forty years, but who no doubt, gladly welcomed her.

During her long life her portion of this world's good was small, yet she was ever ready to divide with those in need, and while she ministered to the needs of the body, gave good counsel to the erring ones, and tender words or sympathy to many sorrowing hearts. Having herself suffered, she was very tender to the sorrows of others, and ever ready to put the most charitable construction upon their acts. I do not think she ever had any ambition for a share in the affairs of government, though always interested in the welfare of the nation, and she instilled into the minds of her children good and noble principles. She taught them that all honest labor, however humble, is honorable, and that faithfulness to every trust is a Christian duty. The grass has been green over her silent resting place for nearly a score of years, yet the memory of her pure, unselfish and beautiful life is cherished by those who survive her as the sweetest on earth, and her influence will be felt through others for long years to come.

I consider home building the special work of true and noble women. Men may build fine houses and furnish them with every modern comfort and convenience, and all these things are helpful and delightful; but it takes more than this to make a true home. The children must take their first lessons from the mother; and no one who has had the misfortune to miss a mother's love and care can realize how early life-long impressions for good or evil are made on childish hearts.

The homes of the land are the nurseries of the nation, and if the homes were all pure and sweet there would be little cause for anxiety about the affairs of government. May the time soon come when the women all over our broad land shall recognize and appreciate the God-given rights, which no man can gainsay or deny, and by the careful training of their sons and daughters in paths of virtue and purity help to raise our nation to a height of true nobility never yet reached. A few there are who are fitted by natural gifts and careful educational training to go forth as public teachers; but the great majority of us, if we would make our influence felt, must work through our homes and families and those whom we daily meet. Who can tell what fruit may grow from the seed thus faithfully sown day by day. Very few of us have a chance to do any great things; but if we watch for the opportunities that are daily occurring around us and make the most of them, we may safely leave the results to the wise Father of us all. Then let us seek to make our homes pure and happy, that when our children are old and gray-headed they may look back to them as the starting points in earnest and useful lives.

DISCUSSION.

Mr. Phillips — A man may build a mansion and furnish it; he may build a palace with lovely walls and fine statuary, but he does not possess the faculty of making a home where there are only bare walls, as women can and do.

A member — I move that the convention tender a vote of thanks to the ladies for the excellent papers which they have presented this afternoon, also including the paper read yesterday.

Motion adopted.

Mr. Huntley — I should like to talk of this matter if I knew how, for the papers were exactly in keeping with my ideas, but I am afraid if I should attempt to say anything with the memory of these still in our minds, the force will be marred instead of made better. I believe in both of them. I would like to say a word about the paper on

flowers. We have had a little experience with flowers through these many years, and heaven willing, hope to have a great many more. We have a couple of dear ones. It would be strange if they had grown up with their mother and had not a love for flowers. One of them is attending school, but the health of the other is so poor she is not able to attend. She furnishes flowers for the whole family. We have them in large quantities, and the one who goes to school carries them with her. The teacher asks where they come from and the reply is "from the Huntley farm." We send them down every day, or nearly every day, and it is fully as blessed to give as to receive.

Now I want to say a word about boys leaving the farm. Do you think Prof. Goff and Prof. Henry are worse for growing up on a farm? Do not try to keep him on the farm if he wants to leave it, give him just the best chance you can. Help him all you can. I believe as Mrs. Smith says, the boys who grow up on the farm will always love and respect and obey the wishes of their mothers, if they have the right kind of an education. Nothing teaches so well as the example set for our children. I think a mother can do more for a boy than the father can. If he has a daughter, perhaps he can do more for her than the mother.

Mrs. Campbell — I feel like saying something in reply to that last remark, when he says a mother can do a great deal more for the children than the father can, I think he is shirking the responsibility. I think the father can do as much for the children as a mother can, but I imagine they are inclined to think they can do more.

Mr. Hoxie — I want to say one word on the matter of fruits and flowers. During the last week of the month of May last, there were sixty-three car-loads of fruit taken into the Chicago market.

Did you ever think where crime and misery come from? Is it where fruit and flowers are cultivated? You may look over the life history of criminals and convicts as you find them in jails, and I do not think you will find that they are from homes where flowers and fruits are cared for. In the wild prairies of Dakota if you find flowers you will

find a home of intelligence and refinement, and so you will find it here. Up and down wherever you go in the homes, wherever intelligence and refinement exist and the love of the beautiful are found and you will find flowers, you will find fruit. When we know these facts, ought we not in every way possible, encourage the cultivation of fruits and flowers? This is the work the Wisconsin State Horticultural Society is trying to do. This is why we encourage the ladies to attend and take part in our meetings and read papers. This is one thing that has given the Wisconsin Horticultural Society the reputation we have. In the county of Waupaca there are three local societies. Here I am glad to know you are to organize a society. It need not necessarily be called a horticultural society, but an improvement society if you like.

The State Horticultural Society has undertaken another thing. We had it under advisement this forenoon to offer a premium for prize essays written by young people under twenty years of age. One on the Improvement of School Grounds and another on the Native Shrubs and Flowers, etc. We wish to stimulate the young minds in this direction.

Mrs. Smith — I wish to speak of one point Mrs. Campbell touched upon in the cultivation of flowers. I wish to speak of a farmer's wife I know who is very much isolated from society who has just a few plants, she said when she was tired out and did not know what to do with herself, just a few minutes with her plants would rest her more than anything else.

Mr. Toole — The influence of the Horticultural Society in helping the work of teachers in different society meetings I have attended is very marked. The surroundings has much to do with the formation of the character of the school children, and if they have a love for the beautiful in trees and flowers, they are more easily raised above evil influences of bad associates. I had a very pleasant talk with Mr. Livingston, of the Normal School at Dodgeville. I have with me a paper written by him and I would like to read a few words of the practical summing up of it. (Reads from paper.)

Mr. Harris — Some twenty years ago I was on the ferry between La Crescent and La Crosse. There was a lady came to me and looked over my plants and took a great fancy to a rose-scented geranium. She turned to her husband and asked for fifteen cents to buy it. She looked like a woman who had had trouble. The man said, "What do you want of that, you can't eat it." The tears dropped from her cheeks. But by some way she got hold of plants, and to-day she is one of the best hearted of women, and the man is changed, too, and is growing small fruits for the use of his family. I believe the work was done by the influence of flowers.

SPARTA, Wis., June 20th, 1889, 1:30 P. M.

President — We will now listen to an address on

FLOWERS FROM SEEDS AND PLANTS.

BY WM. TOOLE, BARABOO, WIS.

To many the thought of raising perennials is attractive, because they think but little care is needed with this class of plants, as their seeds need not be sown every year. They form a very desirable class, but we must not deceive ourselves with thinking that they will care for themselves when once established. Nearly all of this class of plants are more hardy when young than old, so we must often renew them by dividing up, and if not disturbed they become too large, and without division become weeds unto themselves, or else grass robs them of nourishment until they die of drouth and starvation. The successful flower culturist may expend no more time or labor than the one who always fails, but the work is done judiciously and at the right time. Most flower seeds are so small that more care is required of them than with the larger field or garden seeds.

A covering of double the thickness of most kind of seeds is sufficient, and as all seeds are killed by drying after they have sprouted, we must give special care to the seed bed, nursing the young plants until large enough to plant where they shall bloom, because the care necessary to guard against all contingencies could not be extended over a whole garden. Thoroughly rotted manure should be mixed in the soil of the seed bed, and a little woods earth mixed with sand is good for a surface coating. The rows of seeds need not be more than a couple of inches apart and seeds

should be distributed thinly in shallow furrows. For very small seeds the covering must be very light, barely putting them out of sight being enough.

With the seeds so near the surface it is necessary to provide some shading and nothing is better than some kind of sheeting stretched over a suitable frame.

For the frame double thickness of common laths may be used, so placed as to break joints at the corners. The frames may be the full length of a lath and should be three feet wide or a little more to correspond with the width of the sheeting. The seed beds may be any convenient multiple of three feet in length and nearly four feet wide with a six-inch board set on edge along the front edge of the bed, and another twelve inches wide along the back to keep the frames up from the ground. Sprinkling the surface is necessary until the seeds are all up, after which the surface may be allowed to become dry a little, and the young plants be gradually accustomed to full sunshine. It is desirable to have all of the seeds germinate, else we may lose some of our choicest flowers. Some varieties of the same kind come more slowly than others. For instance, among pansies the Snow Queen will germinate more quickly and bloom sooner than other varieties, while Lord Beaconsfield and Odier come along more slowly than others.

In kinds of flowers which have been greatly improved like the petunia, those plants which are most like the original form of species will come along more rapidly than the more beautiful ones.

Thus it may be seen through a little negligence when the first few plants are coming up we may lose the best and think the seed dealer has furnished us with an inferior variety. It is better to sow such kind as germinate quickly, near together, keeping the slower kinds also to themselves. Some things like poppies, ercholtzias and mignonette, do not bear transplanting well.

Our little three by four frame may be used to protect the seeds where the plants will stay, and other kinds to be transplanted may be sown in the same bed with them. For earliness, a few things may be started in the house, and our frames will be a nice shelter for young plants until they are large enough for the garden. It is surprising how much protection these light coverings are against frost, and with a stock of them on hand, they may be made useful in the fall. More room must be given the young plants or else we may defeat our desire for earliness as it takes a long time for drawn slender plants to stock up after sufficient room is given them. But many people prefer to buy their plants rather than care for seeds, thus saving time but not money, although those who neglect their seed would save money as well as seeds to buy plants.

It will generally pay to give plants which have come by mail or express a little carful nursing before final bedding out, and nothing is better to start new roots than to place them a while under these cloth frames.

The little white tips of hair-like roots are the active parts which carry nourishment and moisture to the plant, and if these are broken off, new ones must be formed before growth of plant can be continued. As one of the functions of the leaves is to give out moisture, it will be seen that without shading, moisture will be given off faster than it can be imbibed by the broken roots.

Under our frames we can cause the growth of a new lot of feeding roots, with which the plant has much better chance of successful planting in the garden or field, than without them.

Before taking up our plants, the seed bed should be well watered long enough before, that the soil shall not be muddy, thus lessening the chances of breaking the roots and causing no soil to adhere to them. As we sometimes must transplant when the air is more drying than desirable, it is then best to sprinkle the roots with water, and then cover them with fine soil. This plan is much better than dipping them in mud, because the roots keep apart and can be planted in better shape.

Young strawbery plants if bought in the summer should be placed in such frames until white roots have started, when they can be planted in properly prepared soil without a failure. By thoroughly cultivating and fining our soil, we may have it in good condition, so that plants may be set out successfully in a dry time, but the preparation must have been done when the soil was in good condition, before a crust has formed, for fining a dried soil will not make it moist.

Any one who has studied Gray's Manual of Botany will understand what seed is, and its manner of germinating, also that the tops and roots are in part being constantly renewed and when broken cannot perform the office they are intended to perform until renewed, so if a root is broken it is practically of no use. They have a faculty of renewing the roots very soon. You may have had some plants that have started and for a time done well, but not after a time. You may have noticed this in fact quite often, and after a while the plant seems to have stopped growing. If you have such frames as I have spoken of you may place your plants in them to recuperate when you notice that they are not looking fresh and have poor roots; if you place them in such a shading they will be better. If they have roots one and one-half inches long you will be surprised to see how speedily you can set out such a plant, but if they must make new roots then the chances are very much against them. I will refer to strawberry culture from an experience of last year. I wanted to get some strawberries and I didn't feel like paying for potted plants, and sent to an Ohio man to get some of the newer kind of the Burke and Pearl. When they came I set them out in the frame, not in the plat. I do not feel as though I could carry on the garden without those frames. The plants were set quite thickly, not crowding, but set as close together as they could be without. I kept them shaded with the cloth frame and in about three weeks — I received them the first of July — they were ready to be transplanted. It was the worst dry time we had, but

planting them in this way enabled me to take care of the whole lot. I would not advise large planting in this way, but if anyone wishes to make a start with the new kinds it would be a good idea to follow out this plan. The same idea will apply to house plants. You can set them in this frame and they will take a new start. The weather may be against them and you will be surprised how much protection such a covering is. The covering is not down on the plants. In making a protection for the plants against frost you make a mistake when you have a cover rest on the plant. The plants are harmed more with a cover resting on them than they would be without any covering at all.

There is another thing occurred to me that I would like to refer to. You have been speaking of the value of mulching trees and shrubs. The plan is good if you don't allow the mulch to get hard and cake before you get it out. My practice in smaller plants (I handle a good many thousand during the season), is when I want to remove them I take the garden sprinkler, the ordinary sprinkler, and sprinkle the roots with this so they are damp, and when you lift them up you will see they are ready for planting. Sprinkle the water over them and then they can be carried without injury. mignonette and plants of that nature would do better to plant in the ground for they do not bear moving well, and it is better to plant them where wanted and thin out when they become too thick.

DISCUSSION.

Mrs. Smith — Mr. Toole has just said that mignonette should be planted in the ground because it won't transplant well. I have always thought so and have planted it in the place we wanted it. Last year my son planted mignonette in tubs or in cold frames and transplanted. They were quite large when he transplanted them and he cut off the tops. We thought they would not bloom, but after a time they grew and were a perfect mass of bloom. We never had them keep so fresh or so long in bloom and so perfect. It seemed as if the bloom grew larger and larger as the season passed by.

Mr. Toole — The cutting back where the roots were broken off is what saved them. When the roots are broken we should always cut the tops off as much as the roots are broken off. If we do not the branches and leaves will require more nourishment than the young roots can supply.

Mrs. Smith — The roots were not broken or cut off, prac-

tically all the roots were left on. At first they did not seem to start well, but one or two began to start after a little while and there was no more trouble. You have to sow a good deal of seed if you sow in the garden, and a small amount of the seed will furnish all the plants you want if sown in the frame. How far apart should pansy plants be set?

Mr. Toole — One foot apart. Some of mine are in rows eighteen inches apart.

Mrs. Smith — Should the colors be kept separate or will they mix?

Mr. Toole — I think there is considerable mixture if grown near together. But you can plant the pansy apart from other plants, and they will vary. They are very apt to vary from the original. If it were not so we could not have the varieties we do.

Mr. Harris — I am very glad there is a society to be organized in this county which is an outgrowth of the state society. I hope your society will prosper, and when we come to the meetings of that society we will see larger displays than we have heretofore had in the state society meetings by your help and the help of your society.

President Smith declared a recess to allow the citizens of Sparta the privilege of organizing a society.

Hon. M. A. Thayer was elected temporary chairman, who briefly stated the object of the meeting. Mr. T. G. Gould read a list of names as signatures to a constitution entitling them to a membership in the new society.

Officers were elected, and by vote the society adjourned to meet on the call of the president to further perfect the organization of The Sparta Horticultural Society.

President Smith resumed the chair.

Mr. Kellogg — I don't know whether we should congratulate ourselves on the new society formed here, but I think it is the best work this convention ever did, to help you in the organization. Our coming here, has, I suppose, given you this local organization, and we hope it will prove a success. I think wherever the state society helps organize a local society it is doing a good work.

Mr. Hoxie — There has been a very earnest correspondence between myself and Mr. Thayer. I will say the invitation from Mr. Thayer struck some of our members very forcibly. Our president was in favor of going to Oshkosh, but I insisted upon Sparta as the place for this meeting; they wanted to organize a society. I am glad we came. I thank you citizens of Sparta for your kindness and help in making this session of our meeting so pleasant.

Mr. Smith — I came out in the friendly contest with Mr. Hoxie as I usually do. When I get into a contest with any of the members of the state society I generally come out second best.

REPORTS OF COMMITTEES.

REPORT OF COMMITTEE ON FRUITS.

Best quart Warfield strawberry, four entries.

Geo. J. Kellogg, Janesville, first premium	$2 00
Geo. E. Hanchet, Sparta, second	1 00

Best quart Lida, three entries.

Isaac Gale & Son, Waukesha, first premium	$2 00
Geo. J. Kellogg, Janesville, second	1 00

Best Seedling not named, two entries.

Geo J. Kellogg, Janesville, first on No. 60. *Late*	$2 00
F. W. Loudon, second on No. 3. *Earliest*	1 00

Best quart, quality to rule, six entries.

Geo. J. Kellogg, Janesville, first premium, "Jessie."	$2 00
Geo. E. Hanchet, Sparta, second	1 00

Best market berry, five entries.

G. E. Hanchet, Sparta, first premium, "Warfield."	$2 00
M. A. Thayer, Sparta, second, "Warfield."	1 00

Largest single berry, four entries.

Geo. J. Kellogg, Janesville, first premium	$1 00

Best quart Wilson, five entries.

Geo. J. Kellogg, Janesville, first premium	$2 00
M. A. Thayer, Sparta, second	1 00

Best quart Crescent, five entries.

Geo. E. Hanchet, Sparta, first premium $2 00
M. A. Thayer, Sparta, second 1 00

Best quart Captain Jack, three entries.

Geo. E. Hanchet, Sparta, first premium $2 00
Geo. J. Kellogg, Janesville, second 1 00

Best quart Sharpless, one entry.

Isaac Gale & Son, Waukesha, first premium $2 00

Best quart Jessie, five entries.

M. A. Thayer, Sparta, first premium $2 00
Isaac Gale & Son, Waukesha, second 1 00

Best quart Jewell, two entries.

Geo. E. Hanchet, Sparta, first premium $2 00
Isaac Gale & Son, Waukesha, second 1 00

Best quart Bubach, three entries.

Geo. J. Kellogg, Janesville, first premium $2 00
Geo. E. Hanchet, Sparta, second 1 00

Best quart Jersey Queen, one entry.

Isaac Gale & Son, Waukesha, first premium $2 00

Best quart Manchester, five entries.

Geo. E. Hanchet, Sparta, first premium $2 00
Geo. J. Kellogg, Janesville, second 1 00

Best and largest display of Strawberries, four entries.

Geo. J. Kellogg, Janesville, first premium $3 00
Isaac Gale & Son, Waukesha, second 2 00
Coe & Converse, Ft. Atkinson, third 1 00

Best display plants in bearing, two entries.

Isaac Gale, Waukesha, first premium $2 00
Geo. J. Kellogg, Janesville, second 1 00

Best quart June Berries, one entry.

A. L. Hatch, Ithaca, first premium $1 00

Best quart Cherries, two entries.

A. L. Hatch, Ithaca, first premium $1 00
No second awarded.

Best quart Raspberries, two entries.

Geo. J. Kellogg, Janesville, first premium $1 00
A. L. Hatch, Ithaca, second, *growing on bush* 50

Best show of Currants, growing on bush, two entries.

Isaac Gale & Son, Waukesha, first premium $1 00
Geo. J. Kellogg, Janesville, second 50

Best show of Gooseberries, on bush, two entries.

Isaac Gale & Son, Waukesha, first premium $1 00
Geo. J. Kellogg, Janesville, second 50

The committee made award of $3.00 premium on twelve varieties of strawberries not on the list, and to Geo. P. Peffer, of Pewaukee, $2.00 on collection of apples, six varieties; to Coe & Converse, $1.00, for collection of strawberries, and to F. W. London for collection seedling strawberries award $3.00.

Apples — Best Willow Twig, one entry.

Charles Hirschinger, Baraboo, first premium $1 00
A. L. Hatch, Ithaca, made display of apples on limbs, no premium awarded.

Best plate Golden Russet.

Chas. Hirschinger, Baraboo, first premium $1 00

Best plate Red Romanite.

Chas. Hirschinger, Baraboo $1 00

Best plate Green Everlasting.

Chas. Hirschinger, Baraboo, first premium $1 00

Best plate Ben Davis.

Chas. Hirschinger, Baraboo, first premium $1 00

All of which is respectfully submitted,

DANIEL HUNTLEY,
WM. SPRINGER,
MRS. E. A. HOXIE,
Committee.

REPORT OF COMMITTEE ON PLANTS AND FLOWERS.

Mr. President — Your committee would report as follows:

Best collection of house Plants, two entries.

Mrs. T. G. Gould, Sparta, first premium $5 00
Mrs. M. T. Oster, Sparta, second 3 00

Best collection Fuchsias, two entries.

Mrs. M. P. Oster, Sparta, first premium $2 00
Miss Ida Baldwin, Sparta, second 1 00

Best single specimen Fuchsia, two entries.

Miss Ida Baldwin, Sparta, first premium $0 50
Mrs. M. P. Oster, Sparta, second 25

Best collection Geraniums in bloom, three entries.

Mrs. C. E. Hanchet, Sparta, first premium $2 00
Mrs. M. P. Oster, Sparta, second 1 00

Best collection Foliage Plants, two entries.

Mrs. T. G. Gould, sparta, first premium $1 00
Mrs. M. P. Oster, Sparta, second 50

Best display Begonias, two entries.

Mrs. M. P. Oster, Sparta, first premium $1 00
Mrs. T. G. Gould, Sparta, second 50

Best Heliotrope, one entry.

Mrs. T. G. Gould, Sparta, first premium $2 00

Best varieties of Pansies growing in pots.

F. A. Meissner, Cashton, first premium $1 00

Best specimen Begonia.

Mrs. M. T. Oster, Sparta, first premium $1 00

Your committee also find on exhibition a very fine collection of house plants in good variety, and showing skillful management by the growers, but unfortunately the ladies of the local society have been more earnest in making a good showing than in securing premiums. Special awards and mention of some exhibits would have been made if your committee could have learned the names of the owners.

Respectfully submitted,
WM. TOOLE,
A. I. GALE,
MRS. E. G. MARRIOTT,
Committee.

REPORT OF COMMITTEE ON CUT FLOWERS AND ROSES.

For best show of Pansies.

We find two entries and award Wm. Toole, of Baraboo, first premium $2 00
F. A. Meissner, Cashton, second 1 00

Best show Perennials.

F. A. Meissner, Cashton, second premium $1 00

Best basket Cut Flowers, two entries.

Mrs. Skillman, Sparta, first premium $2 00
Mrs. H. L. Childs, Sparta, second 1 00

Best Bouquet, two entries.

Mrs. Frances Stokes, Sparta, first premium $1 00
F. A. Meissner, Cashton, second 50

Best show of Roses not less than six varieties, there were six entries.

Geo. J. Kellogg, Janesville, first premium $3 00
Mrs. T. B. Tyler, Sparta, second 1 50

Best display Wild Ferns, two entries.

F. A. Meissner, Cashton, first premium $3 00
Mrs. C. E. Hanchet, Sparta, second 1 50

Best Fringed Petunia.

Wm. Toole, Baraboo, first premium $2 00

Best Wild Flowers, not less than six varieties, three entries.

F. A. Meissner, Cashton, first premium $3 00
Miss Ruth Hanchet, Sparta, second 1 50

Best bouquet Everlasting Flowers.

F. A. Meissner, Cashton, premium $0 50

Respectfully submitted,

A. L. HATCH,
MRS. VIE H. CAMPBELL,
MRS. J. M. SMITH,
Committee.

REPORT OF THE COMMITTEE ON RESOLUTIONS.

Resolved, That the Wisconsin State Horticultural Society is worthy of, and should be entitled to, so much of the respect of our railroad companies as to permit members and others to attend our meetings at reduced rates over their lines in Wisconsin.

Resolved, That we, the members of the Wisconsin State Horticultural Society, in convention assembled, do tender our thanks to the citizens of Sparta for their kindness and hospitality extended to us during this meeting. And especially do we thank the ladies for so beautifully decorating this hall with nature's productions, of plants and flowers. In this remembrance, we will not forget the music, and song, which has so enlivened the harmony of this meeting. May the voices of these singers ever blend with the song of birds and the rythm of flowers.

A. D. BARNES,
D. C. CONVERSE,
L. G. KELLOGG,
A. I. GALE,
Committee.

No further business appearing, the president declared the meeting adjourned *sine die*.

B. S. HOXIE,
Secretary.

TRANSACTIONS AND DISCUSSIONS

AT THE

ANNUAL MEETING

OF THE

Wisconsin State Horticultural Society

Held in Madison, February 3-7, 1890.

MONDAY AFTERNOON, February 3.

President Smith called to order and stated that as much business would crowd our work at this session, it would be well to do some preliminary work, such as appointing committees, etc.

Mr. A. L. Hatch suggested that exhibitors hand their ballots to the secretary, stating their preference for judges.

Ballots were so deposited, and the secretary declared Werden Reynolds, J. M. Edwards and R. J. Coe, as committee on Award of Premiums on Fruit.

President Smith appointed Geo. J. Kellogg, Isaac Gale and A. L. Hatch, as committee on Resolutions; G. J. Kellogg, J. M. Edwards and Charles Hirschinger, committee on Revision of Fruit List; M. A. Thayer, Mrs. Vie H. Campbell and Mrs. A. L. Hatch, committee on Paintings.

The chair announced adjournment to 7:30 for evening session, and that the subject for the evening would be Local Experimental Stations, "How to Provide and Care For."

EVENING SESSION.

President Smith in the chair.

Secretary Hoxie stated that at the meeting during the time of the State Fair, President Smith and B. S. Hoxie

were designated as a committee to act in conjunction with Profs. Goff and Henry, relating to local experimental stations. That committee convened in Madison, November 5th, and decided that it was thought best for the interest of horticulture that we have four local experimental stations in the state as a beginning for such work, provided plans could be matured at this annual meeting to carry on such stations. Prof. Henry, as Director of the Experimental Station at Madison, would allow Prof. Goff to take charge of such local stations, if established, and provide for his necessary expenses in so doing; but further than this he could not promise at present.

President Smith spoke of the value and importance of local experimental work, and the great necessity for it in our state where such differences of soil and climate exist.

Mr. Tuttle had always been in favor of local experimental stations; had been an experimenter all his life, and had spent hundreds of dollars in testing new varieties of fruits. These stations could be conducted without much expense to the society. He would be willing for one to furnish such varieties of apples as he had free of cost for such a purpose, and he knew of other nurserymen who would do the same.

Mr. A. L. Hatch spoke of experimental work which had been done at his place the past season under the direction of Prof. Goff, provided for by the department at Washington. And though that work was mainly experiment for the prevention of apple scab, there was no limit to experimental work.

Prof. Goff mentioned that he had corresponded with parties in Iowa and Minnesota, who had such work in charge, and spoke somewhat in detail of the work, also the advantages, and some of the disadvantages resulting to the experimenters on whose farms the stations were located.

The discussion finally resolved into a motion that the president appoint a committee of three, himself being *ex-officio* chairman, whose duty it should be, in connection with Profs. Goff and Henry, to fully mature and complete

all necessary plans with such needed specifications between the parties selected, to carry on the work and the society.

The chair appointed as such committee B. S. Hoxie and B. F. Adams.

HORTICULTURAL ROOM,
TUESDAY MORNING, February 4.

President Smith in the chair.

Mr. Harris, of La Crescent, Minn., reported that the annual meeting of their society held the week previous, was one of the best they had ever held, and regretted that the Wisconsin society was not represented. The chair remarked that this society, by a vote two years ago, had decided not to send delegates to other societies. Mr. Tuttle thought it was well to send delegates to some of the state societies and pay their expenses; spoke of a committee from the Illinois state society visiting his grounds last fall, looking up new Russians and Seedling apples; he again urged the necessity of local experimental stations, so that men coming from other states would know where to find what we had that was valuable. Mr. Kellogg said he was one who voted not to send delegates to other societies, but yet was willing to acknowledge the importance of sending delegates to kindred societies. Northern Illinois and the southern portion of our state was nearly identical, and of course their interests were the same in fruit culture. He moved that we send delegates to Minnesota, Iowa, Illinois and South Dakota. This motion was concurred in, and the president was so instructed.

Question from Program — If grapes are to be planted on quick soil with sunny exposure, shall they be retarded in spring to prevent frost?

Mr. Tuttle, of Baraboo, would not let grapes start under the mulch, and so with all kinds of small fruit which needed protection.

Mr. A. L. Hatch, of Ithaca, would uncover late, even after the buds had swolen.

Mr. Kellogg would uncover early before the buds had started.

Mr. Harris, of Minnesota, would uncover as soon as he could get the earth off in the spring; prefers to cover with earth; but would keep the roots well covered or mulched; in that case the buds would start slowly.

Mr. G. Sale, of Waukesha, would uncover after the buds had swolen, but would not tie up to trellis until later.

Mr. Harris thinks that if vines were tied up to trellis they would often escape the frost which would damage the tender buds if the vine was on the ground.

Mr. Edwards, of Ft. Atkinson, would uncover late even when the growth was well started; has had best success by so doing. Would advance the growth by pinching back, and good cultivation.

J. M. Smith, of Green Bay, has learned by sad experience with him, that it is better to leave the covering on until late, and mentioned that he ruined a patch of raspberries by uncovering early.

Mr. Hoxie mentioned the fact that raspberry bushes in his own garden which were uncovered early did not make so good a crop as those without any protection.

Mr. Tuttle would have his vines in the open air as soon as possible, but would keep mulch around the roots—prefers straw or marsh hay to dirt covering; if was sure that the mercury would not go lower than ten degrees below zero would never cover grapes.

The sentiment was concurred in, that three or more stakes to the hill was the best kind of trellis so as to cultivate both ways; it also gives a better circulation of air, thus preventing mildew and grape rot.

Mr. Harris said he was never troubled with grape rot.

Mr. Tuttle thinks grape rot will always result from wet seasons, our late dry seasons have been favorable to grapes.

Mr. Hatch concurred in this testimony.

Questions from Program—Can crops of small fruits be grown successively on the same ground?

Mr. Kellogg—No.

Mr. Tuttle—With proper fertilizers, Yes.

Mr. Hatch with black raspberries, thinks five or six years on same plantation is all right; the probable life of

raspberries is six or seven years. Black raspberries will not stand as long as red. Cuthbert is the best in this respect

Mr. Smith would have only one crop of strawberries on the same ground without rotation; raspberries will stand six or eight years. I always give winter protection to strawberries and raspberries.

Question — What do you cover with ?

A. — Marsh hay, generally.

Q. — Do you loosen the earth on one side ?

A. — Yes, when covering with dirt; with hay or straw it is not necessary.

Committee on Revision of Premium List for State Fair made their report, which, after some discussion and amendment, was adopted and passed over to the Secretary of State Agricultural Society, T. L. Newton.

HORTICULTURAL ROOM,

TUESDAY, 2 o'clock P. M.

Journal continued: President Smith on calling to order stated that this was the time specified on our program for election of officers, and called for reports of secretary and treasurer, which were read and referred to the Finance committee.

REPORT OF SECRETARY.

Mr. President and Members of the Wisconsin State Horticultural Society:

Our by-laws make it imperative that your secretary give you a detailed report of the affairs of this society at the annual meeting.

The past winter of 1889 was of unusual mildness, so much so that tender varieties, even, of fruit trees and shrubs came through in good order where they were not protected; but in many localities the late frosts damaged the crop of strawberries from twenty-five to seventy-five per cent. Other kinds of fruit was quite up to the average standard of excellence in quantity and quality, except in grapes. The entire months of August and September were cold, making this crop late and of poorer quality; consequently the usual exhibition at our State Fair was not quite up to its standard of excellence in quantity or quality.

SUMMER MEETING.

Our summer meeting was held at Sparta, June 19th and 20th, and was attended by delegates from nearly every county and local society in the state, and orders were drawn on the treasurer to pay the necessary expenses of such delegates. We believe that the cause of horticulture in our state was advanced thereby and should result in an increased interest in the affairs of the state society and the work of horticulture.

Whether this departure from the established usage of this society shall be a precedent for furture meetings you who are interested must decide.

I have drawn orders on the treasurer to the amount of $1,191.39, showing that our expenses for the society have been somewhat in excess of last year. We have had more than the usual number of calls from local societies for assistance which have bee n responded to by the president, calling on such help as was demanded.

LIBRARY ROOM.

Last year I reported that we had room No. 27 set apart by the governor for our use as a library room, but not feeling safe with this tenure, I authorized a joint resolution to be offered by our member of the legislature, Hon. M. V. Pratt, securing to us the room in a more legal way.

The resolution was referred to the proper committee, who reported adversely to the measure, and I was so notified. I immediately requested a recommitment of the resolution, and appeared before the committee with sufficient reasons why our society should be in *permanent* possession of the room. The committee then reported on the adoption of the resolution, which after some debate, was concurred in. So, for the first time in the history of our society, we are safely in the possession of a room suitable for our library, for many years to come.

BOOKS AND BINDING PAPERS.

By vote of the society your secretary was instructed to have such volumes bound as were thought best, for permanent use in the library. I have had a dozen or more books bound in cheap but substantial binding, and there are other volumes of exchanges which must be put in the same condition. Besides these I have at my own expense, stitched and bound in paper covers, ten or fifteen volumes of agricultural papers, for the years of 1888–89. As a useful history of current events and progress of the times they will in after years be of much value. Some of those papers have been sent to me for a number of years, while others no doubt are sent as exchanges to the society, to the publishers of which I tender my own and the thanks of the society. In this connection I wish to again urge the importance of adding some standard works on horticulture to our library. A small sum set apart every year would soon put us in possession of some books which are really needed by our horticulturists as works for reference,

to which they could be loaned for a sum sufficient at least to pay their transportation.

PROFESSOR OF HORTICULTURE.

Since our last annual meeting Prof. E. S. Goff has taken charge in the department horticulture at the experimental station, and I have found him a willing worker in whatever pertains to the interest of this society, as well as to advance the cause of horticulture in our state.

This needed assistance should give us greater prominence, and a promise of better results in our investigations into the laws which govern vegetable and plant life. His experiments conducted by request of the department at "Hill Crest Fruit Farm" of A. L. Hatch, for the prevention of apple scab during the past summer will be reported on at this meeting.

EXPERIMENTAL STATION.

The committee appointed last fall at the State Fair meeting to confer with Professors Goff and Henry with reference to local experimental stations, were convened in Madison early in November, and we decided to request Mr. Springer, Mr. A. L. Hatch, Mr. A. J. Phillips, and Geo. Robbins to take charge of such work under the direction of Prof. Goff. I opened a correspondence with those gentlemen, stating our request, with the hope that at this meeting plans might be matured so that we should be able to make a beginning in this work so much needed in our state. Since then, by correspondence and conversation with Prof. Goff, we have tried to get at some points to lay before you, and he will present something more definite for your consideration. It is possible that we may not be able to establish more than two or three this year as there are many obstacles to overcome in order to get the work well established.

It seems best that these stations should be under the control of the state society and the direction of the professor of horticulture.

As our funds are necessarily limited we must work within our means. I would therefore advise a special committee of three, of which our president shall be chairman, to act in conjunction with Professors Goff and Henry, whose duty it shall be to plan the work under specified rules, which shall be in the nature of a contract between the parties selected to care for the stations and the State Horticultural Society.

DISTRIBUTION OF VOLUMES.

The committee on legislation made enquiry and research into the matter of expense in sending out our reports to local societies, and we found that it needed no special enactment. The statute under the proper construction, gave us the same privalege as that conferred on the State Agricultural society, and the several local societies have this year received their quota of volumes without expense to this society.

COMPETITIVE PRIZES.

The plan drawn up by the secretary and submitted to the sxecutive board at our summer meeting for competitive prizes. 1st, "Native Trees and Shrubs of Wisconsin." 2d, "Wild Plants of Wisconsin." 3d, "School Grounds," with specifications governing the contest, were published in a large number of our state papers and all of the agricultural papers published in Chicago. Some of these papers called special attention to the value of this contest to the society and the students of our high schools; as the age of the contestants was restricted to twenty-one years and under. Letters of inquiry and the correspondence conducted under this office in the prize contests, shows the interest in the work. The manuscripts and specimens, etc., required, were submitted to a committee of three, consisting of Prof. Jacobs, Mrs. Vie H. Campbell, and Miss Lizzie Gillies, who carefully performed the task assigned them, and made report of their work, which is herewith submitted.

Prize No. 1 was awarded to Miss Nora Adams, Evansville, and No. 2 to Miss Dora Haviland of Janesville, No. 3, no prize was awarded.

I think the interest manifested in this contest will fully warrant a further continuation of this method in awakening an interest in the work of horticulture among the young people of our state.

NEW FORM OF BLANKS FOR REPORTS.

The reports submitted by the committee on Observation in some respects do not come up to what this society requires at the present day. The old members of the committee find it to be quite difficult to report under the same headings year after year, consequently some of them fail to report, and new ones appointed fail to comprehend the matter, or from a dislike to write, we do not get their reports. I would, therefore, advise that your secretary, after consulting with Prof. Goff, prepare a new set of blanks which shall be in the form of questions requiring definite answers, and that these be sent to such persons as will probably give attention to the matter sufficient to report to this office.

STATE LAW RELATING TO OUR REPORTS.

I very much regret that the last volume of our transactions was so much delayed in reaching you. The matter was all prepared in March last, and a promise from the state printers that they could get it out in a few weeks, but an unexpected amount of state printing prevented. Then the law was changed just at the close of the session cutting down the number of pages just one-third, consequently the work had to be all gone over the second time in order to reduce it to two hundred and fifty pages; which additional number was granted by a formal request from the commissioners of public printing. I can, however, see nothing in the law preventing the use of finer type for a portion of the work, and I hope my successor will so un-

derstand it, and so publish it, unless forbidden by higher authority. This change in the law crowded out much valuable matter intended for the volume and especially the transactions of the Bee-Keeper's Association.

MORTUARY.

Since our last meeting I have to record the death of that eminent horticulturist, Peter Henderson, who died at his residence in Brooklyn, December 17, 1889. Mr. Henderson was a specialist in rose culture.

But it becomes my sad duty to inform you of the death of our brother and co-worker, Samuel Hunt of Evansville, who was buried from his late home last Tuesday, January 28. I have been intimately acquainted with Mr. Hunt for the past twenty years, and five years just passed, have lived a near neighbor to him. If he had faults they were so covered up with christian virtues that he had no enimies.

In closing this report I must thank the members of this society for kindness and co-operation in our work, the officers of other state societies for courtesies, and a spirit of manifest fraternity extended, and also to the press of the state, as well as those out side of our state for honoring all requests made upon them ingiving publicity to our meetings; and in other ways helping to advance the cause of horticulture. Trusting that the business of this annual meeting may be well and harmoniously transacted.

I submit this report for your consideration.

B. S. HOXIE,
Secretary Wis. Hort. Soc.

The following is the financial report of the secretary and treasurer:

Wisconsin State Horticultural Society, to B. S. Hoxie, Secretary:

Dr.

Postage	$27 50	
Express account	17 67	
Printing and stationery	19 00	
Binding books	5 50	
Miscellaneous	18 02	
	87 69	
Salary	300 00	
		$387 69

Cr.

Received on salary	$225 00	
Received on expense account	79 71	
Balance due on account	7 98	
Balance due on salary	75 00	
		$387 69

To the Officers and Members of the Wisconsin State Horticultural Society:

Your treasurer submits the following report:

Feb. 6, 1889,	Received of former treasurer	$801 94
	Received of secretary, membership dues	68 32
July 11, 1889,	Received of state treasurer	500 00
	Received of Mrs. Ida E. Tilson, on account of life membership	10 00
	Total from all sources	$1,380 26
Total disbursements		$1,191 39
Amount on hand		188 87
		$1,380 26

Respectfully submitted,

VIE H. CAMPBELL,

Treasnrer.

February 4, 1890.

TREASURER'S REPORT.

DISBURSEMENTS.

Voucher No.	6.	Hirschinger, Chas., premiums	$39 50
	7.	Order destroyed	....
	8.	Hirschinger, Chas., premium	1 50
	9.	Jeffrey, Geo. premiums	20 00
	10.	Peffer, Geo. P., premiums and service at New Orleans	107 50
	11.	Peffer, Geo. P., premiums	12 00
	12.	Tuttle, A. G., premiums	9 00
	13.	Chappel, F. H., premiums	14 00
	14.	Wilcox, E., premiums	3 00
	15.	Haines, Geo. H., premium	1 50
	16.	Kellogg, Geo. J., premiums	9 00
	17.	Hoxie, B. S., money due on sec. salary	57 38
	18.	Smith, J. M., incidental expenses	25 00
	19.	Anderson, Matt., services as treasurer	25 00
	20.	Phillips, A. J., delegate to Minnesota	6 00
	21.	Peffer, Geo. P., premiums	7 50
	22.	Jeffrey, Geo., premiums	7 50
	23.	Smith, J. M., expenses at annual meeting	2 00
	24.	Peffer, Geo. P., expenses at annual meeting	5 00
	25.	Phillips, A. J., board of self and Mr. Harris	8 50
	26.	Kellogg, Geo. J., premiums and expenses at annual meeting	11 10

Voucher No.	27.	Anderson, Matt., expenses at annual meeting	$7 00
	28.	Ozanne, James, premiums	8 00
	29.	Reynolds, Werden, expenses at annual meeting	3 25
	30.	Henwood, V. A., services as watchman	8 00
	31.	Hoxie, B. S., boarding members at Hotel Ogden	29 00
	32.	Palmer, N. N., premium	1 50
	33.	Currie, Jas., expenses to Baraboo convention	7 10
	34.	Campbell, Vie H., expenses to Baraboo convention	4 31
	35.	Hoxie, B. S., expenses as per bills	20 63
	36.	Tuthill, Mrs. Emma, reporting and transcribing	19 90
	37.	Smith, J. M., expenses to Evansville to arrange for summer meeting	4 61
	38.	Hoxie, B. S., secretary's salary	75 00
	39.	Hoxie, B. S., expense account	21 08
	40.	Barnes, A. D., delegate's expenses to Sparta convention	7 47
	41.	Harris, J. S., expenses to Sparta convention	1 78
	42.	Toole, Wm., expense of self and Mrs. Marriott, delegates to Sparta	8 52
	43.	Hirschinger, Chas., expenses as delegate	4 26
	44.	Kellogg, L. G., expenses as delegate	10 63
	45.	Kellogg, Geo. J., expenses as delegate	10 36
	46.	Peffer, Geo. P., expenses as delegate	10 83
	47.	Gibson, Hollis, expenses as delegate	7 67
	48.	Springer, Wm. A., expenses as delegate	7 67
	49.	Goff, Prof. E. S., expenses to Sparta	7 48
	50.	Meissner, F. A., on account of premiums	10 00
	51.	Toole, Wm	4 00
	52.	Hanchett, Miss Ruth, on account of premiums	1 50
	53.	Childs, Mrs. A L., on account of premiums	2 00
	54.	Stokes, Mrs. Frances, on account of premiums	1 00
	55.	Kellogg, Geo. J., on account of premiums	3 00
	56.	Tyler, Mrs. T. B., on account of premiums	1 50
	57.	Hanchett, Mrs. C. E., on account of premiums	1 50
	58.	Converse, D. C., delegate's expenses and premiums	9 40

Voucher No. 59.	Gale, Isaac, & Son, on account of premiums	$10	00
60.	Kellogg, Geo. J., on account of premiums.	23	00
61.	Thayer, M. A., on account of premiums....	4	00
62.	Huntley, D., expenses as delegate to Sparta	17	12
63.	Loudon, F. W., on account of premiums..	3	00
64.	Tuthill, Mrs. E. M., attendance as reporter.	6	48
65.	Hanchett, Geo., on account of premiums..	13	00
66.	Order destroyed.....		
67.	Baldwin, Ida, on account of premiums....	2	50
68.	Oster, Mrs. M. T., on account of premiums.	8	25
69.	Gould, Mrs. T. G., on account of premiums.	8	50
70.	Hatch, A. L., on account of premiums.....	3	50
71.	Hatch, A. L., expenses as delegate to Sparta	5	50
72.	Hirschinger, Chas., on account of premiums	4	50
73.	Smith, J. M., expenses of self, wife and Mrs. Neville, to Sparta convention.....	57	00
74.	Skillman, Mrs. J. R., on account of premiums.....	1	00
75.	Tuthill, Mrs. E. M., for reporting.....	10	00
76.	Campbell, Vie H., expenses to Sparta.....	7	82
77.	Hoxie, B. S., expenses to Sparta.....	15	76
78.	Stokes, Mrs. Frances, on account of premium.....	1	00
79.	Chamberlain, C. V., boarding members at Sparta convention.....	58	00
80.	Campbell, Vie H., expenses to Green Bay..	11	17
81.	Smith, Mr. and Mrs. J. M., expenses to Waupaca convention.....	8	00
82.	Huntley, Mrs. D. E., expenses to Green Bay	1	65
83.	Hoxie, B. S., expenses to Appleton.....	5	25
84.	Stickney, J. S., expenses to Sparta.....	10	10
85.	Hoxie, B. S., secretary, salary.....	75	00
86.	Hoxie, B. S,, expenses of office.....	18	00
87.	Hoxie, B. S., secretary, salary.....	75	00
88.	Smith, J. M., expenses to Madison.....	13	00
89.	Campbell, Vie H., expenses to Madison	2	36
90.	Hoxie, B. S., expense account.....	20	00
Total disbursements to Feb. 3, 1890.....		$1,191	39
Amount on hand Feb. 3, 1890.....		$188	87

VIE H. CAMPBELL,
Treasurer.

The chair appointed Wm. Toole and D. C. Converse as tellers, to assist the secretary in canvassing the votes. Informal ballot for president resulted in 23 votes, of which J. M. Smith received 13, M. A. Thayer, 3, and five scattering. G. J. Kellogg moved to make the ballot formal, and that Mr. Smith be declared elected. Motion adopted, and he was declared elected president for the ensuing year. Mr. Smith thanked the society for this continued expression of their approbation, and he should continue to work for the best interest of the society and for the horticulture of Wisconsin.

Informal vote for vice president: Whole number of votes cast, 24; M. A. Thayer received 17, B. F. Adams, 6, and A. L. Hatch, 1. On motion, the ballot was made formal and Mr. Thayer was declared duly elected vice president for the ensuing year. Mr. Thayer thanked the members for the vote, and inasmuch as the office was an honorary one, as we had a president who was both able and willing to do the work, he would accept the position assigned him. Informal ballot for secretary resulted in 23 votes, of which B. S. Hoxie received 13; E. S. Goff, 9; A. L. Hatch, 1. On motion of Mr. Goff the ballot was made formal, and B. S. Hoxie was declared elected secretary for the ensuing year. By vote of the society the secretary was instructed to deposit the ballot for Mrs. Vie H. Campbell for treasurer, and A. L. Hatch for recording secretary. The ballot was so deposited and they were declared duly elected. The Executive committee by election consists of Geo. J. Kellogg, C. H. Hamilton, Geo. H. Robbins, James Currie, J. M. Edwards, Daniel Huntley, C. A. Hatch, Wm. Toole and Wm. Springer.

A. L. Hatch read a letter from Prof. H. E. Van Deman, pomologist in the department at Washington, expressing regrets of his inability to be with us at this meeting; that the division was at our service in any manner within his power, to promote horticulture. He also expressed a hope that some of the fund now devoted to the purchase of flower and vegetable seeds would be set apart for the purchase of, and distribution, of plants, trees, scions and cuttings of fruit.

Mr. J. S. Harris offered the following resolution:

Resolved, That the president appoint a standing committee of three to act and co-operate with a like committee of kindred associations, to bring about, if possible, lower express and freight rates on the transportation of horticultural products, to and from market. Resolution was adopted, and J. M. Smith, B. S. Hoxie and Geo. J. Kellogg was appointed said committee.

DISCUSSION ON QUESTIONS RESUMED.

Question from Program—Have we any wild plums worthy of cultivating and propagating?

Mr. Harris says they have in Minnesota several varieties worthy of cultivation, and mentioned the Cheney as one of them, and stated that specimens of the fruit were on exhibition in the fruit room.

Prof. Goff stated that he was very much interested in experimenting with the wild plums as well as other wild fruit bearing trees and shrubs.

Mr. Wood does not favor efforts to civilize wild plums.

Mr. Peffer thinks we may get good varieties; has five kinds on his own grounds. Considers the Early Stone the best.

Mr. Hatch had considerable experience in this direction, but with him the wild plums had been a failure.

Question—Which is the most profitable currant for the farmer to grow?

Mr. Smith—The Long Bunch Holland and Prince Albert are the best for jelly.

It was the concurrent opinion of the members that Red Dutch, White Dutch and White Grape, under all conditions, were the best.

Question—Have we any new varieties of apples worthy of cultivation and propagation?

Mr. Harris mentioned a seedling which originated with Mr. Wicox, of La Crosse, which he considers worthy of extended trial.

Mr. O. F. Brand, of Minnesota, mentioned an apple that originated in cold Minnesota, called the Peerless, which he thinks is very valuable in all the qualities for a long keeping winter apple.

Other new varieties were mentioned, and by vote of the society were placed in a special list for trial.

Question—What is the duty of the State Horticultural Society in relation to introducing or recommending new fruits?

Mr. Tuttle thought no fruit should be recommended until thoroughly tested by experimental stations, and that none should be recommended by the society until it has been so tested.

Mr. Kellogg coincided with the same; but we should hunt up new fruits for the purpose of having them tested.

Mr. Hirschinger could not wait for experimental stations, and so had been testing for the last thirty years resulting in quite as many failures as successes.

Question—Is there anything new to be said on the Russian varieties?

While some of the members spoke of the great tendency of the Russians to blight, Mr. Jeffery, of Milwaukee, said that his trees were doing finely and carried healthy foliage.

Mr. Chappel reported that the Pewaukee, with him, blighted worse than any other variety; thinks we force our trees too much which causes blight.

Isaac Gale, of Waukesha, said his trees were in good condition without blight, and on land rich enough to produce one hundred bushels of corn per acre.

HORTICULTURAL ROOM,
WEDNESDAY MORNING.

Question: What is the cost of raising one thousand quarts of strawberries, and can one thousand quarts of blackberries be grown as easily as the same amount of strawberries?

Mr. Smith said the cost in labor, fertilizers, boxes, picking, etc., for an acre is about $100 for an average of 250 bushels.

Mr. Adams thinks strawberries can be produced for three and one-half cents per quart.

Mr. Harris says he can raise strawberries for three cents per quart, while farmers generally pay from eight to ten cents or go without.

Mr. Thayer says it cost him $100 per acre the first year for his plantation of strawberries, raspberries and blackberries, which included stakes and wire for blackberries. The cost of manure would depend on the condition of the land before plants were set. The annual outlay after the first year would as a matter of course, be much less, and he believes for a term of years "he can raise more strawberries than blackberries at the same cost, but that the blackberries so raised would bring more money."

Mr. Coe thinks that blackberries can be grown as easily as strawberries, and for a term of years would be the most profitable.

Mr. Kellogg was of the same opinion.

Mr. Harris can grow blackberries cheaper than strawberries on the right kind of soil.

Mr. Hatch thinks there is not much differance in cost and expense; would grow both, but for a short term of years strawberries would be most profitable.

Mr. Tuttle thinks that with him blackberries are just as liable to be killed with frost as strawberries.

Mr. Kellogg — "On my place blackberries are not subject to frost, while strawberries are sometimes very much injured.

Question — Have any of our members succeeded in raising peaches by laying down and covering the trees for winter protection?

Mr. Tuttle had peach trees last winter which came through all right, and were looking well at the present time; protect with corn stalks around the trees. If such winters as the present could be insured for Wisconsin we would need no winter protection for peach trees. Mr. Harris said that Peter Gideon, of Minnesota, had succeeded in raising peaches by setting his trees on a ridge or mound, and so dividing the roots that the trees could be easily tipped over in the fall and then covered with earth or mulch.

Prof. Goff stated that whatever was used for protection

we must guard against the injury from mice, which were very destructive to peach trees where mulching was used.

Mr. E. Wilcox, of La Crosse, not being able to attend the meeting, sent the following paper, which was read by the secretary.

TOP WORKING THE STANDARD APPLE ON CRAB STOCK.

Mr. President and Members of the Wisconsin State Horticultural Society:

GENTLEMEN — I am annoyed a good deal by being called upon to answer letters of inquiry about my experience in top working the standard apple on crabs, mostly Transcendents. As I am getting old, now nearly seventy-eight years, and having had a stroke of apoplexy three years ago, it has left my physical condition so that writing is a great task. I have, therefore, taken this opportunity to note down a few points and facts in my experience, which if published, will I trust, save me from further annoyance on this subject.

In one of the reports of the Minnesota Horticultural Society the question was asked: Has anyone ever known the roots of apple trees to be killed by freezing? Mr. Fuller, yes. Mr. Pierce, I think not. The society took a recess, and that ended so far as I have seen, all further discussion on the question.

The winter of 1872–73 killed about 60,000 trees in our nursery at Trempealeau, Wis., and about 1,000 in our orchard by root killing. When I learned the condition of the nursery and orchard I wrote to a friend of great experience in Wisconsin, stating the above facts. He replied, of course there is no help for the nursery, but the orchard can be saved by thinning out the branches and heading back those that are left. I gave a neighbor who had a larger orchard than mine, this information, and we both went to work for a number of weeks following instructions — no use. The orchard was past redemption. Even Transcendent crabs were root killed. The winter of 1874–75 was so destructive at South Haven, Mich., the Pomological society at that place appointed a committee consisting of A. T. Linderman, A. S. Dyckman and J. S. Linderman. This committee sent out circulars with eleven questions. These were answered by individuals from Geneva, N. Y., to Warsaw, Ill., all admitting destruction by root killing. I do not think it necessary to write out the questions or answers. I will, however, give extracts from a few.

P. Barry, Rochester, N. Y. — Instances rare of trouble of this kind. One winter, some twenty years ago, and last winter, the only instance in thirty-five years. In both instances the winters were not remarkable for their low temperature, but for their long continued much wind and little snow. The injuries were all sustained on elevated spots where the wind blew off the snow, leaving the ground exposed to frost.

From D. R. Waters, Spring Lake, Mich.—I am of the opinion that trees on dry soil suffered most. Trees were not generally favored with a covering of snow. All root-killed trees leaved out, and some of them, especially on ridges, blossomed when the same variety of uninjured were blossomless the same season, but the injured trees soon withered. In conclusion, I will call your attention to an experience in planting an orcheard that my friend, Thomas Petty, Esq., has had in purchasing trees for an orchard four years ago; he was imposed upon inasmuch that he received and planted as a valuable variety of the peach, fifty almond trees. During the four years these trees have stood in the ground he has found but two borers, although they have been hunted twice a year in common with his other trees, and although the peach trees all around these fifty trees have been root killed not one of these almond trees has suffered. As a remedy against root killing and also borers, does not this experience suggest to nurserymen that it might be valuable to bud the peach on the almond stock, and would this not also be another guard against the yellows. Now this writer has gone back to the origin of the peach and given some valuable suggestions. I propose to go back to the origin of the apple and follow with my experience in propagating it. (From Downing.) Transplanted into a warmer aspect, stimulated by a richer soil, reared from selected seeds, carefully pruned, sheltered and watched, by slow degrees the sour and bitter crab expands into a Golden Pippin. The wild pear loses its thorns and becomes a Bergamot or a Beurre, the almond is deprived of its bitterness, and the dry and flavorless peach is at length a tempting and delicious fruit. Now in producing such great changes in these fruits is it not reasonable to suppose the trees have been weakened and their vitality destroyed?

After the destruction of our orchard and nursery in 1872–3, which was grown in the usual way by grafting on the common apple roots, and seeing how well crab seedlings survived on their own roots, we adopted the following plan: Plant crab seeds and then graft the Transcendent crab in the roots of the crab seedlings, and when these trees were three years old bud the variety of standard apple we wished to grow into the limbs of the Transcendent.

We made this plan public and met with a good deal of ridicule from nursery men generally. That old veteran, Charles Hamilton, of Ripon, wrote me saying: "Your hobby will row you up Salt river." Trees propagated in the way you propose will be worth at least $1.00 each by the hundred in the nursery. Well, although we offered these trees for fifty cents each yet the prejudice was so strong against us that we could not sell them and I have been exploring the head waters of Salt river ever since, and have found no safe financial anchorage yet, while the tree peddler has found fresher waters and greener pastures with greener victims. Now we were partly right about our hobby for experience, has shown us that some varieties are failures when worked on Transcendent, and Mr. Kellogg's

plan is unsafe to follow in full; the Duchess, Red Astrachan, Tetofski, Utter and Willow Twig are failures when budded on Transcendent; Plumb's Cider, Haas, Wealthy and Pewaukee, are a tolerable success. McMahan's White and a number of seedlings are entirely so. Will send you some of these seedlings for your winter meeting. Many of the trees in our orchard are topworked on Transcendent. Now, if I was a young man, with the experience we have had, I would plant the seeds of the hardiest kinds we know of, mostly crabs; when they were old enough, say three years, would bud into the limbs the kinds I wished to propagate, not using limbs more than one-fourth inch in diameter; for instance, take Fameuse, note carefully the tree in which the union is perfect, growth good, etc., then take scions from this tree, graft into the roots of seedlings above described, and I think success will follow. I would pursue the same course with all others. With me I would not topwork Duchess. Peach apple, Tetofski, they stand anyway; and here let me say that orchards can be grown as they used to be if common sense is used.

The first orchard planted here was in new land well prepared. Now a few trees are occasionally set, obtained perhaps from the tree peddler, grown at Rochester, N. Y. They are set in a shiftless manner, where trees have failed in the sod, and where cattle, horses, and hogs are pastured, so that nothing be lost, except the fruit trees. Then the old story is told, Can't raise apples here. I went to our State Fair last year and I believe there was nothing on exhibition west of Sauk county in the fruit line, cranberries excepted, except the show made by A. J. Phillips, and myself. Years ago I have seen some as fine Northern Spy, Bailey Sweet, Utter, St. Lawrence, Fameuse, and many other kinds as I ever saw grown in this section of Minnesota and Wisconsin. While I would not advise the setting of most of these kinds, we have many varieties which I would advise people to set. And there are hundreds of places, yes, thousands along the bluffs of the Mississippi, just as good as A. J. Phillips and I have got. We have shown the public that we can raise apples. Go thou and do likewise.

ASSEMBLY CHAMBER.

TUESDAY EVENING, FEB. 4.

Presidents of the several state societies addressed the convention. The following is the address of President Smith:

Mr. President, Ladies and Gentlemen — In the old Scottish histories we read of the gatherings of their clans for consultation, but they were almost invariably in connection with wars, either among themselves or against their English neighbors, against whom, in those days, they seemed to breathe only vengeance and destruction. So do we, year after year, come together in this beautiful capitol of our state. The men who are devoted

to general farming, the dairymen, the beef growers, the swine and sheep breeders, the horsemen and the horticulturists, all mingle together and greet each other with cheerful voices, as they clasp friendly hands, and ask if all is well. No blare of drums or trumpets, no cannon's roar or any sign of war or discord is to be seen or heard. Our councils are all for peace. But though our views may differ in many cases, it is only a peaceful contest, and we are all striving to reach the same end, viz.: Enjoyment along the way, and happiness and prosperity for ourselves and families when we shall have reached a given point.

RESULTS OF THE PAST YEAR.

The last year has not been marked by as complete financial success as we had hoped for, and many of us believed might reasonably be expected to crown our efforts. Prices of farm and garden produce have, as a rule, been very low, in many cases almost ruinously so. In my own case there has been no time within the last thirty years when it has taken so large a proportion of my crops to pay for the hired help as within the last year. Yet none of us wish to see the laborers of our country reduced to wages that will prohibit them from enjoying a comfortable living and laying aside something for the future, provided they are industrious and economical. What, then, is to be done? I know of but one remedy.

HOW TO MAKE A PROFIT.

Very large crops have paid a moderate profit, while moderate or small ones have often failed to pay expenses. As most of my crops have been large, the final result of the year's work may be summed up about as follows: We have had a good living and our receipts will be sufficient to pay all expenses, pay for some improvements, give something to spare for the poor and needy around us, and yet have a balance upon the right side of the ledger. Though disappointingly small, still such is the result. Now I ask, is not this substantially the result with our wide awake cultivators all over the state? If this is so, have we any cause for complaint? Shall we not rather take new courage, and determine to cultivate better in the future than in the past?

SUCCESS OF SMALL FRUITS.

In the culture of strawberries, raspberries, blackberries and currants, it may safely be said that no state in the Union can excel our own. In fact, I konw of no portion of the United States which I believe can show as large an average yield of strawberries per acre, for the last twenty years, as Northeastern Wisconsin. I am not certain but that the same can be said in regard to blackberries and raspberries. Currants need only reasonable care in order to make the crop almost as certain as summers and winters are to follow each other.

It has also been demonstrated that grapes can be grown successfully much farther north than any of us supposed possible fifteen or twenty years ago.

There are but few farms in the state where a number of our earliest varieties may not be grown. Among our earliest varieties of acknowledged excellence are the Worden, the Moore's Early, the Delaware and others that might be named. In cranberries, Wisconsin stands nearly or quite at the head of the list. It has been thoroughly demonstrated that if the citizens of our state do not have an abundant supply of all the above named fruits of home growth is not the fault of the soil or climate.

APPLE EXPERIENCES AND POSSIBILITIES.

In regard to apples, pears and cherries, it may be said that if we have not attained to the success we fondly hoped for twenty-five years ago, we have at least demonstrated that many varieties that do well in about the same latitude as our own at the East, have almost utterly failed with us. It has taken many years of trial and labor to decide this fact, and it has been done at a sad cost to many of our nurserymen and fruit-growers, and often at a cost that they were illy able to bear. We hope and trust that a new era is now before us. Within another year we hope to have a number of experiment stations under way in different portions of the state, in which we hope to test some of the most promising of the new varieties of fruits that are now prominent in this and other northern states.

RUSSIAN AND SEEDLING APPLES.

It is well known that Mr. Tuttle, of Baraboo, has an orchard of Russian apples consisting of between 75 and 100 varieties, nearly all of which are doing nicely upon *his* grounds. We hope to test many of them as well as a number of prominent seedlings that have of late been found in the more northern portions of our state. We do not propose to confine our experiments entirely to apples, although they will doubtless occupy more time and care for the present than any other in our list of fruits. It seems to me that if in testing the many varieties of Russian apples, and the new seedlings that are now doing so well in their present locations, if we do not find something of much more value than any we now have, it will be, indeed, a strange result. In fact, I know of one seedling in the northern part of the state that has been in bearing fifteen years. It is still in perfect condition, and the fruit is of excellent quality. It is a very late keeper, and if, when carried into other parts of the state it does as well as in its native home, it will be worth millions of dollars to the citizens of our state.

VARIETIES AND LOCALITIES.

We must remember that there is no variety of apples of acknowledged merit that is at its best over any large part of our territory. The celebrated Newton Pippin, which is probably the best late winter apple in the world, has never been at its best anywhere west of the Allegheny mountains, and only in limited districts in the New England states and in portions of New York and Northern New Jersey. Even in the limited districts of that small

portion of our country, it requires the best of cultivation and the most careful attention or it will not yield the grower satisfactory returns for his labor. While all must admit that we have no single variety of apples that we consider safe and reliable in all parts of our state, yet we have varieties that with reasonable care and cultivation, do well in the districts to which they are adapted, and we are glad to know that there are some growers within the state, whose crops of apples in ordinary years run into thousands of bushels each. We trust the time is not far distant when such growers may be found in every county in the state.

WISCONSIN FRUIT VICTORIES.

It may not be known to all that at the world's exhibition in New Orleans a few years ago, where the largest horticultural exhibit was made that has ever been seen on this continent, if not in the entire world, the United States was divided into three districts, viz.: The Pacific slope, the country east of the Rocky mountains and south of 40 degrees, and the district north of 40 degrees and between the Atlantic and the Rockies. The last, of course, comprised the great apple district of the United States. With this immense apple district, Wisconsin had to compete. In number of varieties she far exceeded them all, and in number of awards she received more than double that of any of her sister states. If I remember correctly, about half the entire awards came to her. A premium of $200 and a gold medal was offered for the largest and finest exhibition of trees and shrubbery from any one state or county and open to the entire continent, and Wisconsin received this award. In short, the horticultural and dairy exhibits of our state won the surprise and admiration of the thousands who attended the fair from all parts of our own as well as from other countries.

THE COMING WORLD'S FAIR.

Having been connected with the commission from this state in preparation for, as well as management of the exhibition from our state at the fair, may I be allowed a few words in regard to what it seems to me to be our duty, and should be but pleasure, in regard to the proposed fair of 1893. The government loaned to the managers of the New Orleans fair $1,335,000. Of that sum the managers offered to each state $5,000, provided they would themselves add more to it, and join them in making the fair a grand success. Our state had made no appropriation for the purpose, but at the urgent solicitations of the commissioners and some of their friends, some of our generous hearted citizens added a few thousand dollars more to the amount, trusting that the next legislature would return to them the sum advanced, which it did. Still the entire sum at our disposal was very inadequate, and the commissioners were constantly annoyed for means to do what seemed necessary in order that our exhibition might be a success. Such a thing should not be allowed to be repeated. I believe I may safely promise that the members of the State Horticultural Society will, at the

proper time, stand as one man, ready and willing to do their full share. They will be thoroughly organized, and its members ready not only to do their own work but to aid in other departments, whenever and wherever it is in their power to do so.

I trust that each and every agricultural department in our state may be equally well organized and ready for work. As agriculture is the most extensive, as well as the most important of all the industries of our state, it is our duty and should be our pleasure, to take the leading part in this great enterprise. Let us see to it that we have a legislature that will make an appropriation large enough to make the exhibition from our state a magnificent success, provided it is well managed. Then let us see to it that the men whose duty it may be to take charge of the work shall be men whose honesty, industry, energy and abilities are like the virtues of Cæsar's wife, above and beyond suspicion. If we will do this we need have no fears but that the managers of other industrial departments of the state will join us and do their full share.

AGRICULTURAL INTERESTS IMPROVING.

I believe it is generally conceded that the agricultural interests of Wisconsin are improving more rapidly than those of any other state. We have a splendid reputation to maintain. Let us show to the world that we are worthy of it. Our state is indeed rich in both agricultural and mineral resources, yet there are a few who are ever complaining of their lot, and who declare that farming does not and cannot be made to pay; that the farmers are oppressed and victimized by those in all other branches of business. Let us discourage such talk and nonsense. It is not true in regard to the farmer more than of those in other branches of business, unless he allows himself to become the victim of thieves and confidence men oftener than men engaged in other branches of business. Let us be wide awake and up to the needs of the time, and show to those around us that we are, as we have a right to be, proud of our business as cultivators of the soil, and so conduct our farms and gardens that those engaged in other departments of business will be proud to acknowledge us as at least their equals, and also that they too are residents of the state that has so large a class of wide-awake, intelligent and progressive cultivators of the soil as our own Wisconsin.

ASSEMBLY CHAMBER,

THURSDAY MORNING, 9:30 A. M.

Convention called to order by Hon. John Mitchell, Milwaukee, Wis., President State Agricultural Society, who said: The meeting to-day will be under the auspices of the Wisconsin State Horticultural Society, and it gives me

pleasure to introduce Mr. J. M. Smith, president of that society, in whose hands I will leave you.

Hon. J. M. Smith—*Ladies and Gentlemen:* Our first paper on the program this morning is "Making it Pay on a Wisconsin Fruit Farm," by Mr. A. L. Hatch, of Ithaca. There is a very general opinion that fruit, particularly apples, cannot be made to pay in Wisconsin. It is a fact in the majority of cases that they do not pay. It is also a fact that the main reason why they do not pay in a great majority of cases, is that they do not receive the care and attention necessary to make them succeed. We have fine orchards from the northwestern part to the southern part of the state, and they are orchards that pay. In and near Baraboo there are paying orchards and all through Sauk county. There are paying orchards in Green Bay. Right in that place is one of the finest orchards I ever saw, and I was born and raised in the best apple state in the union. We will now listen to Mr. Hatch upon the subject which I have announced.

MAKING IT PAY ON A WISCONSIN FRUIT FARM.

BY A. L. HATCH, ITHACA, WIS.

The kinds of fruit that may be profitably grown on good sites in Wisconsin are strawberries, raspberries, currants, gooseberries, blackberries, grapes, apples, plums and cherries. Whatever kind or kinds may be grown should be in liberal quantity, for it is what can be sold from the farm's produce that makes it pay. If the quantity grown is small the expense of marketing will be too great a portion of its whole value to make it pay. A whole wagon load can usually be marketed or shipped with the same expense as a less quantity. Another reason why the amount grown should be liberal, especially of raspberries and cherries, is that birds destroy so much that the profits may be entirely lost unless the amount grown is large enough to feed them all they want and still leave an abundance for market. Where the fruit is grown near woods on isolated farms it is taken in great quantities by young robins and cat birds. When the fruit is ripening these birds are usually about two-thirds grown and are hungry as porkers. Near villages and cities where the English sparrow is found raspberry culture will suffer so much from their depredations as to be quite impracticable on a small scale.

KIND OF SOIL REQUIRED.

In regard to sites suitable for fruit culture I would say that regard should be had to the character of the land to a depth of two feet, if for small fruits, and four or five feet deep if for grapes or trees. You cannot make it pay to plant an orchard or vineyard on land that has but a shallow coat of fertile soil over gravel, sand or other subsoil that has no element in it to sustain the growth of tree or vine.

Apples and grapes do not require very rich soil, nor will it pay to manure young trees with animal fertilizers; still they require a subsoil open, porous, well drained and of such a character as to be available for the growth of the tree or vine. When the trees are in full fruit and not till then they may be judiciously manured and fertilized. Any limestone, clay soil is fertile enough if in good tilth for an apple orchard or vineyard, even when the soil has been depleted by grain raising, and is safer for the first five or six years' growth than richer soil. Trees and vines are more fruitful on such soils than they are on rich soils.

IMPORTANCE OF MARKETS.

Of course a choice of markets is important. If fruit is grown for home market it will require some tact and good management to sell it to advantage. The principles upon which successful sales may be continuously made in any market are uniform supply, good quality, fair condition of fruit and honest measure. As all small fruits are usually handled in the same way and in the same packages for a home market as for shipping, the question of shipment is simply one of cost and returns, within reasonable distances. The person who undertakes fruit farming should have an aptness for the business as well as a liking for it.

Fruit culture has some attractions not possessed by any other branch of farming. In cleanliness it is far superior to dairying and general stock-raising, and will give employment to women and children of a pleasant and profitable nature. During winter it offers a long season of comparative leisure that is very acceptable.

WISCONSIN AS A FRUIT REGION.

It is the general impression that Wisconsin is not much of a fruit state, and yet it is a fact that so much fruit is offered in our summer and fall markets as to greatly depress prices and discourage those who have not tact and good sense to market their fruits right and make it pay. It is a fact also that there are many fruit farms in Wisconsin yielding a better net revenue each year than is obtained from any other kind of farming, except, perhaps, breeding stock.

FRUIT FARM ADJUNCTS.

It is necessary, however, to have some general farming upon the fruit farm, as it is necessary to rotate in growing small fruits; fertilizers are

needed, teams are required for cultivating, marketing, etc., and as other crops are grown in the orchards, stock will be needed to consume and manage them. Therefore the ideal fruit farm will have a span or two of horses, horned cattle for family use and a flock of sheep to pasture the orchards. All these will help to make the farm pay and assist in the main business of fruit culture.

PREPARING THE SOIL.

One of the most important things in managing a fruit farm, especially for small fruits, is in preparing the soil. Good tilth and good depth of availability is the great desideratum. The clover method will secure this in the most practical way. Use common red clover as a crop on the land, and apply in the spring 100 pounds of land plaster per acre. When you have a good second growth plow it under. The next spring plow again and then cut it up thoroughly with a disc harrow. You will then have a magnificent place upon which to grow strawberries, especially if the soil was warm and sandy before. Clover so managed will give the best tilth and fertility for fruit-growing that is within reach of common farmers. I would like to digress a little here and say that the farmer who does not know what clover and land plaster can do for him does not know the a b c of farming.

There has been some talk of selecting a plant or flower as an emblem of of our nation. The Scotch have their thistle, the Irish their shamrock, and the French their lily. The plant and flower of untold value that ought to be adopted for the United States is clover. When we have the great World's fair in 1893 the floral emblem that American agriculture ought to use, the floral token on the lapel of every farmer's coat, showing faith and gratitude, should be garlands of clover !

CULTURE OF SMALL FRUITS.

Each kind of small fruit requires treatment appropriate to itself. Because we shorten in or cut off a part of raspberry bushes before fruiting it does not follow that we should treat our blackberry bushes in the same way. The same treatment would be quite wrong, and would result in severe loss. Because we give our native species of plum trees heavy manuring each year it does not follow that we should do the same with our cherries. We expect to renew our plantations of strawberries every year or two, and our raspberries every few years, but we expect our blackberries and apple trees to endure for a generation. The management should be such as is required by the fruit in this climate. There has been a great amount of study given to this feature of fruit culture, and as a result we are told to plant our trees close together, to grow with low tops, to shield their trunks in winter and spring and to put wind-breaks about them.

WHEN TO PRUNE APPLE TREES.

Last spring Prof. Goff wished to prune the university orchard, but Prof. Henry told him to go slow on that—it would not do to prune here as in New York. Now, if that had been my orchard I should have considered it a benefit of at least $1 per tree to have pruned it thoroughly last spring. I think I could have done it thoroughly for less than five cents per tree, and I am sure $100 would be a low estimate of its cash value to an orchard of 100 trees in that condition. Perhaps you may ask how I expected to get so much out of the operation, and why it cannot be done as well one spring as another. I will try to tell you.

Last winter was a very mild winter and apple trees were almost absolutely unhurt by the cold. The preceding summer had given good foliage, and hence the trees had well matured twigs and excellent buds. I never saw trees in better condition in the spring. It has been our practice to prune the last of March or first of April, *after the severe cold is over and before the sap flows, but* only when trees are in good condition. Last spring they were in such good order that every wound made in pruning would heal up soundly, which would not have been the case if the wood was injured by the cold of the preceding winter. Then wounds would turn black with exuding sap and form a sort of canker spot. The matter of main importance, however, would be the growth of top left on the tree. If the buds and twigs were weak and poor the preceding season, and if they had been injured by the cold of the winter they could not and would not take the growth or added stimulus that should be given by pruning. The result would be a growth of sprouts low down on the trunk and a very weak growth in the top of the tree. If there is not a reviving growth before the next winter, and it is a severe one, it is most certain to finish the life of the tree that has suffered already so much. If the condition is as good as it was last spring we could prune with benefit, because we can get a well-balanced growth in the part of the tree we leave, and secure good new wood and strong buds for the next season. If by taking away a large part of the top we can send a strong flow of sap or growth impetus to every remaining bud and have each bud healthy and sound enough to take and use this growth energy early in the season then we can add to the hardiness, health and fruitfulness of the tree. And it is right here in this added vigor and fruitfulness that we can and do get our pay. Trees that have been weakened by cropping, injured by hard winters, hurt by unfavorable summers, or crippled by neglect can be renovated by proper pruning after mild winters. Trees may be killed outright by pruning at the wrong time.

After severe winters we should not prune fruit trees and it is not a good time for top grafting. If the trees have been injured in the tops there will be plenty of sprouts low down the trunks and about the roots. These should be removed before they get large or the wood hardens. As

we cannot safely prune our trees every spring it follows that when we can do it it is very important that it should be done.

THE FUNGUS FOES OF FRUIT.

I have spoken of the importance of good foliage. During the last few dry years we have had good foliage on our apple trees, and consequently fruitful seasons. The reason why dry seasons give us better foliage is because parasitic fungii in the form of mold, scab, etc., is not so active as in moist seasons. President Earle, of the American Horticultural Society, says of this matter: "There is no branch of our business which does not suffer serious annual losses from these obscure enemies, and no climate or section so fortunate as to long escape their attacks. You cannot probably name a fruit that we grow which is not preyed upon by four or five of these lilliputian foes. * * * * I think it is safe to say that the quantity of fruits entirely, or so seriously defaced as to lose their market value in this country by these low forms of vegetable life is far greater than all that escapes their attacks."

Within a few years it has been demonstrated that spraying orchards with poisoned water to destroy injurious insects is quite practical. Experiments have also been made in spraying vines and trees with medicated water to kill several forms of mold, rot and scab that infest our fruit. When we can combine the two remedies in one, that is the insecticide and the fungicide, so we can use the same apparatus and spray for both troubles at once, we shall certainly have something that will pay. This, we believe, will be true of all our fruit, large and small — trees and vines. While we expect the primary effect upon our fruit trees will be upon the fruit itself, making it fairer, and more free from scab and worms, there will be a second and greater effect in making our trees more hardy and healthy, so that varieties which now suffer with our cold winters will be much more profitable. While these troubles will discourage many and render purchases of common fruit in the general market more and more unsatisfactory, it will leave a better paying field for those who will be up to the times in growing clean, handsome fruit.

Prof. Goff will present a paper upon this subject, for which I ask your careful attention. I will add, however, that our native trees, plants and vines are infested with many of these parasitic fungi and noxious insects, and it is from them we may receive these foes of our orchards and fruit gardens. Hence it will often pay to destroy these native harbors that we may have about our orchards and fruit farms as well as all worthless trees and vines within them. It will also pay to so manage our strawberries as to isolate new beds from the old as far as we can. Also to remove and burn the old bushes from raspberries and blackberries as soon as done fruiting.

IMPORTANCE OF CULTIVATION.

In the treatment of fruit trees cultivation is very important, especially for the first five or six years after planting. By cultivation we mean stir-

ring the soil with ordinary farm tools, of which we think the double shovel plow and disc harrow are best. When the trees are large enough to bear, seed the ground to clear clover. Apply land plaster each spring at the rate of 100 pounds per acre, cut and make hay of the first crop and pasture the second crop with sheep after the apples are off. We prefer Merino sheep for this purpose, because they are not so apt to hurt the trees as the mutton breeds are. If the trees are high topped the sheep could be turned in the first part of the season and would destroy many of the apple worms by eating the fallen apples. The reason why we wish to pasture off the clover closely in the fall is on account of mice. If the clover is left as it grows, it will feed and harbor so many field mice that they would be sure to girdle a large part of the trees. And yet that is just what was recommended by an old member of the Illinois Horticultural Society, at a recent meeting, *i. e.*, "to seed the orchard to clear clover and let it lie as a mulch." That may do in Illinois, but it is not safe in Wisconsin. Another queer thing recommended by this same person is to wash your trees every spring with strong lye. What we call *strong* lye, made from good, dry old Badger state oak wood ashes, would be sure death to young smooth-barked trees. If he had said make a wash of soap-suds, using home-made soft soap, and wash your trees in May to head off the borer, it would be far more practical.

The earlier gathering and better handling of our apples will add to their keeping value and market reputation. Handle but once in harvesting and packing for market where possible, and keep them out of cellars as long as you can; but always in a dry, cool place.

Plant varieties that will live, grow and bear fruit in abundance, of which we have many good kinds. Practice the principles set forth in this paper, together with such others as good common sense may suggest, and if you have a good location you ought to be able to make it pay on a Wisconsin fruit farm as well or better than I have done.

DISCUSSION.

President — The paper is now open for discussion.

Mr. Kellogg — I wish to have Mr. Hatch present to this audience, his success in dollars and cents, or bushels and barrels, and the varieties most profitable for the past two, three or five years.

Mr. Hatch — I have no objection to giving this information, but Prof. Goff has the facts and he may wish to work it into his paper.

Mr. Kellogg — Tell us the number and kinds most successful with you.

Mr. Hatch — I have a number of kinds that are doing well, remarkably well. I am in favor of the McMahon's White for marketableness and fruitfulness. For both these qualities they are my favorite.

Mr. Harris — Can a man make as much the first ten years with the McMahon White of the same age, selling for fifty cents a bushel, as from the Duchess of the same age on the same number of acres, selling at twonty-five cents a bushel?

Mr. Hatch — No, not for the first ten years, but for twenty-five years, yes, decidedly yes. In our part of the state good apple orchards are found four hundred feet above the valleys. In the glacial part of the country, it is a poor site for an orchard among the hills where, when you dig down two or three feet and strike gravel. In such a soil the trees do not have sufficient nourishment.

Mr. Edwards — What would be your choice as to slope?

Mr. Hatch — Northern slope. Elevation is in my case to be considered first. I have trees on the slopes where I can look ten or fifteen miles, being four hundred feet above the valleys.

Q. — Have you no wood protection?

Mr. Hatch — I did have some but on account of the woods harboring insects I cut it away. I have trees with no protection except the setting sun, planted right on top of the ridge. My ground is good. I would be ungrateful to ask my trees to bear any more than they do. In fact they bear too much. For the last four years I could not but be satisfied with the quantity the trees have borne.

Q. — Mr. Arnold: Have you any trees that passed through more than one hard winter?

Mr. Hatch — I have trees as hardy as can be that have passed four hard winters.

Mr. Arnold — What varieties?

Mr. Hatch — McMahon's White; I never lost a tree of that variety nor of Duchess, and I have some others, among them a good many kinds of Russian apples.

Mr. Herrick — At that height don't you suffer by high winds?

Mr. Hatch — No, sir; the wind does not blow there when it does not in the valley.

Mr. Harris — How long have you fruited the McMahon's White?

Mr. Hatch — I have had them in fruit ten or twelve years. I set the first grafts in 1870, I think. I sent Mr. Stickney, of Wauwatosa, some a few years ago. He said he would plant them, but he did not have much faith and did not expect to get any fruit from them. Last summer at Sparta, I said, "Mr. Stickney, of all the apples you have, if you were to plant apples in Wisconsin, what variety would you select?" He said McMahon's White. If you can plant it where it will not fire blight you will find it a fruit that will sell well in the market.

Q.— How do you like the Northwestern Greening?

Mr. Hatch — It is not so hardy with us. The trees will do well in eastern portions of the state.

Q.—What is the next profitable variety after the McMahon White?

Mr. Hatch — I can tell you what has paid me: Tetofski, Duchess of Oldenburg and Fameuse. Those have all paid very well.

Q.— How is the St. Lawrence, Fall Orange?

Mr. Hatch — It is a good tree. As a rule where you can grow the Greening you can grow them.

Mr. Arnold — And the Willow Twig?

Mr. Hatch — It winter kills.

Q.— In speaking of pruning, would you prune a tree you know to be black hearted in the spring or any other time?

Mr. Hatch — Yes. Suppose you have a tree that is injured and you come to a favorable spring for pruning, if you can put a good reviving growth on that tree it is worth the trouble. The interior of the tree is not the working portion, it is the exterior. You make a mistake by trimming at the wrong time and in the wrong way. It is not possible for you to carry Fameuse ten years without their getting black hearted, but yet you can make them bear as many apples as any tree if properly managed. I had trees planted that did not bear because wrongfully managed in

pruning. It is remarkable what you can do with just a jack knife if only in the right time. You may take two orchards side by side and let one be carelessly pruned with the most approved pruning knives, etc., and let the other be carefully pruned by a man with a jack knife, at the right time and in the right way, and you will out of one hundred trees probably get one hundred dollars more than out of the other. After a hard winter the trees are weak and will not do well after pruning. If uninjured then take your knife and cut away judiciously. If you exercise care about it you will stimulate the trees. If the trees are weak, as they are after our hardest winters, you will make a failure of it.

Mr. Hoxie — You wish to be understood to say, you would not prune excepting a spring following a warm winter?

Mr. Hatch — Yes, and then you will not injure the trees; you have then something to build on.

Mr. Arnold — Mr. President, burr oaks do the best with me. I have spent several hundred dollars on orchards, and attend a horticultural convention once in a while to get information, but the doctors disagree so I haven't any faith in them. There is some common sense in what Mr. Hatch says about our trees not having sufficient vitality to go through our hard winters and bear fruit. Whenever a tree with us begins to bear it bears itself to death, the best we can do, and I am teetotally discouraged. I want to know if the Russian is the only tree we can safely invest our money in. It seems as if a tree that is hardy here is the one for us.

Mr. Harris asked if spraying trees year after year, would not result injuriously to the trees.

Prof. Goff — The orchards of Niagara county, in western New York; commenced spraying with Paris green and London purple at least eight years ago, and have continued it ever since. The testimony of such men as Mr. Moody, whom many of you know, is, that every year the codling moth becomes less and less injurious. He believes that if the farmers continue the practice and if they had some way

of forcing their slack neighbors to spray their trees also, it would not be long before the codling moth would be practically extinct in that portion of the state. So far as injury to trees is concerned, if the poison is applied in the proper proportion, I do not see how any injury is possible. The question which now commends itself to the orchardist is whether they cannot add something to the water besides London purple that will destroy the apple scab. The following is a good formula for the apple scab, and is substantially the one we used: Dissolve one ounce of precipitated carbonate of copper in one quart of ammonia, and dilute this with twenty-five gallons of water.

Q. — Liquid ammonia?

Prof. Goff — Yes, liquid ammonia.

Mr. Doty, of Chicago — What is the proper date for applying the spray?

Prof. Goff — Just after the petals have fallen, at the time recommended for the codling moth. We repeated the spraying once in two weeks until we had made seven applications. Whether or not it is necessary to make so many must be settled by experiment. We want to be thorough.

Mr. Williams — What does it cost per tree?

Prof. Goff — In doing our work we did it in an experimental way which is necessarily expensive. We had to measure everything carefully and apply it with a hand force pump so as to cover every portion of the tree. I do not think the spraying for the scab need cost, to exceed ten cents per tree.

Mr. Kellogg — How far apart were the applications?

Prof. Goff — Two weeks apart. We commenced May 18th, soon after the petals had fallen, and made the application two weeks apart thereafter. The last application was made in the first part of August. We carried on the experiment very thoroughly, more so perhaps than the ordinary orchardist would need to do it.

Mr. Hoxie — The time you would commence spraying would depend on the time the apples are in bloom and the petals have fallen?

Prof. Goff — Yes, sir; just after the petals have all dropped from the flowers while the calyx is still upward.

Q. — Would there be any advantage in spraying the trees in the winter with the hope of killing anything, either the codling moth or other insects, or would you wait until the spring opens?

Prof. Goff — I think there is a valuable opening in that direction. In New York, Mr. Churchill made the experiment of spraying apple trees in winter with kerosene emulsion, and also with pure kerosene as a means of destroying the eggs of various insects. It is too early as yet to say fully what the results will be, but the experiments indicate that such spraying can be made without injury to the trees. Mr. Churchill has written me that during cold storms the ice does not form on the branches of trees sprayed with kerosene which is another points of possible value.

Mr. Kellogg — Is there any danger in the late application you made in August, both of Paris green, the London purple, and the carbonate of copper solution for the scab, of having injurious effects upon the apple?

Prof. Goff — I would not recommend spraying with London purple or Paris green as late as August; there is no danger from the other compound. Although dangerous to drink the liquid, it would have no dangerous effects in such small quantities as might remain on the apples.

Mr. Kellogg — I would like to have him state if the Fameuse is the worst variety we have to scab?

Prof. Goff — In Mr. Hatch's orchard, the Fameuse has been more subject to the scab than other varieties.

Mr. Harris — I most heartily approve of the practice of spraying for killing the insects and preventing the fungus growth, and hope that the Minnesota orchardists and those in Wisconsin will co-operate in carrying on this experiment until its object is attained, and we are well rid of these pests.

Mr. Hoxie — Certain trees are affected more than others in the same locality. Will the professor please explain this?

Prof. Goff — Trees where the limbs hang low are affected more than others, for the reason that moisture favors the development of the fungus. An orchard which is planted close will usually suffer more from scab than one in which the trees are farther apart, and an orchard not in an exposed position will suffer more for the same reason. In a moist season any orchard will suffer more than in a dry season.

Mr. Doty — Is there any probability that bitter rot can be affected by spraying, by adding anything to this solution spoken of, or by another?

Prof. Goff — I have no knowledge on that subject. We have as yet made no experiments on trees affected with that disease.

Mr. Kellogg — I wish the professor would tell us something more in regard to the application of London purple; perhaps this audience don't know the proportions to use and the amount of water, when to apply it, when to stop and whether it will also destroy the curculio. I have failed to reach the curculio when I have reached the codling moth. What is the matter? How much London purple is used in spraying? We can use too much, enough to injure the foliage.

Prof. Goff — Mr. Hatch followed the formula I gave him, which was an ounce to nine gallons, and found it a little too strong. The formula we now recommend is one pound to two hundred gallons of water, or an ounce to twelve and a half gallons.

Prof. Goff — We must not injure the foliage; a little injury to the foliage will do as much harm as the codling moth. I have already mentioned the time it should be applied, which is just as soon as the petals have all fallen, and it will be well to repeat the application two weeks later. In regard to the destruction of the curculio the reports differ. Some have had very excellent success. Mr. Weed, of Illinois, reports very good results from spraying cherry trees for the curculio. In 1888 Prof. Cook, of Michigan, had good success in spraying plum trees, but the past season I think he feels less confident in regard to it.

Mr. Doty — As to the strength of the solution, the foliage of different trees varies in hardiness. The trees that will bear a stronger solution and those that require a weaker solution should be known. I would like to know if Prof. Goff can give us any idea as between peach, plum, apple and pear trees, which will bear the stronger and which require the weaker solution.

Prof. Goff — The foliage of the peach is more sensitive to injury than that of the other trees mentioned, and that of the cherry is considered the most resistent. For the peach I would not use one pound to two hundred gallons. The plum, pear and apple I think are about alike.

Mr. Kellogg — Some varieties of apples will not injure as much as others. In spraying an orchard some trees I pass, and some others I give a second spraying the same day, but you say you only want to spray once in two weeks, and I think that is so unless you have a storm which washes the solution off.

J. M. Smith — When I came to Wisconsin thirty-five years ago I do not think there had been ten dollars worth of small fruit grown in the central part of the state. We were almost wholly dependent upon the wild fruit. It has been demonstrated that small fruits are not only successful here but very successful. There is no state in the union that can show a better record in small fruits than Wisconsin, and the best strawberry comes from Wisconsin. After twenty years have passed northwestern Wisconsin can show a better record in strawberry yield than any other part of the United States. This has been developed in the history of the last twenty years. For the further discussion of this subject we will now hear from Mr. D. C. Converse, of Fort Atkinson, who will take up the question of small fruits.

SMALL FRUITS—PROPAGATION, CULTIVATION AND PROTECTION,

BY D. C. CONVERSE, FT. ATKINSON.

This subject is of vital interest and importance to every person, whether producer or consumer.

Although fruit growing is in its infancy in many parts of the state, still enough has been done to show that in the variety, quality and abundance of small fruits, Wisconsin stands among the foremost states.

A hopeful sign of the times is the steadily increasing taste and demand for fresh, ripe fruit, not as a luxury, but as a daily article of food.

In keeping up the supply and meeting the demands of the public, lies, to a great extent, the health, happiness and welfare of the nation.

As the warm weather of summer comes on what a craving takes possession of us for fresh fruits.

As nature demands a change from the food of winter, it is the duty of every man to satisfy this craving for fruits, and as a rule, he can do so cheaper and better by raising it.

If you fail to meet this craving in your children for fresh, ripe, luscious fruit, from your own garden, they will meet it from your neighbor's gardens, even it be with green apples.

Why is the strawberry patch, the melon patch and the orchard, considered by so large a part of the public as common plunder?

Is it not because this petty thieving is done by those from homes unprovided with beauty and comforts in the form of flowers and fruits? By those who have not taken an active part in providing their own homes with these blessings? By those who do not realize the cost, care and value of them.

We are glad to see so many farmers waking up to the importance of changing from the old pork and potato diet, through the warm weather, to a fruit and vegetable one. And yet so many will still persist in saying, "I can buy my berries cheaper than I can raise them." Does that sound reasonable, with abundance of land, horses and tools at hand?

If you wish to scrimp along on two or three quarts a week, no doubt the statement is true; but if you wish to enjoy fresh fruit three times a day in abundance, in four cases out of five you can grow it cheaper.

Not only is a larger supply available when grown at home, but the quality is much better, and by a proper selection of varieties, a steady supply can be maintained from the middle of June until after hard frosts.

Another common excuse given for not setting fruit is that it is too puttering. It is puttering if you make it so. Is there any kind of work but what can be performed in a puttering, bungling way? Every fruit grower

and farmer knows that as good judgment, as good businses ability, and as good brain power can be used on the farm and in the garden as in any line of work.

We hear of late much about combinations — combinations of capitalists, combinations of laborers; but what we as fruit growers and farmers want is a combination of brains and muscles that shall lift us mentally, morally and physically.

What fruit shall we propagate? Life is too short to waste time on worthless varieties. Instead of buying stock of some stranger who tells you of the wonderful, runnerless, bush strawberry, or tells any other plausible story which your own judgment will not credit, go to some one who has had experience in raising small fruits, and he will be able to inform you as to some of the best varieties.

Good varieties and good stock are the first requisites of success, for without them loss and disappointment will follow.

Any land that will produce good crops of the ordinary farm products is well fitted for fruit culture. It should be rich, well drained and well prepared. If plowed in the fall the ground can be worked earlier, easier and up to a much better condition for planting. A good top dressing of well rotted manure, well worked in before setting, will push plants rapidly from the beginning.

Work the surface of the ground up as fine as possible, not only for the good of the plants, but for ease and comfort in cultivating.

For strawberries mark rows, as shallow as possible, 3½ feet apart. Set plants in rows from twelve to twenty inches apart; the former distance for Wilson and the latter for strong growing sorts like the Crescent.

A convenient tool for setting is an iron dibber, made with a broad, nearly flat and pointed blade. Press this into the ground sufficiently deep to allow the roots to be placed straight, when the crown of the plant is even with the surface, and then with the dibber press the dirt firmly against the whole length of the roots. This not only allows them to get a better hold on the soil but prevents them drying out, as they would do, if the work were carelessly done.

Cultivate the ground early and often, thus forcing the growth before the hot, dry weather of summer comes on. Don't wait for weeds; they are there even if you cannot see them, and the easiest and cheapest way is to destroy them before they show themselves. Weeds are like little temptations, resisted with but little effort at first, but conquered, if at all, only at the greatest expense of both plant and soul, after becoming fixed and established.

As to the old varieties of strawberries, we have had best results from Crescent, Wilson, Park Beauty, Capt. Jack, Manchester and Sucker State.

Of the new varieties, the Jessie, Bubach, Haverland and Warfield, stand at the head.

Does it pay to plant the new varieties? Yes, not largely at first, but as tests to ascertain the value of them for yourselves.

Progress in horticulture is being made and we think that even our honored president will admit, that in the Warfield No. 2, he has at last found a worthy mate for his much loved Wilson.

After the ground is frozen sufficiently hard to bear up a team, drive on the beds and cover lightly with straw or marsh hay, straw is better if free from weed seeds, as it allows the plants to grow up through better.

After growth has commenced in spring, go over the beds, and with a fork, loosen the straw on the rows only enough to allow the plant to get through. The mulch serves not only to hold the moisture through the picking season, when most needed, but also to keep the berries clean and free from dirt.

In order to keep up the succession of berries, plant early and late varieties of both raspberries and blackberries. We have seldom failed in securing good crops of such reds as Turner, Cuthbert, Brandywine and Shaffer's Colossal. Although the dull color of the Shaffer is against it as a market berry, still its great size, productiveness, hardiness, quality and manner of growing without suckers, make it one of the most valuable.

While we have made a practice of growing red raspberries in full rows, and cultivating only one way, I am convinced that they can be grown more cheaply by planting 4½ feet each way and cultivating both ways.

We have abandoned the practice of cutting out the old canes in our red raspberries as a useless expense. They soon get brittle, break down and crumble into pieces, making mulch, and in time, manure.

Shaffer's Colossal and black caps should be planted in rows 7 feet apart and plants in the row 3 or 3½. Pinch out tops of new canes when one foot high, the first year. Afterward when from 18 inches to 2 feet. This not only causes a more stocky growth and greater bearing surface, but produces a low bush that needs no staking, either in the field or garden.

By planting either Souhegan or Tyler for early, Ohio for medium, and Gregg or Nemaha for late, there need be no break in the picking.

Tender varieties, such as Cuthbert and Gregg, need protection. An easy method to cover them is for one man, wearing gloves, to gather all the canes of a hill into his hands and bear them to the ground, when another man covers the tops sufficiently with earth to hold them down. Bear all canes in the row the same way and after winter sets in, cover the whole row with a coat of mulching.

Blackberries should be planted in rows 8 by 3½ feet. Culture for blackberries is about the same as for raspberries. They should be nipped when from 2½ to 3 feet high. In covering bend the canes all one way along the row, using a fork to crowd them to the ground, where they can be held down with earth as in covering raspberries.

While many practice covering the canes entirely with earth, we have had canes come through in perfect condition by following the above

method, then covering rows after ground is frozen with mulching. If mulching were put on earlier, mice would be apt to take up winter quarters and do much damage to the canes by girdling.

By using the mulch, instead of earth, the rows are not ridged up, the canes are lifted more easily in the spring, and mulching is on the ground ready for use around the canes.

Although mulching is scarce and high in some localities, still where it is liberly applied the expense of wiring is unnecessary, as the mulch keeps berries and bushes up from the ground.

Although each grower may have his favorite variety of blackberries, still any one, by protecting canes, can succeed well by planting Snyder for early and either Stone's Hardy or Ancient Briton for late.

In picking all small fruits, wait until berries are perfectly free from rain or dew, as fruit sent to market in a mussy condition will not handle or sell readily. It will pay to always use fresh, clean, new boxes, as appearance goes a great ways in disposing of fruit. Use pint boxes for red raspberries, and quart boxes for blackcaps, strawberries and blackberries.

A lady in a neighboring town, in describing the supply of fruit on a newly purchased place, said: "I have one grape vine and if *he* don't do well in the spring, I shall want another one." How contrary to the American idea of abundance and plenty. Nearly every family of six or seven persons would use the fruit from twenty-five vines, and a great many would, by selecting early and late keeping varieties, use at home, the fruit from fifty vines. While growers place the most dependence on the Concord, Worden, Moore's Early, Brighton and Delaware, the list can be profitably extended to included Salem, Lady Niagara, Agawam, Lindley, Duchess, Wilder, Massasoit and others.

In planting vines set at least eight feet by eight. Make hole sufficiently large to allow roots ample room to be spread out, somewhat fan-shaped without crossing them and use fine surface soil among the roots.

When growth commences, rub off all the buds but about two of the strongest, nearest to the ground, and tie these to a stake when sufficiently long. In the fall cut back to two or three buds and cover with earth or marsh hay. Although methods of pruning differ, an easy one is to cut back the old wood every fall, leaving two or three of the strongest canes, that start under the ground. While some prefer to train vines on trellis, more work can be performed with horse and cultivator by training to stakes.

Currants and gooseberries, formerly a leading feature of every garden, are now found in but very few. How often do I hear the expression, "You can't raise currants any more, — the worms." Why not yield to every enemy and say, You can't raise corn any more — the frost, cut worms and gophers. You can't raise strawberries — the grass and grubs. You can't raise hogs — the cholera. You can't raise chickens — the cats. No my friends, you can't raise anything worth raising, or make anything of yourself without a struggle with weeds, insects, temptations and self. Although

people have let the currant worm have nearly full sway, they are once more planting both currants and gooseberries largely. By setting currant bushes five feet by four, the bulk of the work can be performed with horse and cultivator.

Though many find hellebore sufficient to destroy the worm, yet a more efficient means is the the use of Paris green in solution, sprinkled on the bushes. There seems no danger in its use, as before the worm makes its appearance, the currant has attained to one-third or one-half its size and has a glossy surface which no poison is apt to penetrate. The Red Dutch, White Grape, Victoria, Prince Albert and Holland are the standards, while Fay's prolific is making many friends.

In gooseberries the Downing and Houghton still hold their own and with a great many, Industry has succeeded well.

The grower who has so selected varieties as to have a steady supply of fruit to furnish customers can largely hold his trade against all competition. Although the past season was not very profitable to fruit-growers, owing to the extremely low prices, still the natural result following large crops and low prices is to icrease consumption among all classes, thus forming a taste that will be gratified when berries are higher.

And why not form plans this winter for setting a full assortment of fruit to put on your farm. You, perhaps, have been talking for the last five years of settimg out a nice bed of strawberries and raspberries, but when spring comes around, this, one of the most valuable and useful works is neglected. While a fruit garden on a farm would probably turn two hundred per cent. profit on the money invested, still the returns, in money, are not the only test of its value.

The grandest product of the American farm is true men and women, and the free use of fruit is a strong aid in developing them. He is a patriot, who makes his home so happy and bright, that his sons and daughters can look back upon it, as the happiest place on earth, the Garden of Eden, the land flowing with milk and honey. The influence of such a home can never die. The taste there formed, increases as time goes on, exhibiting itself in better and brighter homes, in happier and nobler lives.

DISCUSSION.

The paper is now open for discussion.

Mr. Harris — I would like to give a remedy for the currant worm. Paris green is not one the public recommends. My son tried a remedy last summer which was cheap; it was simply boiling water. He gave each bush a rap and the worms dropped like potato bugs, and he poured the boiling water on the ground; it killed them and did the bushes good.

Mr. Phillips — There is a gentleman here from Medina, Ohio, Mr. A. I. Root, I would like to hear from him.

President Smith — We will listen to Mr. Root, publisher of the Bee Journal. I take pleasure in introducing Mr. Root.

Mr. A. I. Root, of Medina, Ohio — I am glad to meet with you and have been much interested in the papers and talks. I have had a little experience with the Jessie strawberry, and I like to tell of it. Out in Ohio we think a great deal of Mr. Terry; he has been in Wisconsin I believe. When I first met Mr. Terry it was at a farmers' convention; he talked of the potato growing industry. He treated it with something more than extraordinary ability. Afterwards I asked him if that had been written out in a paper, he replied that it had not. I said to him, "You write that potato story down on paper and I will make a book of it." I prepared a quarter of an acre of land just to suit me and started to grow potatoes on Terry's plan, and I had one hundred and twelve bushels of fine potatoes from that quarter of an acre. That was something extra for that soil. After the potatoes were out I said to my wife, "There is just the place for strawberries." Mr. Crawford had been booming the Jessie and I bought fifty plants.

First, I will have to tell you how I planted my potatoes. I fixed my ground just right, we use for marking what is called Darnel's furrow and marker. We use it for marking everything. I like to hill up and I guess I would hill up everything if it could be done. We have a stiff clay soil. My brother-in-law said he always pitied me when he saw my clay soil. When I got 112 bushels of potatoes from that quarter of an acre of stiff clay soil he stopped pitying me. Jimminie, he said, I never can raise such potatoes. How much did your manure cost you, quite a good deal? I told him. My ground was already furrowed up and marked. I did not plant my potatoes in the furrow but up on a little ridge — there is quite a ridge made by this marker. Well, I bought the strawberry plants and wanted to plant them in the potato ground, but feared it would set them back to move them in the usual way, so I got some

tin tubes made in our tin shop something like that (indicating); I set those right over the strawberry plant and drove them right down into the ground, then I took it out and the plant came with it. We filled a wheelbarrow full and took them to the ground and set them in. Then how should we get the tubes off? I bothered a great many days and dreamed of it nights; some said pour water on, it did not do. The next morning I called one of the boys, and said, "We didn't pour that water on right, you bring out more water, and the watering pot, and we will try." We poured some water on and wiggled the tube and pulled it. It slipped out like a ball of butter. We got on all right and planted the quarter of an acre with Jessie strawberry plants, and not a plant died. They had their original soil around them when transplanted. I think we planted them about as quickly as they do any other way. They commenced growing and to put out runners, and everybody admired the strawberry plants as much as they had admired the potatoes.

My next door neighbor has a planing mill. He deals in lumber and has a dozen horses. He beds his horses with the planing mill shavings. I told the boys that we were not going to have any mulch that contained weed seeds; clover is one of the worst things for the strawberry ever used for a mulch. We got the bedding from that neighbor of mine. I told my boy to cover the plants so he could hardly see them. Last spring I was watching my plants and when the proper time came almost all of them began to show through the mulch. The runners were kept off and we raked the mulch in the spring; we raked it so fine that we killed every weed; there wasn't a weed in the whole quarter acre. By and by the blossoms came out and the fruit set finally; one day one of the boys went to the postoffice with the mail. He was going kind of leisurely through the strawberry patch gathering berries. I watched him and saw him fill his pockets. I asked him what it was he was putting in his pockets when he went through the strawberry patch. He said, "Strawberries." I said, "What do you mean by picking great big green strawberries like

that?" They were all light, had not commenced to turn color. He said, "Why, they are good." "No, are they?" I took one and tasted it and lo and behold that green Jessie strawberry was delicious. I did not wonder at the boy's liking them. I picked those green strawberries and sold them for twenty cents a quart.

A member—To Ohio people?

Mr. Root—Yes, they could not get any others.

A member—They were starving for fruit.

Mr. Root—Another enemy came up. We have rats there. We have a neighbor who keeps a corn crib and that calls the rats. The rats would come from there to our strawberry patch and we had to fight for the crop. I do not think we sold any of our berries for less than 15 cents. We sold the Crescent, Sharpless, Jessie and Manchester, and found none ahead of the Jessie. We commenced picking very early, and when everything else was gone we had strawberries. The Jessie are the first, last and biggest strawberry I am growing.

Mr. Hoxie—You can tell a better story than the Wisconsin men. Has Mr. Loudon heard you tell this story?

Mr. Root—I don't know.

Mr. Phillips—How much did your quarter of an acre yield?

Mr. Root—I did not keep track of it.

Mr. Kellogg—Did you have as many bushels of Jessie strawberries as you had of potatoes?

Mr. Root—That I can't tell.

Mr. Goodrich—I think this clearly demonstrates one fact to my mind so far as the general farmer is concerned; that is—the culture of small fruits, the strawberry alone, can be much more profitably and successfully grown by some man giving his entire attention to it, to that business, I recommend that in the interests of every farmer. I know many of you recommend that it is for the best interest of every farmer that he should have his little strawberry patch on his farm; that he can go out and pick the ripe luscious fruit and have it on his table. I know if I had one in my garden, the little kids would get them before I did.

Just before dinner, the time when the wife wants them to put on the table, I and my men have not time to go to the garden to pick the fruit. While the successful strawberry grower living near, who makes it a business can supply your table with fresh fruit at at a less cost than you can raise it. This year I have paid over $30 for small fruit, yet, I got it cheaper than I can raise it. The berries were better than I could have raised even if they had not been stolen by the little kids. In regard to apples, the same may be said. The farmer can buy the fruit cheaper than he can raise it.

Mr. Smith — The farmers in this state ought to have fruit as plentiful as bread and butter and potatoes. If you cannot raise it cheaper than you can buy it, it is your own fault not the fault of the soil, not the fault of the climate, but the fault of the owners of the soil.

Prof. Goff — I remember last winter in attending a farmers' institute in Wisconsin somewhere where Mr. Hale, of Connecticut was. He asked the question, "How many in this audience like fruit?" "Strawberries, raspberries and blackberries." He asked all who liked them to rise. I think every one in the audience rose. Then he said, after they had sat down, I want to ask the farmers' wives one question. How many of the farmers' wives in this audience had last year all the small fruit they would have liked to have had? I think there was only one lady rose in the whole house. He said, "These people all like fruit, and yet there is only one lady in this house who says she has been provided with all the fruit she wants." I do not know whether this gentleman's wife is here or not, but I would like to ask her if she had all the fruit she wanted and needed to put up, and for the table every day.

Mr. Goodrich — The only complaint I have ever heard my wife make was that it was a great deal of work to can as much fruit as I would buy at a time, if I bought it ready canned it would suit her better.

Mr. Markle — There is always a great deal of talk about this question. What would we do if everybody raised strawberries? I live five miles from the city of La Crosse.

There was a man in La Crosse whom I used to supply with berries. He often often said he would like to go out into the patch. I said, "all right, hitch up and come out." He came and said as the rest all do. I have had at least a dozen tell me if they had to pick the berries they would never eat them. It is labor picking strawberries. There are lots of people who won't have anything to do with bees because they do not like to be stung. They like the honey but there is labor in it, and they do not like to labor bad enough to get it. If a fellow don't want to plant strawberries let him leave them alone. I shall plant them and sell them.

Mr. Harris — There is labor in raising oats. I have sold the first picking of strawberries to farmers for 15 cents a quart and got oats from them for fifteen cents a bushel. They would go three and one-half miles to get the berries and go the same distance to deliver the oats. I think it would have paid them better to raise the strawberries.

Mr. Powers — I am a seed grower. I know there is no sense in any farmer being without strawberries. I have not been without one or two kinds of fruit since living on my farm, and I have lived there for thirty-five years. I am very shiftless about the garden as neighbor Hatch can testify. I have no boys and no children there. Now and then a kid comes up from Ithaca to get some strawberries. I do not raise them to sell; never sold a half bushel in my life, but want them for my family. How many farmers in Wisconsin have paid out thirty dollars for fruit a year? how many can afford it? They can't all do it, and their children have to go without fruit. It takes a little labor to raise what you want, and it takes skill, time and labor to raise them to sell. A great many make money out of strawberries, more than in any other way. Every farmer in Wisconsin ought to have his strawberry and raspberry patch.

Mr. H. C. Adams — I would like to ask Mr. Converse what it costs him to raise a quart of strawberries?

Mr. Converse — I don't know. Never have kept any account.

Mr. Adams — Which costs you the most, the Wilson or the Crescent?

Mr. Converse — The Wilson, decidedly.

Mr. Adams — What variety costs you the least of all?

Mr. Converse — Well, such varieties as the Crescent and Park Beauty.

Mr. Adams — Do you ship your Crescent strawberries to market, and how far?

Mr. Converse — As far as we need to. I think it is a mistake in trying to ship to the large markets, there are a plenty in the small towns who need fruit, even if you don't got so large prices, it is better than to ship too far.

Mr. Adams — How far can you ship the Crescent successfully?

Mr. Converse — One hundred miles at least. Never tried further.

Mr. Smith — I have shipped them two hundred miles.

Mr. Adams — As Mr. Converse's paper is under discussion, I would like to ask him what material he uses for mulching other than earth?

Mr. Converse — Either marsh hay or straw.

Q. — Is there any danger of taking mice with the marsh hay?

Mr. Converse — Not if you wait until the ground is frozen.

Mr. Adams — In my experience it takes a good deal of cultivating all through the season in order to be successful with small fruits. My strawberries cost me on an average from 3 to 3½ cents per quart. The reason I asked Mr. Converse that question was because I wanted to get at his experience, and if he grows them cheaper than I do I wanted to know how.

Isaac Ellis — What varieties do you use?

Mr. Adams — Wilson and Crescent, some Jessie, depending largest upon the Crescent for market than any other. The belief has been impressed upon my mind pretty clearly that it is a very difficult thing to get better varieties than the Wilson and Crescent, which are to-day the varieties for general cultivation. The small fruit business upon my

farm is incidental, I do not make it my main business and I do not expect to do as well by it as I do by the other branch of my business which is dairying, it is suplementary. I work the two in together. The manure I get from the dairy is useful in keeping up the fertility of the strawberry beds and blackberry patch. That you can raise fruit upon most any kind of soil, is an unmitigated humbug. What is true of any other farm crop, is true of all fruits, you want a good rich soil. Mr. Smith's experience corroborates this.

Mr. Smith — May I ask a question right there? Isn't it a fact that any land which will raise a good crop of potatoes will also raise a good crop of small fruit?

Mr. Adams — Yes, any land that is rich enough to raise other crops, if rightfully managed, will raise a good crop of berries.

Isaac Ellis — How do you cultivate?

Mr. Adams — My plants are set in parallel rows, and I cultivate through the season with the horse hoe, in all seven or eight times. Mulch with marsh hay or swail grass, and leave it on in the spring, which is the best practice. Leave it on of a sufficient depth to retain the moisture for the benefit of the plant, and remove where it is so thick as to keep them from growing. I grew 20,000 quarts of strawberries, raspberries and blackberries the past season. The steawberry crop was a failure because the preceding season was very dry. The blackberries amounted to 12,000 quarts. I do not think they cost me, boxes and picking, more than one and one-half cents a quart, anyway they did not cost me over two and one-half cents a quart. I sold them from six to ten cents and made quite a respectible profit out of the business. There is no reason why the average farmer should not have all the fruit he needs. He ought to grow apples for the health of his family. It is no more trouble, nor so much, to raise fifty bushels of strawberries as to raise 100 bushels of potatoes, and then the strawberries don't take so much fertility out of the soil as potatoes. You can raise your small fruit or let your children or your wife. Ladies very often come to my place, if they

cannot get their husbands to come, and say: "I want to get some strawberry plants." They get a few plants and the man sets them out if the wife don't. The children weed and take care of the beds almost entirely. Then in one or two years they come for more plants. Get the children interested in this fruit growing and let them sell a few quarts. It does the children good to make some money. There is no reason why you should not furnish your wife with all the small fruit she needs for the table and canning. It is for the health of your famity. Don't do as I do about vegetables, my wife is continually reminding me of my failure in this regard (my wife is here and hears me tell this); she lets me hear of it and I ought to hear of it too, for there is no excuse in this particular.

Mr. Markel — I would like to corroborate what the gentleman said in regard to the children taking care of the strawberry bed. There is nothing which will excite a child as a strawberry bed, and if you give him a chance he is going to learn the rudiments of labor there, and he is going to see what he labors for because the strawberries are a good incentive to work. I made a mistake myself in that line. There is a little half-acre patch back of the barn. One day my oldest boy who was about thirteen, and the other about eleven, told me he wanted that patch. I said, "You can have it." They would not let me have it to-day for $50.

Mr. C. A. Hatch — The ground must be rich. I heard some of the members last year, recommend using corn stalks for mulching and leaving the mulch on. I had a nice patch of strawberries, so I followed this advice and left the mulch on. After the berries got to be about the size of hazel nuts, they stopped growing and nearly every one of them developed a hard knot at the lower end. I do not think I had more than two hundred good nice, well developed berries in the patch, just from the effects of that mulch. So I think there must be some cultivation necessary. It may be the difference in the soil, I don't know. That is the result I had and I thought it was entirely owing to the mulch.

Q.— What varieties of berries did you have?

A.—C. A. Hatch: Manchester, Crescent and some of Captain Jack.

Q.—You are sure the trouble was with the mulching?

A.—C. A. Hatch: Yes, sir.

H. C. Adams—I should as soon think of mulching a strawberry bed with hop poles as cornstalks. If the bed was composed partly of Captain Jack it was probably nearly all Captain Jack. Your mulching of cornstalks was poor. Is the soil good?

C. A. Hatch—First rate, an old sheep pasture, used for that purpose six or seven years. I had manured it quite heavily. The bloom was nice and the prospect of a good crop was also good. I never failed before of having a good rop. The neighbors had good crops.

B. F. Adams—I do not understand it. In all my experience I never saw a solitary instance such as you speak of. Generally a strawberry is always thirsty, and the more moisture you can keep in the ground the better the plant does. Where the ground is constantly covered the ground is rich. If you take a board and lay it on the ground for a certain time, and then take it up and plant something there, you will find that the ground has become rich. There is some reason for it. Mr. Millman, of Michigan, says there are certain microbes in the ground that work best when the surface of the ground is covered. For that reason I think leaving the mulch on is a good plan.

C. A. Hatch—I want to know what to ascribe my failure to? Was it the character of the mulch? I have had berries right in the same place, and they have only failed to develop this time.

B. F. Adams—Was the season dry?

C. A. Hatch—Yes, sir.

B. F. Adams—Wasn't it dry the preceding season?

C. A. Hatch—Yes, sir; on the same farm three-quarters of a mile from there my brother raised a large crop of nice fruit.

B. F. Adams—I can make this statement that I have grown strawberries the greater part of my life, from boyhood up. My experience is that some strawberries are not

so reliable as others — that such varieties as the Crescent do not always fruit perfectly. You can use fertilizers and make the best arrangements you possibly can, and the crop for some reason will be imperfect.

H. Hutchinson, Randolph — Mr. Chairman, this same subject came up at the Nurserymen's Association in Chicago, and it was decided there that it was the hot winds we had last summer which blighted the berry so it did not develop fully. The berries in Illinois did not ripen.

Mr. Root — I want to say a word in defense of cornstalks for mulching. We used it for mulching because there are no weed seeds in it. I had a lot of corn fodder and took it to mulch a patch of Manchesters, and got a good crop. I do not think the corn fodder is the trouble.

Mr. H. C. Adams — Did you cut it up?

Mr. Root — It was put on whole.

Mr. C. E. Morgan — The trouble was probably the want of fertilization. We had a strawberry bed in our yard that the original plants came from New Haven. They did not seem to do well, when they came to maturity there was not a berry fit to eat, there was a big green lump in the end of them. Of course we had them to throw away. After we had paid out a good deal of money and still met with failure, I was told it was want of fertilization, want of fertilizing material, and in order to have produced that material some berries should have been planted beside them which possessed the fertilizing the Crescents lacked. I think from the description given that want of fertilizing is the trouble.

Convention adjourned until 1:30 P. M.

PREVENTION OF APPLE SCAB.

By E. S. GOFF, Professor of Horticulture, University Station, Madison, Wis.

The disease known as "scab" on the apple which produces the black, scaly spots on the surface of the fruit is caused by a fungus known to science as *Fusicladium dendriticum*. It affects not only the fruit, but the foliage of the tree as well, and its injuries are not limited to disfiguring the appearance of the fruit and leaves. The attacked foliage is unable to per-

form its normal functions, the fruits are not properly nourished and the formation of fruit buds for the next year's crop is interfered with. The fungus feeding upon the skin of the apple prevents the fruit from attaining its normal size, and frequently causes it to decay prematurely. The actual loss from this disease is probably much greater than it is usually estimated to be.

A fruit showing the scab in a somewhat aggravated form is shown in Fig. 1. The smaller spots at the left and top of the picture represent the scab as it more frequently appears, but in its worst form it sometimes presents a cracked appearance, not very unlike the larger blotches at the right.

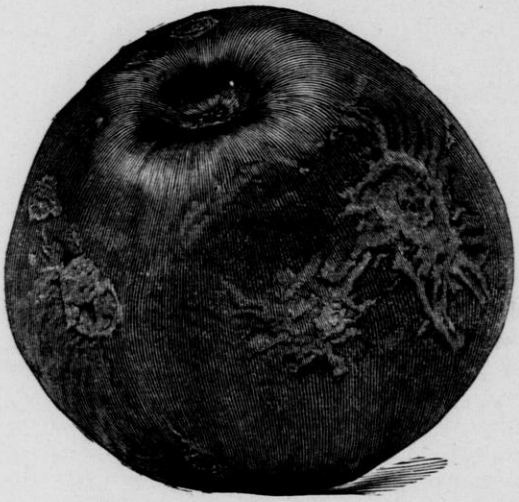


Fig. 1. Showing Apple with Scab Spots.

The apple scab is propgaated by spores, which, alighting upon the moist surface of the leaf or fruit germinate, sending their mycelia beneath the cuticle of the leaf, destroying the epidermis. A moist atmosphere favors the development of the fungus, hence the lower limbs of apple trees are more likely to be affected than others, and old orchards, where the branches have grown close, are usually more infested with it than younger ones.

For some years past the writer has been conducting experiments with the hope of finding an application that would prevent the development of the fungus without injuring the foliage or fruit. Experiments were commenced at the New York agricultural experiment station in 1885, and have since been continued, the trials having been conducted the past season in the orchard of Mr. A. L. Hatch, of Ithaca, Wis. Various materials have been tried with varying degrees of success, but at last we seem to have found a material that meets the requirements. This material is the carbonate of copper, dissolved in ammonia and diluted with water to an extent that renders the solution harmless to the foliage. One ounce of

carbonate of copper is dissolved in one quart of ammonia, and this is then diluted with ninety parts of water, when the solution is applied to the tree with a force pump and hose, fitted with a spraying nozzle.

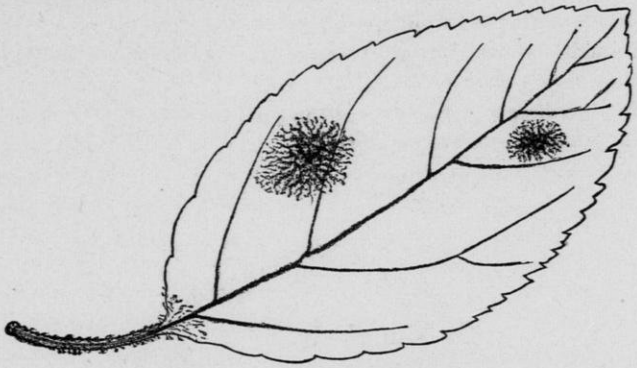
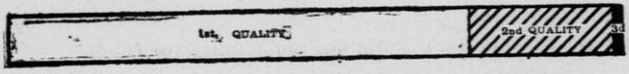


Fig. 2. Showing Scab on Leaf.

The trees, which were of the Fameuse variety, were sprayed seven times, the first application having been made soon after the petals had fallen, and the treatment repeated once in about two weeks, until the seven applications had been given. The crop was harvested in due time and the apples assorted into three qualities. In the first quality were placed only those apples not attacked by the fungus; in the second, those that were slightly injured, but not sufficiently to materially affect their market value, and in the third those more injured.

The fruits standing in the immediate vicinity, but which had not received the treatment, were also gathered and assorted in the same manner, for comparison. The results will strikingly appear from the accompanying illustration.



Fruit from trees sprayed with carbonate of copper solution.

Fruit from check trees—not sprayed.

Fig. 3.

The upper figure represents the fruits from the sprayed trees, and the lower, those from the unsprayed ones. The portion left blank, at the left, represents the first quality; the oblique banded portion in the center, the tbe second, and the black portion at the right, the third quality. It appears that on the sprayed trees 75 per cent. of the fruits were found to be in

the first quality, while but 1⅔ per cent. had to be placed in the third quality. It also appears that on the trees not sprayed only 23.3 per cent. of the fruit was found to be in the first quality, while 22.7 per cent. had to be placed in the third quality. These figures, while they speak the numerical truth, do not show all the benefit that resulted from the spraying, because the second and third qualities on the sprayed trees averaged decidedly better than on those not sprayed. It is evident that the spraying was almost a complete remedy for the disease. The cost of the treatment is very slight, and need not exceed ten or fifteen cents per tree.

ASSEMBLY CHAMBER,

FEBRUARY 6, 1890, 1:30 P. M.

President Smith in the chair.

SCHOOL GROUNDS — WITH ILLUSTRATIONS.

BY "T." OF ST. LOUIS.

[READ BY THE SECRETARY.]

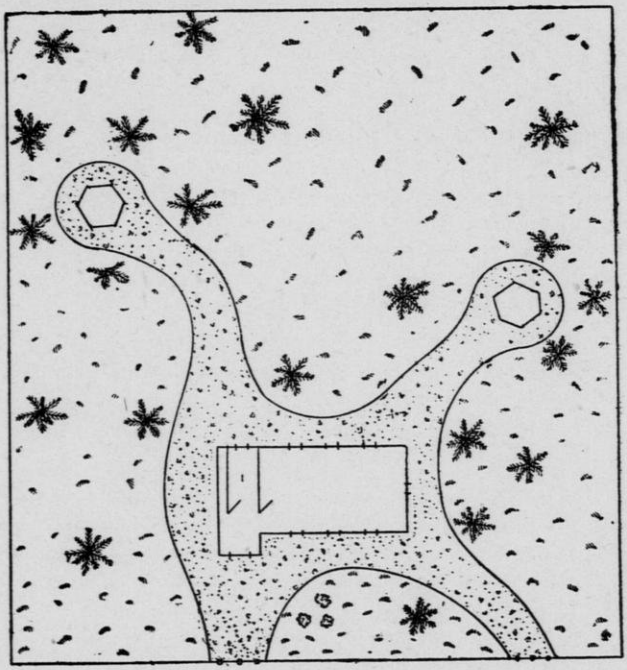
The school-yard, whether in the country, village, or city, must conform to certain requirements. It is the play-ground of the children, and, as such, is a necessary means of affording them the exercise that they require for the preservation of their health and for the best use of their minds within doors. It is also the necessary site of outbuildings that are needed within a convenient distance, yet are usually offensive to more senses than one. It should also in itself serve as an educator, inculcating the principles of good taste, and, perhaps, at the same time giving a little knowledge of natural history, especially in villages, where many children are allowed to grow up without the slightest knowledge of the plants that occur everywhere and yet have neither name nor personality for them.

Where there is opportunity for ample play-grounds, it may not be desirable to make these in any sense a park, for the more gravel there is to run over, and the freer the scholars are to trample it and tear it up, the more good it is likely to do them. It very frequently happens that country schools are abundantly supplied with play room outside of the school-yard. Where this is not the case, if it becomes necessary to put slight restrictions on the pupils, for the sake of preserving the yard, this need not interfere with giving them all necessary exercise, nor need it prevent them from playing any game that is in place in the school grounds.

Probably every man who has ever attended a country school, recalls the unsanitary and glaringly conspicuous privies as the most prominent features of its surroundings. This need not be so, nor need these necessary buildings menace the health of teacher and scholars alike, as they almost

invariably do. While it is best that these buildings shall be in easy sight of the teacher, they can be so concealed from the surrounding streets and property that they need never stand out as prominent features, while it is quite easy to make the little glimpses of them that one does get, pleasant rather than the reverse.

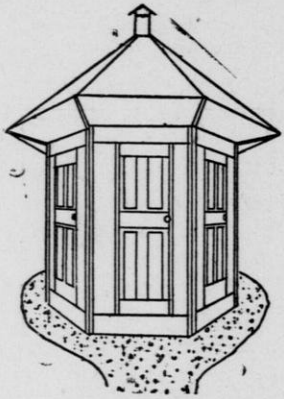
Assuming the unfavorable conditions of a square piece of land, fronting on the street, and surrounded by residence property, as the basis for a proposed school-house of one story, for both boys and girls, I submit the following as one of several ways in which the school-yard can be made to conform to the general principles outlined above.



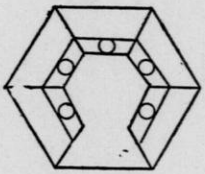
School Grounds.

Fences, though generally admitted to be an evil, provided our neighbors could be made to do to us as we would be done by, are generally required about school grounds, either to keep the herbivora out, or the omnivora in. But a fence is not of necessity a blot upon the landscape. For my school-yard, I would use one of the many ornamental paneled wire fences, broken at two points — one at the length of one or two panels of the fence from one end of the lot; the other a little beyond the middle of its front. The building, a neat little structure with entrance through a tower at one end, stands well back from the street, with the tower directly opposite the second gateway. Neither gateway, however, is closed by a gate, but cattle are kept out by means of several posts set closely enough for this purpose, bu far enough apart to allow the teacher or children easy passage.

From each gateway, a gravel walk runs to the building, cutting off a small lawn of irregular curvature next the fence. At the corners of the school-house, these walks curve round the building, so that except for a little strip of sod under the eaves, this is surrounded by the walk. From each rear corner, a path runs back to the privies — that for girls being at the right and closer to the school-house.



Out-Building.



Ground Plan.

These privies are neat hexagonal structures, some seven feet high under the eaves, and eleven feet in diameter, covered with a steep roof, supported by cross-pieces on the unceiled top of the structure, so that there is free circulation of air through the entire interior and out under the eaves, which project three feet all round, so that their drip is at the outer, drainage side of the gravel path. The building, if neatly made, is an attractive kiosk-structure, and is to be painted in some shade of drab or stone-color, the roof a little brighter. Instead of the unwholesome vault, it is proposed to use dry earth — either sifted sand or land-plaster — with the privy, so that under each seat is set a papier-maché bucket, and in each compartment of the building is a box of the absorbent, with a cup or dipper, and the janitor of the school is expected to look at each privy every day to see that the absorbent is freely used and that the buckets are emptied often enough to prevent them from becoming offensive or dangerous. For this purpose, only five of the six sides of the hexagon are used for entrance to as many isolated sections of the privy, the sixth being locked and giving access to the center of the building, which is a small, hexagon, from which it is possible to remove and empty the pails as they need attention. To keep everything under control, so that willful or careless soiling of the building can be cleansed at once when discovered, the floor should be of cement, and the structure should stand upon the six outer and six inner corner pieces, which are anchored to as many blocks of stone, sunken at the corners so as to be flush with the floor. None of the wood-work, except these corners-posts, comes in contact with the floor, everything else stop-

ping short about four inches above the cement. This construction, which renders it possible for a mop or broom to be passed over every part of the floor, also exposes the feet of persons in the compartments, so that it is easily seen — but only from a short distance — when a given one is occupied. The doors open outward, and are closed by automatic springs.

Instead of using ugly fences or lattice work to cut off these kiosks from too great publicity, I should do this by the discreet use of shrubbery, so that from the street, for instance, nothing more than the roof, with, perhaps, a glimpse of one side, could be seen; and the sides facing adjacent lots would be concealed in the same manner and with equal care. Each of the two buildings is to be even more carefully concealed from the other, and from the walks leading to the other. This, however, does not imply that the school-yard is to be filled with shrubbery, for a few dense shrubs, if planted so as to intercept the view from any given point, will suffice, and those which cover any particular line of view may be far apart if their angular relation to each other is rightly chosen.

Evergreens should for obvious reasons be chosen for this work of masking what is not intended to be seen. On general principles, a variety of species is preferable to one sort, but it is better to use only a few kinds that are perfectly hardy, and can be kept in good order by anyone possessed of a little skill and no particular knowledge of the gardener's art. In Wisconsin, the Arbor Vitæ (*Thuja occidentalis*) and Hemlock (*Tsuga Canadensis*) are pre-eminently adapted to such use. Here and there a dwarf pine (for instance, the Mugho variety of *Pinus monticola*) or a plant of our beautiful evergreen Holly (*Ilex opaca*) can be used further south; but in any case the object should be to distribute these shrubs so that they are not crowded anywhere, and yet intercept the view at all desired points. For certain reasons, it may be best not to plant them so as to prevent the teacher from having an unobstructed view of almost the entire yard from the windows of the school-room, and especially to allow him to command a full view of the paths back of the building.

In a yard such as I have roughly laid out here, it is assumed that the boys and girls are to be allowed to play together, and that they are not forbidden to run over the grass, any slight regulations that may be necessary, being provided by the teacher according to the particular requirements of each case. But if it were decided that the two sexes must have separate play-grounds, I should not secure this end by the erection of either a fence that was at all conspicuous, or of a lattice, but a simple low panelled wire fence of some approved pattern would be used, as giving the necessary barrier (strengthened by the teacher's command), without impairing the ornamental features of the grounds by its own unsightliness, or by cutting off any pleasant view that skillful planting of shrubbery might have created.

Mr. Goodrich, of Milton—If any one who is interested in this question will visit the little village of Milton, he will see just the finest school and just the finest school-ground any where in the whole northwest. The yard can be seen from the Milwaukee track and contains about eight acres. It is surrounded with elms and maples, and I would like to have anyone interested in school-grounds to look at it.

The President—We will now take up the next paper.

DO WE NEED TRIAL STATIONS FOR FRUIT IN WISCONSIN?

BY PROF. E. S. GOFF, UNIVERSITY STATION, MADISON.

If the question were asked, "Do we need a trial station for the orange in the Indian River district of Florida?" sensible people would probably answer "No," because it is already an established fact that the finest varieties of this delicious fruit flourish there in perfection. The answer would be the same if the question were raised with reference to a trial station for the grape in southern California, or for the apple in western New York. On the other hand, if it were asked, "Do we need a trial station for the peach in Central Alaska?" a rational answer would be no, because no one in his senses hopes that this region is or ever can be a peach country.

SUCCESSFUL WISCONSIN ORCHARDISTS.

Do we need trial stations for the apple in Wisconsin? This question is perhaps a more fit subject for debate. The climate of Wisconsin is not, on the one hand, a paradise for the apple; neither is it so rigorous as to forever preclude the hope of successfully cultivating this king of temperate fruits. Some of you incline to the opinion that apple culture in our state is a failure, and that any attempt to encourage it on the part of the state would be a waste of resources. To which I reply that Mr. A. L. Hatch, of Ithaca, Richland county, has sold from an orchard of about twenty acres, more than $4,000 worth of apples in the past four years. Mr. Chas. Hirschinger, of Baraboo, has sold from his orchard more than $2,500 worth of apples in the past two years. Other equally successful orchards might be mentioned.

As a further proof that apple culture is not a failure in our state, I need only remind you that at the New Orleans exposition in 1885, Wisconsin bore off the largest number of premiums of any state north of the parallel of 40 degrees, and east of the Rocky Mountains.

Surely no one who has seen the most excellent display of Wisconsin apples now on exhibition in an adjoining room, will think of longer claiming that our state cannot produce apples. I have seen many fruit displays in

the Empire State, but never one of which the average appearance of the samples was finer than in this one.

HARDINESS OF NATIVE TREES.

Nothwithstanding these successes, it must be admitted that several severe winters a few years since destroyed the great majority of apple trees in Wisconsin; indeed almost all of those that were of varieties native to New York and New England. In a few localities, notably in Waupaca county, many apple trees that had been grown from seed on the same farm on which they now stand and have never been grafted, passed through the recent severe winters successfully, and are still, when not too old, in a fair condition.

In regard to these seedlings I may say that a few of them manifest sufficient character and quality to make them worthy of extensive trial, and it is possible that some of them may yet become valuable additions to our meager list of hardy apples. Our neighbors in Iowa and Minnesota are working in the same direction and they, too, have many new seedlings of promise.

The experiments of Mr. Tuttle at Baraboo indicate that many of the Russian varieties are abundantly hardy for our climate, though the average quality of the fruit does not rank very high.

SYSTEMATIC EXPERIMENTS REQUIRED.

From what I have said it is evident that Wisconsin lies in the debatable ground between the milder climates to the south and east, where the apple rarely suffers from cold, and the frigid regions to the north and northwest, where successful apple-growing cannot be hoped for. To what extent this branch of horticulture is susceptible of development in our state can only be determined by systematic and persistent experiment. How many of the native seedlings of our own and our sister states, and how many of the recently-introduced Russian varieties will prove reliable and profitable in Wisconsin we shall never know, except by thorough and patient trial.

But some are perhaps saying, "granting that productive varieties of good quality can be found that are sufficiently hardy to endure Wisconsin winters, will apple culture prove profitable in our state?" To which I answer, the current market prices received for good winter apples in Wisconsin are nearly or quite double what they are in western New York, which is, I think, a sufficient auswer to this question. Will these favorable prices continue? I can see no reason for doubting it. We do not expect great reductions in freights, which, until we are able to glut our own markets with Wisconsin apples, is the only thing that can bring down the prices of eastern fruit. Furthermore, great regions to the north and west, beyond the limits of apple culture, are rapidly being settled up, which will stand ready to relieve us of any surplus of apples we are likely to produce.

POSSIBILITIES OF SUCCESS.

I fully believe that, given varieties of apples that the farmer can depend upon for hardiness, productiveness and quality, the production of apples will become one of the most profitable branches of Wisconsin farming. I further believe, and base my fate on a personal examination of all the orchards of which I have spoken, and a careful study of the seedling apples of Waupaca county, that we already have some such apples. What we need now is to demonstrate it to the farmers of our state and the business of apple production will be established. But who is to carry on the necessary experiments? Shall it be left entirely to the individual farmer to purchase and care for trees, the value and adaptability of which he cannot know until years of patience and costly waiting? My faith in the Wisconsin farmer is such that I fully believe he will make these experiments himself if he must. This is exactly what Mr. Peffer, Mr. Hirschinger, Mr. Hatch and several others have been doing for the last quarter of a century. But can we afford to wait for the desired results to come in this necessarily slow and costly way?

THE PLAN PROPOSED.

Will it not be policy for all who have the highest prosperity of the agriculture of our state at heart to lend a hand toward the development of this new industry?

What do we propose to do? Simply this: Establish a dozen or more experimental orchards in as many different sections of our state, particularly in the more northern parts, and on these gather together all of the more promising seedlings from this and other northern states, including the more promising among the Russian varieties.

These orchards should be placed in charge of our State Horticultural society, which would appoint some suitable person whose business it should be to keep a look-out for promising new seedlings, and as soon as he finds one, to propagate a sufficient number of the trees to supply these experimental orchards. This person should also be expected to visit the orchards once a year or oftener, in order to know that they are receiving proper care. He should also be expected to make such reports to the society from time to time as they shall require. In this way the farmers of our state will be able to form a reasonably accurate judgment in the course of a few years of what varieties are most likely to prove satisfactory in their respective districts.

COST OF THE EXPERIMENT.

How much would such a scheme cost?

The expenses connected with such a system of trial orchards need not be large. It would not necessitate the purchase of the ground, the erection of any buildings nor the maintenance of any salaried officers. Suitable grounds could be leased for a term of years, the owner to retain possession

and reserve the privilege of such culture as would not interfere with the well-being of the trees or other plants under trial upon them.

As the trees or plants commenced to bear, their product might be expected to make a partial recompense for the care of the trees and keeping the grounds in order.

As the area needed in any individual orchard will not exceed twenty acres, for some years to come, and as the only expense required is the lease of the ground and the cost of planting it out and keeping it in order the cost cannot become burdensome.

I have here spoken chiefly of the apple. It may also be desirable to test native plums and possibly other fruits at these trial stations, but the apple will doubtless be the chief consideration, and it will be for this fruit that we shall require the greatest amount of room.

TO AMALGAMATE VARIETIES.

I have in mind, also, the development of a new class of seedling apples from crosses between such of the iron-clad Russians as the Hibernal and the best of our hardy native varieties, by which we may reasonably hope to combine the hardiness of the former with the quality of the latter. Also the testing of the adaptability of the Hibernal and other Russians of unquestioned hardiness as stocks for top working our best native varieties of which the trunks are lacking in hardiness.

There is certainly a field for work here which promises results of the very highest value that may be developed at a very trifling cost, and it is a work which we cannot afford longer to postpone.

The Horticultural Society adopted the following in relation to Prof. Goff's paper:

Resolved, That we heartily endorse the recommendation of Prof. Goff in relation to the establishment of trial stations for testing varieties of the apple and other fruits and that we urge the society to carry it into effect as early as convenient.

Mr. Arnold — Was it your idea to have four permanent stations in the state?

Prof Goff — I did not specify any number.

Mr. J. M. Smith — The object as I understand it, is to have some stations, two or three or as many as we can, where the different kinds of fruit known to be hardy can be grown and experimented upon. Those so far as they have been tried which have been successful. It is doubtful whether we shall succeed in getting any one apple that will do well in all parts of the state. The Duchess is

successful in the eastern parts. We want to get varieties which we can safely use all over the state if possible, but as long as this is not practicable we ought to make a study of the apples that can be grown in such and such parts of the state under such and such conditions. We have been blamed in the past for being too ready to recommend. We want to see what the probability of making successful apple orchards is by these trial stations.

PRIZE ESSAY—NATIVE TREES AND SHRUBS OF WISCONSIN.

BY MISS NORA F. ADAMS, EVANSVILLE, WIS.

"What a noble gift to man are the forests!" How grateful ought we to be for their utility and their beauty. Long before Father Marquette sailed down the Wisconsin river in his birch-bark canoe, had the red man, in search of game, wandered through the forests that bordered on its banks, and Hiawatha must have passed through the northern pines on his way to the Dakotah's, for it is said he made his camp-fires of the dry cones. We hear that the state of Wisconsin was densely covered with forests, from the pines and hemlocks of the north to the oak and elm in the south. The hills were crowned with trees that reared their lofty heads toward the sky, and stretched out their limbs robed in gorgeous foliage. But the extensive fires and the multiplied lumbermen have thinned their ranks, to a great extent. The forest area of Wisconsin is at the present time about 17,000,000 acres, and on these noble forests largely depends the wealth, beauty, fertility and healthfulness of the state.

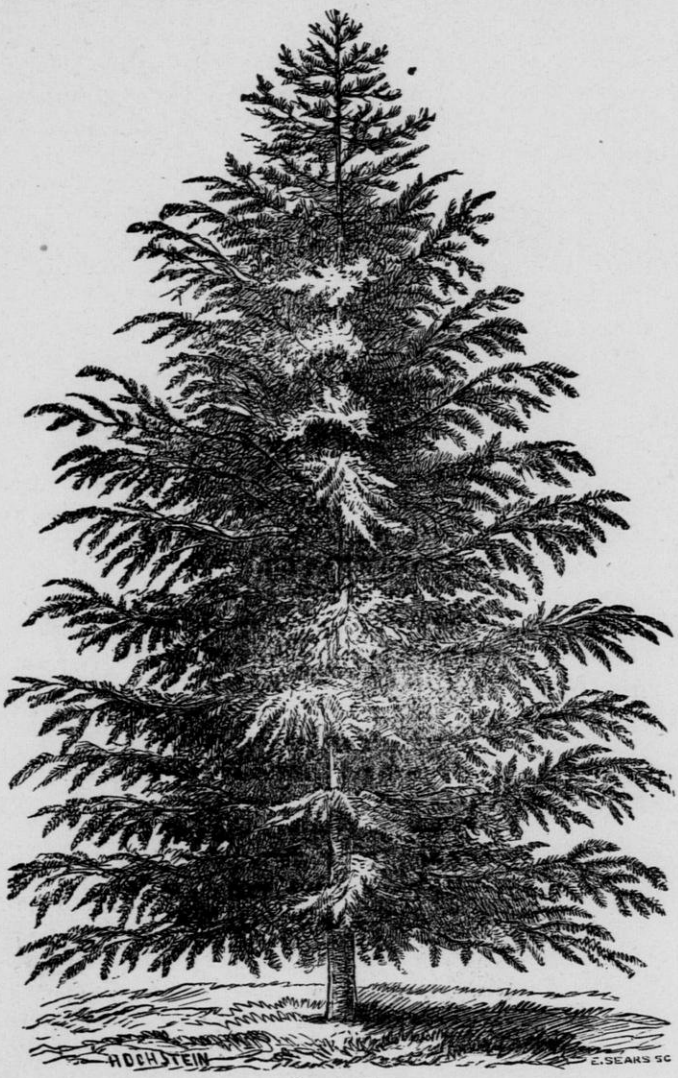
In the northern part of the state we still find our pine intermingled with spruce and hemlock. The pine is a resinous, cone-bearing tree with slender, needle-like leaves, growing from a membranous sheath.

Wisconsin, Michigan and Minnesota are the only states that are able to furnish white pine beyond the wants of their own respective borders. This tree is much admired for its beauty. It has a straight trunk that grows from sixty to eighty feet in height, and its spreading branches, densely clothed with green foliage, contrasts strongly with its fiery red-brown bark.

The Rega pine is a tall tree that keeps its size to half or more of its height; it has a few strong branches; its bark is of a yellowish red color; its cones are short and small, the tree grows rapidly and the lumber is elastic and valuable.

The red, or Norway pine, grows rapidly on sandy soil. The timber is strong and resinous and is used for building and in the manufacture of wagons.

The Black Jack pine derives its name from the extreme depth of its foliage tints. The sharp rigid leaves, of a dark green hue, give a somber aspect to the tree. The wood is manufactured into pulp for white paper.



Spruce Tree.

The Yellow Jack is of slow growth, the lower limbs spread horizontally and the upper ones converge toward the trunk; the leaves are of a bluish green; the timber is very durable and is used in house building.

Symmetry, grace and a certain refined freedom are the characteristics which we observe in our hemlocks. This tree is always a favorite wit h

the lover of sylvian beauty; the branches are slender and drooping, its foliage is dense and retains its dark green color in all seasons. The wood is coarse in its texture but is strong and serviceable. The bark is valuable for tanning leather.

The firs are distinguished from the pines and larches by having their leaves placed singly on the shoot, instead of growing in clusters from a sheath, and the cone scales are smooth and even. They usually have a straight trunk and a tendency to a pyramidal growth, sending out, each year, a whorl of branches.

The spruce is another of our tall trees, sometimes reaching the height of forty and fifty feet. The limbs spread out and downward. The black spruce is found chiefly on swampy lands, where the soil is black and deep. The blue spruce is somewhat like the white, its leaves are of a blue hue, hence its name.

Our balsam is an ornamental tree of ordinary height, the trunk tapering rapidly from the bottom upwards. The bark is smooth and the branches are spreading. The wood is soft and white.

The Arbor Vitæ usually grows on low swampy land. It has a straight trunk that sometimes attains the height of sixty or seventy feet. When closely grown in forests it is destitute of branches for three-fourths of its height. It has dark green, flat leaves. The wood is light and easily worked and it is preferred to any other for household use, and is highly valued for shingles.

The red cedar grows along the banks of rivers. It grows to an ordinary size, the limbs are long and spreading. The timber is very durable, and when used for posts will last for forty or fifty years. It in much used in the manufacture of lead pencils.

The larches are not evergreens like most other coniferous trees. They have straight slender trunks, spreadihg branches and soft, threadlike, blueish green leaves and a drooping graceful appearance.

The tamarac usually grows in swamps. They are of small growth, and and have fine foliage. The wood is considered valuable and is extensively used for hop-poles and rails.

We will now leave the evergreens and direct our attention to the forests of the central and southern portion of our state.

Here we find the grand old oak "Monarch of the woods." We have several species of this wood, of which the white oak is one of the most valuable. This is one of our largest trees, having a thick trunk and spreading boughs, and a whitish bark, its leaves are irregular, large and glossy. Its wood, being hard, is used for car and ship building, also for the manufacture of wagons. The burr oak is not so large but is tough and the timber is used for fence posts. This tree yields an abundance of large acorns. Our red oak is a beautiful tree, its large leaves which are pink in spring turn to a glossy green in summer and then in autumn to a purple red; the timber is strong and flexible, and is in demand for the manufacture of casks.

The black oak is found on sandy ridges. Its bark is used for dying and tanning.

The pin oak is a handsome tree with a conical head and light leaves. The acorns are small and round.

The yellow oak is a tall and handsome tree, reaching the height of sixty or seventy feet. The trunk is usually slender. It grows in rich cool soils and is oftener found in valleys than elsewhere. The bark resembles that of the white oak, the leaves are much like those of the chestnut. The acorns are quite small and are sweet.

Our hickories are generally large, fine looking, noble trees, with straight, symmetrical trunks, and handsome pinnated foliage. They are highly esteemed on account of their durable timber, and excellent nuts. The timber is very elastic; hence it is used for hoop making, ax handles and farming implements. The bitternut hickory is a fine shade tree, as it has wide-spreading limbs and dense foliage. The shag-bark hickory is a tree which artists like for the picturesque effect of its irregular branches.

We have two kinds of walnuts. The black walnut grows quite rapidly on loamy soil. It has large, spreading branches. The timber is in great demand for gun stocks, cabinet work and for the inside finish of houses.

This tree yields an abundance of nuts which we all love to crack and eat around the winter fire. The butternut tree is not so large as the black walnut. The wood is fine-grained and easily worked, it is of a light brown color. The nuts grow in clusters.

Now we will turn to our birches: Our canoe birch has been fitly called the "Lady of the Forests." Its size is medium; its branches are long and slender and covered with rich dark-green foliage. Its splendid spring tassels were wont to be worn by Indian chieftains with great pomp at the feasts of their tribes. The bark occurs in fine, soft layers, the outer cuticile peels off in white papery sheets. The wood is valuable to carriage builders on account of its toughness.

The yellow birch grows on low damp soil. It has numerous branches. The wood is fine-grained and makes handsome furniture.

Along the banks of our streams can be found our river birches which are something like the yellow birch.

The ash is a large tree but does not thrive on poor dry soil.

The white ash has numerous branches and smooth green leaves. The wood is useful for furniture, and also for the manufacture of agricultural implements.

The black ash is more elastic than any other species. It splits easily into thin narrow strips which are used for baskets and hoops. The maple is another handsome tree. It always stands erect and is a rapid grower. The hard sugar maple is most valuable. The wood is fine-grained and has a silky luster when polished. It is employed in cabinet work and architecture. We all know the delicious sugar made from the sap of this tree. The red or soft maple is not so valuable as the hard, but its timber is used

for furniture. The box elder grows along the banks of our streams and is sometimes used as an ornamental shade tree. The tulip or white wood exhibits the nearest approach to the magnolias of the south. It is a stately tree. Its leaves are glossy-green and beautiful at all times, and its blossoms are its special charm in June. The wood is easily wrought and is durable. The horn-beam is a small tree with foliage resembling that of the black birch. In open ground this tree makes a broad, low, leafy head of much beauty. It colors finely in autumn, presenting a mingling of purple with scarlet and crimson.

Wisconsin Willow.

The white willow is another of our native trees which grows very rapidly to quite a height, and is frequently used to form hedges and windbreaks.

The button wood is found chiefly along the river bottoms. The wood is soft and white and is almost devoid of knots. It is sometimes used for boat building. The white poplar has a spreading head, curved branches, white or grayish bark, the upper side of the leaves are dark green, while the lower side is clothed with dense white down. The wood is used by turners and toy makers.

The cherry, of which we have two kinds, is a useful tree. The black cherry is a fine ornamental tree and when fully grown, the wood is highly esteemed for cabinet work, the wood being fine grained and not liable to warp. It is of a light red color. The fruit is of a purple black color.

The red cherry is not so large as the black, the leaves are long and narrow, and of a shining green. The fruit is round and light red.

The linden or bass wood is a good shade tree. The leaves are smooth, green, and somewhat thick. Bees are fond of the flowers and gather from them an abundance of honey of best quality. The wood is light and soft.

Our elm is a beautiful tree whose branches in their graceful, downward curves, resemble a Greek vase. We have two species of this tree. The white and the red, and we usually find them adorning the banks of our streams. The wood of the white elm is employed for the naves of wheels, panels of carriages, and various other purposes. The red elm seldom exceeds fifty feet in height. The timber makes good rails and is used for the hubs in carriage and wagon wheels.

Wisconsin can boast of many shrubs, of which the flame colored sumac is both valuable and ornamental. It is bushy and thornless, its branches, while young, are covered with a down. The fruit, which is a purple drupe, is also covered with down. The leaves yield an acid that is valuable for dying and also for tanning purposes.

The red willow is found on low, wet land; when young it is also covered with white down. The bark is red, the leaf narrow and flat.

The crab apple is a thorny tree, its spreading branches are clothed with dark green leaves and adorned with sweet-scented pink blossoms. The fruit is small and is not considered of any use.

The plum is another thorny tree with shaggy branches. The fruit is round and of a purplish color when ripe, with which I am sure we are all acquainted, especially in the form of plum pudding.

The elderberry is a shrub that has a single stem that branches near the top. It has large dark green leaves. The berries are round and small and of a dark red color. The purple hazel is found growing among the oaks and elms, it has large dark green leaves and we are well acquainted with the nuts. The gooseberry is a thorny bush, with shaggy branches. Its berry is round and of a purplish color when ripe. The fruit is used in its wild state.

The blackberry is also a thorny shrub. It sends forth numerous sprouts from an underground branch.

Our huckleberry grows in almost all parts of the state. It is a low shrub

with stiff, crooked branches. It is chiefly found on low land. It grows, however, on dry soil. It has rather large leaves of a dark green color. It produces a small, black, edible berry of pleasant flavor.

The blueberry does not grow as high as the huckleberry. The leaves are smaller and have a paler color. The berry is round and of a dark blue color. They do not contain as many seeds as do the huckleberry.

Our forests are valuable not only when hewn by the lumbermen and moulded into a house, ship or machine, but they also hold back, with their mighty arms, the great snows of winter and thus prevent the torrents and destructive freshets of spring.

The dense carpet of leaves creates a sponge-like surface which absorbs and retains the rain and melting snows that thus gradually soak into the soil. Protected from the sun by these forests and dense underbrush and moss, the snow melts slowly and is checked on the hillsides till it can filter into the soil for the gradual feeding of springs and rivers, and thus prevents drouths.

The leaves of the trees take up the unhealthy carbon from the air, and in return give out oxygen, and thus are a means of purifying the atmosphere, and we generally find the water from the springs in our pineries cool and pure. We all know the value of shade trees as a protection from the hot summer rays of the sun, for both man and beast, and those living on farms realize a protection from the cold winds and snows of winter. In autumn the beauties of our forests reach a culmination. All unnoticed a metamorphosis has been silently going on. The tender vivid green of spring has deepened in richness and tone until wood and vale catch the hectic flush of a dying summer, and burst forth in a glory of color as if

"All earth had blossomed out into one grand Corinthian flower."

PRIZE ESSAY — THE WILD PLANTS OF WISCONSIN.

BY MISS DORA S. HAVILAND, JANESVILLE, WIS.

Mr. President, Ladies and Gentlemen of the Wisconsin State Horticultural Society — It is very pleasant to one when passing along our high-ways, to look about and see the varieties of wild plants, of which many are pretty, useful and quite handsome, while others are very injurious.

Wild is prefixed to the name of many plants to distinguish them from such of the same name as are cultivated in gardens.

The name weed is given to all those plants which grow wild in cultivated grounds and injure the crops; some may gradually be got rid of by merely cultivating for a succession of years, while with others it is very difficult unless the plant is cut before its time of seeding.

Having spoken of wild plants in general, I will now treat with them in classes.

It is one of the well known facts that the lands of careful farmers should not become annually seeded with weeds from the grounds of their more careless neighbors. This state has a law preventing that injustice, which is as follows: "Every person and corporation shall destroy, upon all lands which he or they may own, occupy or control, all weeds known as Canada thistles (*Cincus arveusis*), white or ox-eye daisy (*Chrysanthemum leucanthemum*), burdock (*Arctium lappa*), cocklebur (*Xanthium strumarium*), snapdragon or toad flax (*Linaria vulgaris*), sour dock and yellow dock (*Rumex crispus*), and sow thistle (*Sochus arvensis*), at such time and in such manner as shall prevent their bearing seed."

It is the business of the weed commissioner to carefully direct the destruction of said noxious weeds in his township or precinct.

We have found it to be a matter of interest that all the weeds which have been condemned by this state, were introduced from Europe.

Canada thistle, the first mentioned noxious weed, has a rather slender stem which grows one to three feet tall, and matures a great many purple flower heads; its seeds bear a very light downy papus, by means of which they are easily disseminated. The root of Canada thistle is perennial, and sends in all directions vigorous underground stems; owing to this quality, it is enabled to spread rapidly and become so difficult of extermination. It is certainly a very tenacious weed, and it has attracted more attention, and been the subject of as much, if not more, discussion, than any other weed that has ever made our acquaintance. What ever will keep the plant from light and air will destroy it.

Ox-eye daisy, or white weed, is much less injurious to crops than the Canada thistle. It propagates by its seeds, of which it produces a great quantity, and also by its creeping rootstocks; it is a perennial plant and is the most troublesome in meadows or pasture lands. The stems of ox-eye daisy are from one to two feet high, and thinly clothed with narrow coarsely toothed leaves; in agriculture it is universally regarded as an intruder, which yields only to annual ploughing and cropping of the ground.

Burdock, like the ox-eye daisy, progagates by its seeds. This plant ought not to be tolerated as it is very disagreeable, and its clinging burrs are an annoyance to man, and often an injury to domestic animals. In the rapidity of its growth and the size of its leaves, it rivals the garden rhubarb, and under favorable conditions the stem occasionally grows to the height of six feet. Though not particularly troublesome in cultivated land, the burdock intrudes itself into nearly all waste places where the ground is rich and where the negligence of the owners allow it to exist. The burdock is used to some extent in medicine. As it is a biennial plant it is quite easily destroyed.

Cocklebur, or clotbur, is the only plant named in the weed law which lives but one season; it is a very common, rapid growing coarse weed, with irregular branches or stems, which grow to the height of one to two feet; its burrs, like those of the burdock, cling to clothing and to the coat

of animals. It is said that each burr, when mature, encloses two seeds, one of which may grow the first year and the other lies dormant until later; owing to this fact, the difficulty of exterminating this plant is much increased.

Toad-flax or Ramstead is a plant which grows to the height of from one to two feet, and bears showy, yellow flowers. The leaves somewhat resemble those of flax. This perennial has invaded Wisconsin in many localities, and is propagated by its seeds as well as by its creeping rootstocks. It is said to have been first introduced into this state as a flower garden plant, but its disposition for monopolizing the soil has caused it to be named among the noxious weeds.

Yellow dock or sour dock, is a rank, coarse, perennial weed. The somewhat slender, rather grooved, branching stem grows to the height of three or four feet, which bears a plume-like compound raceme of greenish flowers; these are followed by numerous angular brown seeds, which resemble a kernel of buckwheat in form. This plant has a long spindle shaped root and is usually an occupant of waste lands. Another species which resembles this has blunt pointed and less curled leaves, while still another has thickish, paler green leaves which are scarcely curled at all on the borders.

All of these species are useless weeds.

Sow thistle plant is softer and less rigid than that of either the Canada thistle or bull thistle. The leaves are deeply cut and gashed, and somewhat curled, but not so much so as the Canada thistle. The stem is free from prickles and grows from one to two feet tall; it is hollow, rather angular, and a milky juice oozes forth when it is cut. Bright yellow flowers are produced in large heads at the top of each stem. The plant is a perennial, and like the Canada thistle, propagates by creeping rootstocks; it does not seem to be largely introduced into this state, but it is gradually becoming more common, and is said to be a somewhat aggressive weed, and rather difficult to destroy where it has gained a foothold.

The foregoing includes all the weeds mentioned in the weed law. Although the weed commissioners do not enforce the destruction of those weeds that are not mentioned in the law, some plants are, however, getting sufficiently troublesome in parts of the state to render some effort concerning their destruction very desirable. In this second division may be named mustard, or charlock (*Brassica sinapistrum*), couch grass (*agropyrum repens*), shepherd's purse (*Capsella burso-pastous*), pig weed (*Chenopodium album*), wild buckwheat (*Polygonum convolvulus*), and wild morning glory (*Convolvulus arvensis*).

Mustard, or charlock is a coarse, rough annual, that has become very abundant in parts of Wisconsin, resembling in general appearance the garden radish with the exception that it has an irregular, branching root. The stem and branches bear clusters of yellow flowers. The seeds have a harsh, biting taste and somewhat resemble those of cabbage. This plant is the most troublesome in barley and oat fields.

Couch, quack or dog grass has been found to have some excellent qualities as a fodder plant, but its disposition to monopolize and keep possession of the soil renders it a great enemy to rotative cropping. The plants send forth vigorous underground stems which often show their power in growing through small pieces of wood or potatoes that chance to lie in their path. The new plants, formed by cutting up the old ones, grow with great force, and the result is many weeds in the place of one.

Shepherd's purse is an upright plant, an annual, usually about a foot high. The larger leaves, which resemble those of the dandelion, grow mostly near the base of the stem; the upper leaves are much smaller, and somewhat arrow shaped. The flowers are very small and at first quite crowded near the end of each branch. The seeds are borne in little narrow pods which are similar to a purse in shape, from which the name of the plant is taken. This plant grows in great abundance in gardens and other cultivated lands, but as it is propagated only by seed it cannot endure culture.

Pig weed is not very difficult of extermination, but as it is especially fertile and of a very rapid growth, it often damages crops; this plant is most abundant in gardens, and other rich cultivated grounds, where it will often nearly monopolize the soil if permitted to do so. Under certain conditions the plant, which is an annual, will grow to the height of five or six feet. The stem is angular, woody and somewhat branched. The flower clusters are covered with a whitish powder, which at times extend to the leaves. The little black seeds are enclosed in greenish seed cases, from which they are not easily separated.

Wild buckwheat, or black bind weed, is a twining or creeping annual. The flowers are small and borne in loose racemes. The seeds resemble those of buckwheat. This plant is injurious to crops by twining about the stems of cultivated plants.

Wild morning glory. or bind weed, resembles the latter in the general appearance of its leaves and stems, but it is larger in all its parts, and its leaves are not so nearly heart shaped. This creeping plant has an annual stem with a perennial root. The white flowers are shaped somewhat like those of the garden petunia; they open usually in the morning, whence the common name. The plant is a rapid grower and propagates by means of its fleshy roots. It is very injurious to corn as it twines about the stalks and prevents their growth. It is a difficult plant to subdue where it has secured a foothold. Under the third class I will consider plants that are less offensive than those of the second, but are of little or no use to man, and greatly add to the cares of the farmer and gardner.

Ragweed of the genus (*ambrosia*), a well known intruder, will introduce this class. This miserable coarse weed is sterile and fertile. The flowers occupy different heads on the same plant. It has opposite alternate lobed or dissected leaves, and inconspicuous greenish or whitish flowers pro-

duced throughout late summer and autumn. Although it propagates only by its seed it is found almost everywhere in waste places.

Bouncing Bet (*officinails*) was introduced from Europe as a plant for the flower garden. It is a stout perennial with large rose colored flowers, commonly double. This plant may be seen in blossom from July to September, along the roadsides and in waste places. It propagates by its fleshy underground roots and would extend over a large space of ground in a short time.

May weed (*marutacatula*) is a member of the composite family having a strong odor. It is a native of Europe with a small white flower which is quite attractive. It propagates rapidly and is found by the roadsides, seldom troubling cultivated land.

Wild parsnip (*pastinacasative*) is a biennial umbelliferous plant; having strayed from the garden it is found growing wild. Being materially affected in its nature and habits, its root becomes small, strong and acrid, and is regarded as a noxious weed.

Fireweed (*erechthites*) is an erect, coarse annual, of the composite family, having a rank smell with alternate simple leaves and heads bearing many whitish flowers. This weed is found in moist woods, especially in recent clearings where the ground has been burned over, whence the popular name.

Sorrel is a hardy perennial, rooted, herbaceous plant of the genus (*rumex*); it has come from abroad and in some soils proves exceedingly troublesome. A very common weed introduced from Europe is the yellow wood sorrel. It occurs in deep cold woods near Lake Superior and northward by roadsides and in gardens, assuming a variety of forms as the soil is barren or fertile, and blossoms throughout the season. The dock sorrel is also a native of Europe.

Trumpet weed, or Joe Pyne weed (*enpatorium*), is a herbaceous plant of the composite family. Its stems are tall and stout; the leaves simple, three to six in a whorl; they are pointed, very veiny and roughish, including several nominal species. This plant is very common, especially in low grounds.

Corncockle (*githoego*) is an annual of the pink family, clothed with long, soft appressed hairs, a weed too common in the wheat fields, the black seeds of the cockle being injurious to the appearance of flour.

Heart seed (*cardiosperium*) is the name of quite a common plant which has round seeds marked with a spot like a heart.

Nettle is a plant of the genus (*urtica*) derived from Latin *uro*, to burn. It is a herbaceous plant armed with hairs which produces a burning sensation. The large stinging nettle grows in clusters about the roadsides with stems from two to six feet high. The small nettle is an annual, appearing in rich gardens as a weed. Both of these have been imported from Europe.

In the fourth class I will speak of plants, which are still less troublesome

than the plants of the third class, and in certain cases have some good qualities.

The dandelion will commence this order; this name is taken from French dent, de, lion, meaning lion's tooth, on account of the size and form of its leaves. The plant has a perennial root with bitter milky juice, and the leaves when blanched are used as a salad. Under cultivation, the plants forced to extraordinary size, to serve in the spring for a popular and much esteemed pot herb under the name of greens. In medicine the expressed juice, especially of the root is employed. The yellow flowers of the dandelion are very conspicious in the meadows and grassy fields, in early spring, and are hailed as the harbinger of warm weather.

Rush is a plant of the genus (*juncus*) from Latin jungo, to join or bind, the rush being used for tying. The rushes are grass-like herbs with jointed stems, and their flowers in general aspect and texture grass-like. The common rush has a perennial root, a leafless, often sterile stem filled with spongy pitch; it is found in waste and low lands.

Mullein it a plant of the figwort family, belonging to the genues (*verbescum*). The common mullein is a tall plant introduced from Europe; and grows universally upon thin, sandy and sterile soils, marking by its excessive abundance a negligent husbandry. The flowers are conspicuously showy, in a dense terminal spike, and of handsome bright yellow color. The entire plant has a hairy covering which renders the large radical leaves soft like velvet. The properties of mullein, according to Lindly, are poisonous in the seed and flower. The foliage is acrid, bitterish and is used as a domestic remedy.

Sedge is a large genus of herbaceous perennial plants. At first aspect the sedges resemble the grasses, but in structure there is an essential difference. They are found growing in large tufts or tussocks in bogs, or in patches on warm sunny hill-sides, or singly in moist shady woods; economically they are of little use.

Wild oats are common in sterile soils; the seeds of the same are inclosed in stiff, hairy husks, each having a long and remarkable hydrometric arm. this when dry is twisted closely upon itself; but when moistened by dew or rain it slowly recoils causing the seeds to sprawl about the ground.

Wild peas. Although this plant is not very plenty it is quite well acquainted with Wisconsin, and bears a papilionaceons flower.

Ground cherry is a plant of the genus (*Physalis viscosa*). The plant is about half an inch in diameter, yellowish or amber colored; the berries enclosed in the calyx fall as soon as full grown, and do not readily reach complete ripeness. The plants come up abundantly from self-sown seed, and and are disposed to be weeds.

Wild strawberry plants are strawberry plants in the natural form. Strong cultivation has effected many changes in the habit and form of foliage and fruit.

Water cress is a salad plant of the natural order (*Cruciferæ*), found

growing spontaneously in ditches and small clear streams. Its roots are perennial; the strong white fibres striking into mud or gravel; several stems rise from the same crown and grow to the height of eighteen inches. The flowers are in loose spikes at the end of the branches, small and white. The pods are short, tapering and full of small brown seed. Water cress is considered a wholesome salad.

Plantain is a genus (*plantago*) of humble weedlike plants, which are stemless herbs with a tuft of spreading leaves. Our species have slender leafless flower stalks from six to twelve inches long, and are found almost everywhere around dwellings, having ovate or slightly heart-shaped leaves which have long had a popular reputation as a beneficial cooling application to bruises.

In the next class, or Class No. 5, I will mention some plants which have medical uses, beginning with the well-known plant named

Catnip or Catmint; this is a perennial herbaceous plant of the genus (*Nepeta cataria*), which is very common in the fields and is supposed to have been introduced from Europe. The leaves of this plant possess medical virtues, which act as a tonic and excitant. Toothache is said to be sometimes cured by chewing the leaves.

Thoroughwort, or boneset, is a common plant found in low wet grounds and valued for its medicinal properties. It is a perennial herb of the composite family, bearing bluish or purple blossoms appearing near the close of summer. This plant is distinguished by the perfoliate character of its leaves. It is a bitter weed or vegetable tonic with a faint odor and a strong, bitter taste.

Snake root is a perennial plant with twisted branched rootlets; the smaller roots are preferred in pharmacy because they possess stimulating and tonic properties. They are found in rich wood lands throughout the United States.

Smart weed, or water pepper, a member of the buckwheat family of the genus (*polygonum*), so-called on account of its acrimony, which produces smarting if applied where the skin is tender. It is an annual growing in moist or wet grounds, its flowers are mostly greenish, and it is sometimes used as a medical remedy.

Mother wort, an herb of the genus (*leonurus*) is a homely plant introduced from Europe, belonging to the mint family; it is frequently met with around fences and neglected spots near farms and gardens. The flowers will be found to be very pretty if carefully examined. The seeds are numerous and vegetate freely. Mother wort has a bitter taste and is used popularly in medicine.

Besides these plants, we have a certain class of plants that tend to brighten the way wherever they chance to be, and the name weed seems to be most too radical a term for this class, which I will number as the sixth and last division of wild plants; first mentioning a very familiar plant.

The golden rod of the genus (*solidago*), from Latin solido, to make firm. Numerous perennial plants bear this name, whose showy heads of flowers,

waving like golden wands, make bright and gay the sides of roads, hills, and gravelly banks in autumn.

The flowers themselves differ only from the asters in pappus or silky hairs.

The American cowslip, a species of primrose, is one of our most beautiful wild plants. It is a smooth perennial with a cluster of oblong leaves, and a naked stem a foot or more high, bearing an umbel of pale blue flowers, each one of which droops in a graceful manner, giving it an appearance that no doubt suggested the name "shooting star," which it frequently bears.

Bluebell is a common wild plant, among the first to appear blossoming in spring. The flower is a very pretty light blue, bell shaped, and grows from three to six inches high.

Grandpa's grey beard (or *Geum*) is a plant appearing early in the season, very common on the prairies. At a certain stage, white, silky hairs appear in a cluster resembling a beard, whence the name comes.

Buttercup also welcomes spring, with a little bright solitary yellow flower, an annual of the crowfoot family; also called golden cap, butter flower, and king cup, the cuckoo-bud of Shakespeare.

Violet is a plant and flower of the genus (*viola*) of many species; they are generally low, herbaceous plants, and the flowers of many of the species are of some shade of blue.

The fern is an order of (*filices*) commonly herbaceous plants, with permanent root-like stems buried under the soil, creeping over the surrounding objects and between crevices of rocks producing from extremities a succession of new leaves from year to year. All ferns have beautiful leaves and most of them appear to be flowerless. The value of ferns is chiefly medical. The common brake is a species of fern.

Wild rose is a plant and flower of the genus (*rosa*) of many species and varieties; as the wild canine dog rose, the white rose, and the red rose. This plant is a shrub with odd leaves and prickly branches growing from one to two feet high bearing flowers in May and June. It is distinguished for the beauty and fragrance of its flowers, which have five petals of delicate pink color.

Milk weed is the popular name for plants of the genus (*asclepias*), herbaceous with thick deep roots and mostly with a copious, milky juice. Few plants present flowers in which the ordinary floral structure is so obscure. On account of the silky hairs belonging to the seed the plant is frequently called silk weed. The beauty of the silk of the seeds early attracted attention and many attempts have been made to utilize it, but the hairs are very weak and brittle, and without the roughness or angularity which makes it possible to spin other fibres.

Daisies are found among wild plants in many varieties. In the wild state the flower is borne upon a long slender peduncle; of these varieties, the hen and chickens is the most singular, where the main flower heads are surrounded by several small heads.

Wild aster is a very common plant along our roadside, its flowers are radiate with rays, white, purple or blue. The plants are mostly annuals.

Cat's-tail is a tall weed, or flag, of the cat-tail family, with long, flat leaves and having its flowers in a close cylindrical spike at the top of the stem. Its perennial root is usually found in or near a marsh. The leaves are sometimes used for seating chairs, making mats, etc. And last but not least, I will mention the beautiful pond or water lily, which is found in great abundance upon certain places on the rivers and in muddy ponds. Its rootstocks are large, thick and knotted deeply, imbedding themselves in the mud, and throwing up numerous long perforated stems, supporting rounded kidney shaped leaves. The flower stalk is also long and perforated, supporting a large pure white flower, of which the stamens are numerous and in several rows. The flowers open in the morning and close at night, throwing out a delicious perfume.

Thomas Baskerville, in 1839 made some good remarks on the supposed superiority of some plants over others; when in reality, every one is perfectly fitted for its place in the series of being.

Secretary Hoxie—I do not know that I have stated, that the object of these essays grew out of the question, "How shall we interest the young people in horticulture." You will at once see the difficulty a person has to labor under to give a complete description of plants and flowers without infringing on other's productions. The younglady, where she has taken extracts, has given the proper quotations. Most of the plants mentioned in this article are grouped together in this case before you, and will be placed in the library room of the Horticultural Society.

TREE PLANTING AND ARBOR DAY CELEBRATIONS.

BY JOHN B. PEASLEE, PH. D., PRESIDENT OF OHIO FORESTRY BUREAU.

I shall discuss this question with especial reference to the public schools, and shall draw largely upon a former address of mine delivered before the Ohio State Forestry Association in 1883. But before entering upon the discussion of tree planting and arbor day celebrations, I shall, in order to show the tremendous importance of properly distributed forests to the interests of state and nation, present to you a few of the warning lessons of history.

We are told in Holy Writ that at the time of Joshua, milk and honey were flowing into Canaan. Yes, it was then a country of wonderful fertility; the mountains of Lebanon were covered with dense forests, and

Palestine supported for centuries after, a large and ever increasing population, but the devastation of her forests, says Rothe, has brought about a general deterioration of the country, and to-day it is unable to maintain one-sixth of the population it did in the time of Solomon. A number of her beautiful rivers spoken of in the Bible are dry the greater part of the year, even the famous Jordan itself has become an insignificant stream. The hills of Galilee are sterile; the mountains of Lebanon rocky and barren except that a few of their cedars still stand — sad and lonely monuments of that once happy and prosperous country.

The Khanote of Bucharia was, when well watered, one of the most fertile regions of central Asia, but the devastation of her forests have, within thirty-five years, transformed this terestrial paradise into an almost arid desert.

Under the reign of the Moorish caleps, the Iberian peninsular, says Rothe, resembled a vast garden, yielding grain and fruit of every known variety, in the most perfect quality, and in endless abundance. The mountains of Spain were then covered with a luxurious growth of timber which was afterwards wantonly destroyed. Now nearly one-third of this entire area is unfit for agriculture because of the scarcity of rain and want of water; and the once delicious climate has become changeable and rough. Nowhere, says the Encyclopædia Britannica, are the evils of denudation more signally exemplified than in Spain. The political decadence of that once powerful country have been ascribed wholly to the destruction of her forests.

Again we learn from Phipps, that the evil consequences of the devastation of the natural forests on the east coast of the Adriatic sea, remain a terrible warning to the inhabitants of that once fertile region. The mountain range running along the coast, heavily timbered in the time of Constantine, is now destitute of soil, the naked rocks reflecting the hot rays of the sun, warn the stranger not to enter the sterile and inhospitible country.

Look at Cicily, says Rothe, once the great grain reservoir of Rome, but since this island has been dispoiled of its forests, it has gradually lost its fertility and the mildness of its climate. The ruins of the once proud and opulent Syracuse lies in a desert covered with sand, which the hot Sirocco carried over the Mediterranean Sea from Africa. A few isolated, well-watered, and carefully cultivated districts of very limited extent, is all that is left to remind one of the by-gone glory of Sicily. Less than a generation ago the eastern portion of the famous West Indian island of Santa Cruz, was rich, populous and of tropical luxuriance, now deprived of its forests, has become dry and worthless. The island of Curacoa, only fifteen miles distant from Vera Cruz, was at the beginning of this century a very garden of fertility, but forty-five years afterwards it was found to be an almost perfect desert — abandoned plantations, the ruins of beautiful villas and terraced gardens, and broad, arid wastes, without a blade of

grass, show how sudden a destruction had come upon this unfortunate island. The cause was the cutting down of the trees for export of their beautiful lumber. The philosopher, Boyle, says of the Dutch East Indian island of Ternate, long celebrated for its beauty and healthfulness, on which the clove tree grew in such plenty as to render their product almost valueless. But, in order to raise the price of the commodity, most of the spice forests were destroyed. Immediately, the island, previously cool, healthy and pleasant, became hot, dry and sickly, and unfit for human residence.

What is true of other parts of the world, in regard to the evils of deforestration is alarmingly true of many parts of our own country. In numerous places of my own state, Ohio, have the hillsides been largely washed away since their forests have been destroyed, leaving the bare rocks exposed to the hot rays of the summer sun. The storms blow unhindered over the country. The rainfall rushes in torrents into our stream causing frequent floods, and the climate once so steady has become changeable. The peach crop, so certain fifty years ago, can no longer be depended upon. Thousands of her springs and brooks that once gave forth a continuous flow, are now dry in midsummer. In this connection let me give you an example within my own personal experience, and gentlemen, I am confident that most of you can call to mind similar occurrences. When a boy, there was located on my father's farm, almost within sight of my old home, a never failing spring of crystal water, in a ravine bordered by hill slopes covered by a beautiful forest of pine. I dug out the spring, as we say in rural parlance, making a small pond of some twenty feet long by ten wide, and two or three feet deep. The upper end where the cool spring water bubbled up from the earth I covered over with flat stones, making a kind of bridge to serve as shelter and protection for the beautiful speckled trout, some twenty in number, with which I stocked my little pond. Oh, what delight I took in those happy boyhood days in daily feeding my pets, which became almost as tame as the chickens about our door. Years passed on, I left my native home to live in Ohio, and after the expiration of two years I returned to visit my parents. I went to see the spring, that spot so dear to my boyhood days, and, think of my surprise and amazement, when I found that no spring was there, only a few bare stones remained to mark the spot where the ever flowing spring once was. The cause of this was the cutting down of the pines that covered the slopes on either side. Since that time a growth of beautiful oaks has sprung up, and my spring has returned.

I am told that within the remembrance of the older settlers, the climate of this state, Wisconsin, was remarkably steady, the winters were long and cold, and the supply of snow ample and regular, and that late frosts in spring were unusual. The inhabitants now complain of sudden changes of temperature in all seasons of the year and of the irregularity of snowfall.

Ladies and gentlemen, the warning examples of history are almost innumerable. Every civilized country has them, but let us now turn from

their enumeration to consider for a few minutes what has been done by modern civilization to repair the wrongs of the past, and to educate the people of the present and future. The island of Ascension was entirely barren when first occupied in 1815, and supplies of water had to be brought frequently from England and the Cape of Good Hope. Since then trees have been planted and agriculture introduced. The effect has been marvelous. The supply of water is now excellent and ships visiting the island are abundantly supplied with vegetables of various kinds.

The Island of St. Helena was heavily wooded when first discovered in 1502, but became almost entirely denuded in the last century. The record shows accounts of repeated and almost periodical droughts, resulting in great loss of cattle and crops, but near the end of the century, through the foresight of the then governor, trees were brought from all parts of the world and planted, and forests seeds were sown. The consequence of this re-foresting are seen in a recent official report of the island which says: "For many years past, since the general growth of trees, we have been preserved from the scourge, and drouths such as were formerly recorded, are now altogether unknown. Our rainfall is now equal to that of England.

First and foremost of all nations of the earth in this great work, stands Germany. The progress made by Germany in tree-planting, says Phipps, is but a part of her general progress. The credit is given to the Great Frederick. It was part of the national policy of his day which raised Prussia from a small power to a great one, and to the energetic continuation of that policy, Germany owes Sodoma and Tedon. By this foresight, vast armies have been maintained, where once the scanty deserts would not nourish a flock of goats, and successive regiments of hardy soldiers have poured forth from a fertile soil where two hundred years ago the rugged *debris* of winter torrents, the thorn and the thistle, overspread a thirsty and impoverished land.

Germany to-day presents a model of systematic planting of millions of trees, and a complete system of forest management. In Prussia alone there are 10,000,000 acres of government forests, regularly and systematically planted and divided into periods and blocks. As year after year certain periods end, and the timber matures, the blocks are cut off, the land then cultivated for a few years and then replanted. The government's forests bring in an annual income of more than $14,000,000, and after paying the 3,784 foresters and other forest employes, yields a net profit to the government of $7,500,000. This enormous income represents but a small part of the benefits that Prussia derives from her forests. The healthfulness of her climate, the productiveness of her soil, indeed her vast wealth, population and her political power, depend as has been seen, upon her artificial forests. In this connection let me say that nearly every government of Europe has large areas in systematically planted forests under the direct control of the government. Besides Italy, Denmark, Austria, Russia,

Prussia, Saxony have each one or more schools of forestry, with great experimental stations attached, where young men are educated in the science of forest culture.

But you say, these countries have monarchial forms of governments. The few have absolute power, and are therefore able to make the necessary provisions for the restoration, and conservation of forests, but in a republic, the people are the source of authority and as they do not see the dangers that threaten them, the necessary legislation cannot be had. You are right, laws will not be enacted in advance of the general sentiment of the people. What must be done? Educate the people. Impress the people with the great importance of the subject. The time has come when the people must be awakened to the importance of preserving their forests and of planting trees, or our country must suffer the terrible consequences of their neglect before another half century has passed away. "The wealth, beauty and healthfulness of the country," as Whittier justly says, "largely depends upon the conservation of our forests and the planting of trees." How can these truths be impressed most effectively upon the minds of our people. In the first place, forestry associations should be organized in every city, town, village and school district in the country, whose object shall be to plant trees along the streets, by the roadsides, in parks and commons, around public buildings, in waste places, to distribute information in regard to trees and forestry among the people, and to encourage tree-planting in every way possible. These associations in conjunction with the public schools should hold Arbor day celebrations.

The youth of our country especially must be instructed in the value and utility of forests, their influence upon climate, soil, productions, etc., correct sentiments in regard to trees must be implanted in them if the best interests of our country in regard to forests are to be subserved. And the most impressive and attractive means of imparting the instruction and of interesting the children on the subject is through the celebration of tree planting, it is also the surest and best way of calling the attention of the people at large to it. The schools are thoroughly organized, and *organization* assures success of the celebrations, and as parents, relatives, and friends — indeed everybody is interested in the exercises of the children — so the whole community is awakened. There is nothing truer than the old German proverb: "What you would have appear in the nation's life you must first introduce into the public schools." It is therefore exceedingly important that the legislature of every state in the union designate a day to be known as "Arbor Day," and make it the duty of the public schools to take part in the proper celebration of the day. The celebrations should take place, if possible, about the trees, in the open air. To the objection that the best time to transplant trees is too early in the season to make it judicious to hold out-door celebrations, I have to say, that the celebrations will be just as effective if the trees are planted previously and the ceremonies performed on that day. The most important thing to be gained by

the celebrations is not the number of trees planted on these occasions (indeed, it is not absolutely necessary that any be planted, as the celebrations may take place around trees already growing), but the instilling into the minds of the children and older persons correct sentiments in regard to trees, and the storing of the minds with information relating to forests and to the distinguished persons in whose honor or memory, each tree or group is planted or dedicated, as the case may be; for I would have all the trees around which the celebrations take place dedicated to great authors, statesmen, soldiers — in brief, to famous men and women whose lives have reflected honor upon our country, to the pioneers and distinguished citizens of each township, village or city, and thus "make trees," as Holmes says, "monuments of history and character." In every place where sufficient ground can be obtained, either in public parks or elsewhere, I would have memorial groves planted, and the Arbor Day celebrations take place in them.

Let there be a citizens' "Memorial Grove," for which there shall be planted from year to year by loving hands of relatives and friends of those who have died; let there be a "Pioneer Grove," in which all citizens, young and old, shall annually join in paying just tribute to the memory of those who endured the hardships and privations of a pioneer life.

"The vanish freeman, one by one,
In death's enlightened realm to sleep:
And oh! degenerate is the son,
Who would not some memorial keep."

Let there be an "Authors' Grove" in which the school children shall honor by living monuments, the great men and women in literature, so that while they learn to love and reverence trees, they will at the same time become interested in the writings of our distinguished and worthy authors. Let there be a "Soldiers' Grove," devoted to the memory of our patriotic dead. Yes,

Plant beautiful trees in honor of those,
Whose memory you revere;
And more beautiful still they'll become
With each revolving year.

In this connection let me say that the Grand Army Posts of New York state, a few years ago (and I hope do so yet), followed the recommendation of mine and planted trees, instead of strewing flowers, in honor of their dead comrades. How much nobler, and grander, and more enduring the living growing trees than the cut and withering flowers.

Have you never thought what monuments the trees, monarchs of the vegetable world become? They are more durable than marble itself. Their grandeur will challenge the admiration of the beholders when the coeval marble monument at their base will lie in ruins, defaced by age and crum-

bling into dust. Think of it, the life of an oak is two thousand years, that of the rock maple, from eight to nine hundred, of the elm, from three hundred and fifty to five hundred years, and there are living to day, trees whose age is estimated at more than five thousand years, while marble exposed to air and water, and subject to the changes of heat and cold, scarcely holds its own a generation, and frequently crumbles to pieces in seventy years. Well may the great historian, Benson J. Lossing, say: "What conqueror in any part of life's broad field of battle could desire a more beautiful, a more noble, a more patriotic monument than a tree, planted by joyous children as a memorial of his achievements? what earnest, honest worker with hand and brain for the benefit of his fellowmen, could desire a more pleasing recognition of their usefulness than such a monument, a symbol of his or her own production, ever growing, ever blooming and ever bearing wholesome fruit."

Have you ne'er thought how our homes, our villages, our towns and cities are beautified by trees? We are to-night in perhaps the most beautiful little city on the continent of America; what has made it so? I need not answer that question. It is on the tongue of every member of this audience —the trees! Who can visit Detroit without exclaiming, "Oh, how beautiful!" What has made it so? *The trees!* Trees not only beautify our homes and make them more healthful, attractive and valuable, but they indicate refinement, enterprise and culture.

Should the celebration of planting memorial trees, the preparation for which affords ample opportunity for imparting all needful information in regard to trees and forests, become general in our country, the time would not be far distant when such a public sentiment would be formed as would lead to beautifying, by trees, of every city, town and village in the United States, as well as the public highways, church and school grounds, and the homes of the people in the country. In truth, within the next twenty-five years, the general aspect of many parts of our country would be changed through the natural effect of these arbor day celebrations. Pastor Oberlin, after whom Oberlin College, in Ohio, is named, required each boy and girl, before he would administer the ordinance of confirmation, to bring a certificate that he or she had planted two trees. If but the youth of our country, could be led to plant their two trees each, how, by the children alone, could our county be enriched and beautified in the next fifty years.

ORIGIN OF ARBOR DAY.

Arbor day, for the planting trees for economic purposes, originated in Nebraska in 1872, and within the next ten years was adopted in two other comparatively treeless states. It grew out of the absolute necessity the people of these states felt for wood, lumber, etc., and he who planted the most trees received a reward from the state. Besides, a certain reduction in taxes was made to those who planted a certain number of acres of trees, but the plan of celebrating Arbor Day, or Arbor Day as now celebrated,

originated in Cincinnati, in 1882, at the time of the organization of the American Forestry Congress, and has since been adopted by twenty-seven states and three territories, and the Dominion of Canada, and the "Cincinnati plan" of celebrating tree planting, as it has been appropriately called, has crossed the Atlantic and found its way into England, Scotland, Austria and Germany.

In order to indicate the character and scope of Arbor Day celebrations I will give a brief description of the celebrations held by the Cincinnati public schools in Eden Park. At the request of the projectors (of whom I was one) of the American Forestry Congress, which was organized in Cincinnati in the spring of 1882, the Ohio legislature passed a joint resolution authorizing the governor of the state to issue a proclamation each year in which he should designate a day in April as "Arbor Day," and call upon the citizens of the state to devote that day to tree-planting. In accordance with the resolution, the proclamation was issued, designating the 27th of April of that year as "Arbor Day." Acting in the spirit of the governor's proclamation, the board of education of that city decided by a unanimous vote to dismiss the schools for that day, thus giving the schools an opportunity of participating in the tree-planting celebration.

It occurred to me, as chairman of the Arbor Day committee and as superintendent of schools, that it would be an important thing for the schools to plant trees in honor and memory of American authors, to be known as "Authors' Grove." At the request of the committee, the board of public works set apart about six acres in Eden Park for this grove. Selec-lections on trees and forestry were sent to the various schools to be memorized by the pupils, also information concerning historic trees of our country, and many facts in history giving the effects upon climate, soil, productions, etc., both of the destruction and of the renewal of forests, were given to the scholars; these formed the basis of composition in the upper grades. In addition to the above, the teachers were required to give sketches of the lives of their respective authors, and the pupils to learn selections from their writings.

The boys of the several schools were organized into companies under the name of "Forestry Cadets," as the "Emerson Forestry Cadets" of Hughes high school, the "Longfellow Forestry Cadets" of the Eleventh district school, the "Holmes Forestry Cadets" of the Second district school, etc. The boys not organized into companies and the girls were called "Foresteri," as the "Whittier Foresteri," the "Franklin Foresteri," and so on.

That the part taken by the pupils in the actual planting of the trees may not be misunderstood, I will state that experienced men employed by the city, did most of the work of setting out the trees previous to Arbor Day, and the pupils finished the setting by filling around each tree a little soil left in heaps for this purpose. At a given signal, the pupils, upward of 17,000 in number, arranged themselves, each school around its special author's tree or group, and the exercises began. In general these exercises

consisted of reading by the pupils their compositions on forestry; of reciting individually and in concert the selections on trees; of giving sketches of the lives and writings of their chosen authors; of declaiming extracts from their works; of reading letters from living authors or from relatives and friends of those who have passed away; of singing; of the ceremony of throwing the soil, each pupil in turn, about the tree, and of appropriate talks by teachers and others. At the expiration of the time allotted to this part of the programme, the pupils come together, and assisted by instrumental music sing our national songs and others appropriate to the occasion. After this the pupils were dismissed to enjoy themselves in their own way in the great park. Thus ended what, perhaps, were the most interesting and profitable lessons the pupils ever had in a single day; for, in participating in the planting of this grove they not only obtained a better knowledge of the American authors and their works, but learned to care for and protect trees. Besides, the importance of forestry was impressed upon the minds of thousands of children by the celebration, few of whom knew before the existence of such a subject. The attention of the parents and the people in general, was attracted to it.

It should be stated here that while "Authors' Grove" was being planted by the children, "Pioneers' Grove," "Citizens' Memorial Grove," "Presidents' Grove" were planted or more properly dedicated by the older people, and "Battle Grove," by the old soldiers and their friends, some person being selected in each instance to make appropriate remarks, or to plant each tree, as it was called. After this speeches were made by distinguished citizens from Cincinnati or elsewhere. It was estimated that more than 50,000 people were in attendance at the inauguration of this grand work.

The sentiment of the scholars in regard to trees, which was one of the direct results of the celebration, is clearly indicated by the fact that although there were thousands of children on each Arbor Day celebrated in Eden Park, not one injured a tree in any manner. In contrast to this, a prominent writer for one of the leading journals of England, in an article strongly advocating the adoption of the "Cincinnati plan" of celebrating tree planting, says, that in Epping Park, on every public holiday, the authorities employ a large force of special policemen to keep the people from wantonly injuring and destroying trees, and that, notwithstanding all the care and precaution taken to prevent it, trees are mutilated on all these public days.

How true are the words which that great American historian, J. T. Headley, wrote in regard to celebrating Arbor Day by public schools: "We sometimes forget that the highest aim of education is to form right character — and that is accomplished more by impressions made upon the heart than by knowledge imparted to the mind.

"The awakening of our best sympathies — the cultivation of our best and purest tastes — strengthening the desire to be useful and good, and directing youthful ambition to unselfish ends — such are the objects of true educa-

tion. Surely nothing can be better calculated to procure these ends than the holidays you have set apart in the public schools."

Again, the trees which the children plant or which they assist in dedicating, will become dearer to them as year after year rolls on. As the trees grow, and their branches expand in beauty, so will the love for them increase in the hearts of those by whom they were planted or dedicated, and long before the children reach old age they will almost venerate these green and living memorials of youthful and happy days; and as those who have loved and cared for pets will ever be the friends of our dumb animals, so will they ever be the friends of our forest trees. From the individual to the general is the law of our nature. Show me a man who in childhood had a pet, and I'll show you a lover of animals. Show me a person who in youth planted a tree that has lived and flourished, and I'll show you a friend of trees and of forest culture. In this I speak from experience. The pets I had when a child led me to join the "Society for the Prevention of Cruelty to Animals." The trees I planted in early boyhood in front of my old New Hampshire home have led me to advocate tree planting and Arbor Day celebrations.

As a further illustration of what I have said, I will relate one incident in the lives of Alice and Phœbe Cary, Ohio's greatest daughters. In 1832, when Alice was twelve years old, and Phœbe only eight, as these little girls were returning home from school one day, they found a small tree, which a farmer had grubbed up and thrown into the road. One of them picked it up, and said to the other, "Let us plant it." As soon as said, these happy children ran to the opposite side of the road, and with sticks — for they had no other implements — they dug out the earth, and in the hole thus made they placed treelet; around it with their tiny hands they drew the loosened mud and pressed it down with their little feet. With what interest they hastened on their way to and from school, to see if it were growing; and how they clapped their little hands for joy when they saw the buds start and the leaves begin to form; with what delight did they watch it grow through the sunny days of summer; with what anxiety did they await its fate through the storms of winter, and when at last the long-looked for spring came, with what feeling of mingled hope and fear did they seek again this tree.

But I must not pursue the subject further. It is enough to know that when these two sisters grew to womanhood, and removed to New York city, they never returned to their old home without paying a visit to the tree that they had planted, and that was scarcely less dear to them than the friends of their childhood days. They planted and cared for it in growth; they loved it in age. The tree is the large and beautiful sycamore which one sees in passing along the Hamilton turnpike from College Hill to Mt. Pleasant, Hamilton county, Ohio.

OLD LIBERTY ELM.

It was the custom of our New England ancestors to plant trees in the early settlement of our country, and dedicate them to liberty. Many of these liberty trees, consecrated by our forefathers, are still standing. I remember, when a boy, the interest I felt in "Old Liberty Elm" that then stood in Boston. That old tree was planted by a school master, long before the Revolutionary war, and dedicated by him to the independence of the colonies. Around that tree, before the Revolution, the citizens of Boston used to gather to listen to the advocates of our country's freedom; around it, during the war, they met to offer up thanks and supplications to Almighty God, for the success of the patriot armies, and, after the terrible struggle had ended, the people were wont to assemble from year to year, in the shadow of that old tree, to celebrate the liberty and independence of our country. It stood there till within a few years, a living monument of the patriotism of the citizens of Boston. The sight of that tree awakened patriotic emotions in every true American heart, and when at last, that old tree fell, the bells in all the churches of Boston were tolled, and a feeling of sadness spread over the city and state, even in Ohio, there were eyes that moistened with tears when the news came that "Old Liberty Elm" had fallen in a storm. Such was the veneration in which it was held.

WASHINGTON ELM.

Another of these "liberty elms" now stands in Cambridge, Mass. Under the shade of this venerable tree, Washington first took command of the continental army, July 3d, 1775. How the affection of every lover of his country clings around that tree. What care has been taken of it, what marks of esteem have been shown it by the citizens of Cambridge, may be judged by those who have seen it standing, as it does, in the center of a great public thoroughfare, its trunk protected by an iron fence, from injury from passing vehicles, which, for more than a century, have turned out in deference to this monarch of the revolution.

In this connection let me say, that a few years ago, a number of American scientists, in order to determine the amount of moisture given out by forest trees, selected the "Washington Elm," on which to make their experiments. They calculated that the leaves of this tree would cover, with a single layer, 200,000 square feet of space, and that they gave out every fair day, during the growing season, 15,500 pounds or 7¼ tons of moisture to the atmosphere.

I will close by reciting that beautiful poem, so familiar to you all, entitled, "*Woodman, Spare that Tree.*"

In a letter to a friend, dated New York, February 1, 1857, Mr. Morris, the author, gave in substance the following account of how he came to write this poem.

Riding out of town a few days since, in company with a friend, an old gentleman, he invited me to turn down a little woodland pass, not far

from Bloomingdale. "Your object?" inquired I. Merely to look once more at an old oak tree planted by my grandfather long before I was born, under which I used to play when a boy, and where my sisters played with me. There I often listened to the good advice of my parents. Father, mother, sisters — all are gone; nothing but the old tree remains"; and a paleness spread over his fine countenance, and tears came to his eyes. After a moment's pause, he added: "Don't think me foolish, I don't know how it is, I never ride out but I turn down this lane to look at that old tree. I have a thousand recollections about it, and I always greet it as a familiar and well-remembered friend." These words were scarcely uttered when the old gentleman cried out: "There it is." Near the tree stood a man with his coat off, sharpening an axe. "You're not going to cut that tree down, surely." "Yes, but I am, though," said the woodman. "What for," inquired the old gentleman with chocked emotion. "What for?" I like that. Well, I tell you, I want the tree for firewood. "What is the tree worth to you for firewood?" Why, "when down, about $10." "Suppose I should give you that sum," said the old gentleman, "would you let it stand?" "Yes." "You are sure of that?" "Positive." "Then give me a bond to that effect." We went into the little cottage in which my companion was born, and which is now occupied by the woodman. I drew up the bond. It was signed, and the money paid over. As we left, the young girl, the daughter of the woodman, assured us that while she lived the tree should not be cut. These circumstances made a strong impression on my mind, and furnished me with the materials for the song I send you.

Woodman, spare that tree!
  Touch not a single bough!
In youth it sheltered me,
  And I'll protect it now.
'Twas my forefather's hand
  That placed it near his cot;
There woodman let it stand;
  Thy ax shall harm it not!

That old familiar tree,
  Whose glory and renown
Are spread o'er land and sea,—
  And wouldst thou hack it down?
Woodman, forbear thy stroke!
  Cut not its earth-bound ties;
Oh, spare that aged oak,
  Now towering to the skies!

When but an idle boy
I sought its grateful shade
In all their gushing joy,
Here, too, my sisters played.
My mother kissed me here;
My father pressed my hand—
Forgive that foolish tear
But let that old oak stand.

My heart strings round thee cling,
Close as thy book, old friend;
Here shall the wild-bird sing
And still thy branches bend,
Old tree! the storm still brave!
And, woodman, leave the spot;
While I've a hand to save,
Thy ax shall harm it not.

DISCUSSION.

President—Ladies and gentlemen, we have a little time that we might give to the discussion of this magnificent paper.

Mr. Hoxie—I presume there are many who will say we have no need to save our trees, especially those in the northern part of the state. History shows there is a need of the conservation of our forests. Unless we do, the time is coming when we will have to live in a country destitute of trees. The object of this paper is that the people in the state of Wisconsin may see the importance of it, and that it may awaken a greater interest in purchasing land for public parks before it is beyond their reach. I was in hopes Mr. Currie from Milwaukee would have been here to help discuss this question. In Milwaukee they have no public park like some of our cities. Every year the land gets higher and higher. Steps have been taken to inaugurate a movement in that direction, but nothing has come of it. That is one reason why we wanted Mr. Peaslee here to talk on this matter. Every village ought to have its public park—five acres, two acres or only one—where the young

can get out, and the old can go in their declining years and rest in the shade of the trees. Forty years ago I saw that famous old oak tree on Boston common, limbs and branches supported with bands and rods of iron. The decay of age some years ago leveled it to the ground, but the spot is marked by a monument to commemorate its history in the time of the early colonies.

I would like to hear from Hon. M. A. Thayer, of Sparta, in connection with this paper.

Mr. Thayer — Mr. President: My knowledge in this matter is too limited for me to give any information to this audience who have just listened to Mr. Peaslee's paper. I feel to agree though with Mr. Peaslee on the point of early association. I have had some experience in tree planting, and when I came to Wisconsin 34 years ago, and as I began to engage in business, I made it a point that any property I ever owned should have plenty of trees planted on it. It became my fortune to engage in the real estate business in Sparta, and I followed the same rule then. In the early days we were trading and trafficking, and did not pay much attention to beautifying our yards, but I made it a point that shade trees should be set before those premises on the street line. I also became agent for many pieces of property at that time, and made a point of insisting that the owners of such property should set out, or pay for the setting out of trees. I did all in my power to influence the city council or city fathers to enact an ordinance compelling the owners of lots to place trees in front of their property.

A few years ago I had the satisfaction of knowing and appreciating how much had been done by that little effort. We had a cyclone go through the city, and the next week we removed over four hundred loads of trees and limbs that had been planted, and still the next season no one could have told that there was a tree missing. The satisfaction of that little work has been more to me personally than any other thing that I have ever did in that city, and I wish that there was a way to impress upon everybody present, every farmer in the community, every man that owns a small house and lot, every man that owns a vacant lot,

either in town or country, that he would make a resolution that trees should be planted in front of his premises. There is no good that will last so long, there is no satisfaction that will be so great to any man, as a protection of that kind around his lot. Do it yourselves and teach your children to do it, and in the long years to come no satisfaction will prove so great to them as that duty performed.

Mr. Robbins, of Platteville — Forty-two years ago next June, an elm tree was set out on my place by one who has gone across the river. It is a beautiful tree. I would not take a thousand dollars for it to-day. I would like to have a clause in my will that my children should never destroy it after I am gone, but that it should stay there until it is destroyed by some natural process. A man who has never set out a tree should be ashamed of himself. Around my house are the trees set out forty years ago. No storm has destroyed them though wind and storms have taken trees within twenty rods of them. They are undisturbed. I can be there with my children in the delightful cool shade while the sun is hot overhead. It will afford a protection for me and my grandchildren as well.

Mr. Clinton Babbitt, Beloit, Wis.— When I came to this convention, a place where I have had such a variety of experiences, I made up my mind I wouldn't say a word; I would see how the boys ran it, but when I heard this paper and the remarks of the gentleman upon it, I was back in New Hampshire and my experience in the old Granite state was brought vividly before my mind. A great many years ago, when a boy, uncle John Reed said to me, "Clinton, let us go up and get a nice elm and set it out on the common," and I went along with him and he planted it, with my assistance. "Now," said he, "some day when you go back to this old place and lay down under the shade of this tree you will think of me and you will be glad that you assisted in planting this tree."

Many years passed and I returned a stranger to my native place. All were gone in whom I was interested. I would not have been known if I had told my name. My father, my mother, my sister, all the members of our family

and the man who helped me plant the tree, were all gone. The tree was large and beautiful. I went away without telling whom I was and came back to this western country. I again returned to my native place, but this time in company with a gentleman from Boston, a man of great wealth and great experience. He was also born in that place. He insisted upon my staying with him at a friend's house, as his guest also. I thought I would slip away unobserved and go to the old church and sit again under the shade of that tree. I cannot describe the emotions I felt that evening time. I can't do it. I left that tree and went to another that was planted by my father, an elm, under which I had played high spy as we used to call it. I can not tell to you the emotions of that hour, no one knowing I was there where so many I had known and loved had passed away. I have been there once since and taken my daughters with me and shown them those trees I loved so well. I believe that the impressions given by that tree planting made on me was the reason why to-day I have in my own front yard thirty-five of those beautiful elm trees in this beautiful commonwealth of Wisconsin. I have had the pleasure of entertaining on that ground some of our most distinguished men in this state. It is a pleasure to think that I have entertained in that grove at Beloit, the honored governor of the state of Wisconsin, a man who has done so much in this great commonwealth for the farmers of Wiscunsin. I say to you, gentlemen, inculcate in the minds of your boys and girls this idea, that a tree represents something grand and noble, inculcate in their minds that it repsents life and strength.

A Member — I would like to hear from the Rev. Mr. Gordon on this subject.

Mr. Gordon — Mr. Chairman, I have been requested to thank my old friend, Mr. Peaslee, who has come so far to say so well what he has said, and I also wish to state that I had no idea of making a speech. Mr. Peaslee for a long time was superintendent of the schools in the great city of Cincinnati, has been for a great many years of the opinion that the planting of trees should be a public school

movement in the United States. We are indebted to Mr. Peaslee that he should come so far to give us this paper on this subject, and we wish to return to him our sincere thanks for his assistance in this matter.

Tree planting is especially necessary in this country where tree murder is so common. Tree murder is the crime of America against the universe. It has taken them years to become the beautiful trees you find them now. You destroy the work of many centuries, you level the long results of myriads of years, the silent working of a long age. These trees we found here so splendid in their grandeur, have been sacrificed in almost a criminal way. I know the place upon which I live would be worth moreto-day, if the white oaks had been left there. They were sold for four dollars a piece, for railroad wood. I would like to pay one hundred dollars for them, to have them back. Many of us feel that way. There is a piece of land in our place covered with beautiful trees. A lady said, "somebody will cut that timber all off that point some day. Let me buy that land." All right, was the reply. She bought the land to preserve the trees for the beauty of Jefferson county, and handed the deed to me to keep.

The tree is one of the golden mile stones of the human life; it is like the hearth stone and chimney corner of the homestead. We all have in our memories fully as much connected with the great trees we have left behind in the homes of our boyhood, as of the hearth stones and chimney corners we have lived around. You know one of the forces of the golden milestone; it is the center from which to measure off the distances, and the trees of our boyhood are the golden milestones from which we reckon events, as well as from the hearth stones upon the inside of the house. An old elm or a splendid tree of whatever character, is a thing that most men, the old men and the grand men, have connected with home and hearth stone, mother and father. The one memory includes the other, recalling home joys and sorrows, deaths and marriages, all the happiness of our old associations. So I am glad, Mr. Peaslee, that your work is beginning to show fruit all over the western country, and

the children are learning from you and those you are associated with in work, that it is a delightful and beautiful thing to plant trees, and if we can only couple it with a certain responsibility that as custodians of the soil we should do all in our power to beautify it and add to its value. We say we reside upon and own the land. Yes, we have a deed of the land but we do not own it all. A man who paints his house should paint it with a view of pleasing his neighbor who has to look at it, and not merely have the preservation of the timber it is built of as the end in view. A man who lays out his land with trees will add to the beauty and value of the place he lives in. It is a crime against society, a crime against the universe to unnecessarily and wantonly cut down a beautiful tree.

President Smith—I do not want Mr. Peaslee to go home with the idea that everybody in Wisconsin is a tree destroyer; we are not quite as bad as that, I think. There is a gentleman from Wisconsin who has made his home in California, whom my wife and myself with our party visited two years ago this winter. He invited our party out to his place to take dinner and show us around. There were trees all over, trees everywhere, on the road side, in rows, on this side and over there, everywhere. We asked where in the world all those beautiful trees came from. They had been set there by him, and all were native trees, planted by his own hand. That man is a Wisconsin man.

Mr. Kellogg—Mr. President, when Mr. Peaslee spoke of oaks two thousand years old he brought to my remembrance a time when a boy, my father and I with a yoke of oxen drew one of those monsters on a sled without a flake of snow, to mill. That old tree made a thousand feet of lumber. This one oak was one of the oak monsters near the lake shore in Kenosha county.

I have planted so many trees that they have become a nuisance. I have trees around the house now, planted when I did not know anything, and I have held my own pretty well ever since. Planted too thickly they are a great nuisance. They were planted in 1854, and I would caution those who are setting out trees not to get them too close.

You will see all over the country the farmers' yards when they have trees in them, you will see two rows of Balsam fir running from the gate to the front door. What do they amount to? They do not add to the comliness; may do for a wind brake. I wish the time would come when I could see surrounding the farms of Wisconsin, a wind brake of Norway spruce. After they once had them they would not take ten dollars a tree for every tree set in the wind brake. Why is it the farmers have lived so long without any protection for their cattle except wire fences? Trees are a great protection for cattle, and every farmer should attend to it that he has them planted in his pastures. There is a time to plant and there is a time to cut out. I have just cut down twenty-one acres of timber in the city of Janesville, and have been making it into wood. Too many trees are a nuisance and a pest, and you better take them out of the way. The blue jays are bringing oaks and planting them on the forty where I live. They carry seed a long distance, and I do not know but what all those trees may become a monarch of the forest in the future.

Mr. Allen — One of the most tender spots to me is the public school yard near which I live. I went with my own team and got a couple of trees and set them out in the school yard, and now, sir, after forty years of time, having lived there forty-five years, the most pleasant spot for me to go to is among the trees I then planted.

President — As interesting a portion of our entire convention has been this afternoon, the papers and discussion connected with it, and we will continue another branch of it this evening by Mr. Currie of Milwaukee, and Sacred and Historic Trees by Mrs. A. C. Neville.

Resolution presented by Mr. Goodrich:

WHEREAS, For some reason, (which the ordinary farmer does not understand), it was arranged that we could buy our excursion tickets Sunday, when we should be in church), and that we should come Monday, and pay $2 hotel bills, waiting, in order to save $1 in fare; therefore

Resolved, That the honorable president of our State Agricultural Society be requested to confer with the railroad officers, and arrange that those who, in order to get here were required to pay full fare, shall be returned free.

Resolution adopted.*

Mr. Thayer — I wish to offer a resolution.

Resolved, That we heartily endorse the recommendation of Prof. Goff in relation to the organization of fruit stations for testing the rust of apples and small fruits and that we urge the society to carry it into effect as early as convenient.

Adopted.

Mr. Hatch — I wish to offer another resolution:

Resolved, That the members of the Wisconsin State Horticultural Society tender to the department of Agriculture at Washington, thanks for the experimental work conducted in Wisconsin during 1889.

Mr. Hoxie — I move the adoption of Mr. Hatch's resolution.

Adopted.

THURSDAY, Feb. 6th, 7:30 P. M.

President Smith — I think that the most of this audience were present at the afternoon session. We are going to continue in the same line this evening, and papers will be presented by able writers who have given thought and study to the subjects.

It has been said by some one that he could judge of the civilization of a country by traveling through it and looking at the cemeteries. If this is true I am afraid in going over some portions of the United States he would think our civilization needed repairing. The first paper is

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* Hon. John Mitchell conferred with the officers of the Milwaukee and St. Paul road, and members of the convention purchasing tickets on their road were returned free by presenting certificates of attendance.— SECRETARY.

VILLAGE AND COUNTRY CEMETERIES.

BY JAMES CURRIE, SUPERINTENDENT FOREST HOME CEMETERY, MILWAUKEE, WIS.

[Mr. Currie not being able to be present, M. A. Thayer, of Sparta, read his paper, who premised the reading with the following excuse:

Mr. President, the position of a substitute is usually one of embarrassment to himself, and a disappointment to his audience. Especially is this so to-night, with a paper so good, an author so noted, and a medium so unqualified for his duty. Hoping, however, you may receive something of the inspiration of the author, I must ask your kind indulgence for the poor substitute.]

VILLAGE AND COUNTRY CEMETERIES.

Mr. President, Ladies and Gentlemen—I admit that when my subject was first suggested to me I hesitated for a moment, doubting somewhat the propriety of presenting such a topic for discussion, where only horticultural matters, or such as bear in some measure on the art, are supposed to occupy your attention. However, as my mind quickly reverted from the first purpose of a cemetery, to what it really may, and in fact should become, although still serving that purpose, I immediaely recognized the fact, that not only is my subject admissible, but really very appropriate, and that, too, from a strictly horticultural point of view. It requires but a moment's reflection to satisfy me that nowhere could the subject be more appropriately introduced, and, provided, that my humble efforts are sufficient to direct due attention to it, nowhere else is it so likely to meet with the consideration it so justly demands.

As it is by comparison that we are best if not wholly enabled to judge of the merits or qualities of anything, I shall before taking up my subject proper, hastily glance at that type of cemetery which is now popularly considered the best, beauty as well as adaptability being the standards by which we weigh our opinions. You are all well aware of the sad and neglected state the burial places of our ancestors of half a century or more ago were in, and how everybody shunned rather than loved to visit them. You have all witnessed the wonderful transformation that has since been effected, and strange as it may seem, it would appear that the present system of laying out and maintaining cemeteries was first suggested to us by the spacious and magnificent burial places of the Turks.

While it is true that to the science of the architect and the sculptor is due much of the improvement in our cemeteries, it is to the art of the horticulturist and landscape gardener that we owe the greater praise. *His* artistic eye lighted upon the cemetery and *he* conceived the idea of improving it. He *began* by removing the weeds and briers and long tangled grass,

and replacing these with a closer cut sward, trees, shrubs and flowers. Not content with this, and being convinced that nowhere was his art so much needed, nor might be more appropriately applied, he soon threw all his energy into the task of completely revolutionizing the plan of laying out and adorning the cemetery. To what extent he has been successful we may readily learn by looking around us and witnessing the many beautiful 'cities of the dead" scattered everywhere all aver this broad land. Should I ask any one of you your impressions regarding some beautiful cemetery you have visited, I feel assured you would give answer something to this effect: "It is the most *beautiful* place I *ever* saw. I could not have *imagined* a cemetary *so* lovely, in fact as I wandered around under the shade of those lofty trees, on walks and avenues which sweep in easy, graceful curves to the right and left, and wind around among groups of beautiful trees and shrubs, across the wide expanse of park-like lawn, it was difficult for me to believe or bear in mind that I was in a burial place, and that all around me lay hundreds, nay thousands of my fellow beings, fast asleep in the cold embrace of death, all that is mortal of them quickly molding into dust.

This I knew, but yet I did not seem to fully realize it. I saw the beautiful white marble and solid granite monuments, which I was aware commemorated the life and mark the last resting place of some dear departed one, yet somehow they impress me as being placed there, along with all the other beautiful articles, as ornaments, or lawn embellishments. The liberal display, too, of lovely sweet-scented flowers, to be seen on every hand, served but to complete the picture, and I was all but convinced that I was walking in some beautiful park. I was perfectly amazed, but delighted. Here was a place serving the same purpose as did those dismal, neglected, shunned grave yards of half a century ago — alas, I regret to say it, that even yet exist. Like them it daily receives its consignments from the rich and the poor; but its horrors now no longer exsist, or are so modified as to be almost lost sight of. What a transformation! what a blessing, and, as I soon convinced myself, all due to the beautiful and refining art of the landscape gardener. It was he who planted those trees, or thinned out and artistically arranged those native to the forest. He laid out in easy undulations and smoothed and seeded the lawn, and cut out in graceful lines the walks and avenues; and completed his picture by planting all sorts of beautiful flowers."

Such are the sentiments I believe of many of you. If I have erred at all, it is because I have not said more, and in words of greater praise about our modern, rural cemeteries. As my object, however, is not to write particularly about our best cemeteries, those generally of the larger cities, but simply to refer to them, as I have already intimated, for the sake of comparison, I shall now proceed to consider those of our villages and rural districts. I feel perfectly justified in saying that such beautiful burial places as Greenwood of Brooklyn, Spring Grove of Cincinnati, and a hundred others almost equally attractive, are now accepted as model cemeteries.

With these, or rather their general plans, not of course their size, as examples let us then take up and consider the average village or country cemetery, and note how near it approaches to our models. At the outset it is but just to say that there are some few village cemeteries which it has been my good fortune to see, which are very beautiful. They are neatly and tastefully laid out and carefully attended to; and comparing them with our models they stand very creditably indeed. But it is with extreme regret that I have to say, on the other hand, there are scores of cemeteries, by no means hard to find, which, to express it as mildly as I feel I am justified in doing, are simply a disgrace to a civilized and refined nation. They are not a whit better than those old grave-yards of a century ago. Let us look into one of them. We have not far to go, it is just at the outskirts of the village. In fact the first thing about it to strike us unfavorably is its location. Why, we ask, was it located so close to the village that even now it is being surrounded by dwelling houses, and it is very evident, that in the course of a very few years, it will be found in the way, and be declared a nuisance, and its removal to some more distant locality be ordered and accomplished with all the attendant troubles, sorrows and horrors. As we approach it we next notice its rough, neglected, deserted appearance. Tall, coarse grass and rough luxuriant weeds abound; but there is not a sign of a flower, neither are there trees or shrubs of any kind. We enter and sorrowfully wander through it, and here and there, find evidence of the loving work of some sorrowing heart. A rough attempt has here been made to build up and lay a turf around a grave, or otherwise improve its appearance, and there the grass has recently been shorn off a lot to give it a less neglected look. Owing, however, to the general roughness of the place, these few and scattered improved spots, the work of as many different individuals, are entirely obscured and lost to view from a very short distance. We notice that at different times attempts had been made to improve lots here and there, by raising them up a foot or more, above the general level, with the result, that the surface of the ground, which might otherwise be evenly undulating and comparatively pleasing to the eye, is all broken up by these meaningless, elevated platforms. But why linger longer here, there is nothing in the general appearance of the place to interest us, and in any way make our visit a pleasure to us; and to wander from one tombstone to another, and read the epitaphs inscribed thereon, simply adds to our disconsolation, and increases our melancholy or sorrow.

I am deeply grieved to find, nearly everywhere I go in our rural districts, so very little attention paid to cemeteries. Every little village has one or more; and in certain sections every country church has its attendant churchyard, either immediately connected with and surrounding it or at least adjacent to it. In many of them we see evidence of considerable wealth in the community, for there are many beautiful and quite costly monuments erected; but there the outlay of money has ceased. No attempt has been made or is being made to beautify the grounds. Once or twice, it may be

during the summer, the grass is roughly cut off by some one who is given the privilege for what little benefit his cow may derive from the grass converted into hay. It is even a fact that in some instances to save the trouble and little expenss, and that the cow may derive more immediate benefit, that animal is itself given the privilege of cropping the grass from the graves and around the tombstones; and to give the cow its due credit, it is but fair to say, that in those cemeteries where it does the grass cutting, the general appearance is fairly satisfactory. Such a state of affairs is certainly most lamentable, and calls loudly for some means of reform. Let us for a moment inquire into the cause of what at first sight certainly seems a lack of refinement, and at all events a total disregard of the last resting places of those who in life were most dear to us. While appearances are by no means flattering, I am convinced from what experience I have had, that in many instances, at least, it is not to a lack of refinement, neither is it to an absence of a desire to do things differently, that the neglected appearance of so many of our cemeteries is attributable. I have every reason to believe that the principal cause is the lack of knowledge regarding such things, and the means or proper system by which improvement can be brought about and maintained. I have many times talked with people from our rural districts who were greatly interested in our improved cemeteries, and expressed themselves as being very much dissatisfied with the dilapidated condition of their own burial grounds, and deplored the circumstances which seem to make improvemeut almost impossible. I generally find that nearly all the trouble lies in not knowing how to go about that improvement. A combined and harmonious action, and somewhat determined effort on the part of those interested is all that is wanting to accomplish what might seem wonders, and that, too, with a very limited expenditure of money. There are very few cemeteries which lack *all* natural capabilities of improvement, so that I may overlook them, and consider the several defects, and how these may be remedied, of our numerous inattractive, neglected burial places.

I have already alluded to the close proximity of many cemeteries to the villages to which they belong. That it is a very serious objection, as you no doubt, readily see. From a sanitary point of view, in these days of careful research into all things concerning the maintenance of the public health, a cemetery situated within, or very near to a town or village, is popularly considered very objectionable. With that question, however, I will not deal. A sufficient objection to such a location, is the certainty that, in the near future it may be, the ground will be needed for building purposes, and the cemetery must be removed. Better, then, in choosing a location, to go as far away as practicable from the village. In making a selection, it is of the utmost importance to have the ground high and dry. There is nothing so distressing to the tender feelings of bereaved friends, as the thought of placing their dear one in a grave which is wet; and for them to stand and witness the lowering of a coffin into a grave, which, despite every

effort on the part of the sexton, has several inches of water in it, as is too often the case, is simply heart-rending. Ground having a gravely or sandy subsoil is preferable. I would warn you, however, against selecting ground which is nothing more than a gravel bank, with little or no surface soil. The reason is clear; it is too dry. Trees, flowers and grass suffer from drought, and it is therefore a different matter to make the cemetery attractive. Referring further to neglected cemeteries, the principal defects are, delapidated fences, too few or too many trees, uneven ground, rank and untrimmed grass, poorly kept walks and avenues, or none at all, and toppling and fallen monuments and head-stones. In the brief time, at my disposal, I must necessarily confine myself to but a few remarks on the means which may be adopted to remedy these defects, and make the cemetery a comparatively attractive spot, offering visitors pleasant indcuements to spend an hour in occasionally. It may be better for me to consider the laying out of a new cemetery rather than the renovation of an old one. Having secured the ground, as already suggested, the first thing to do is to get it properly fenced in. A neat picket fence is, perhaps, the best among cheap fences; it may be constructed for a very reasonable sum, and it always looks well, especially if it is painted, and there is certainly economy in having that done. The necessary grading should be done next. Still previous to that, it is advisable to have a plat of the grounds made, showing all lots and sections, and, if the grounds are of considerable extent, all avenues and walks.

I may here say that in country cemeteries of not more than one or two acres, avenues are not really necessary. Walks of about five feet in width are sufficient to gain access to all lots without being compelled to go across others. When funerals are taken to one of these small cemeteries, the hearse and funeral cortege may be drawn up on the adjoining public road, and the remains be carried with little or no inconvenience to the grave. But in cemeteries of five acres or more, avenues should be laid out in various directions so that all points may be conveniently accessible. They should be made with a sufficient depth of gravel, so that even in very wet weather they will be dry and firm. The width of them should be at least such as to permit one carriage to pass another. In grading, avoid as far as possible, perfectly flat surfaces. Such a formation of the ground is not considered very artistic, at all events it is objectionable, because it offers obstructions to the free flow of surface water. This will sugest the filling up of all hollow pieces, for these if left, would simply be so many basins for holding water to prove very unsightly, if not more seriously objectionable.

A rolling, undulating surface is the most pleasing to the eye, and offers several advantages, among them, that of a variety from which to choose lots. Some people have a decided preference for a lot on a knoll, while others fancy a lower and more level place. Following the grading, comes the planting of trees if the grounds are not naturally wooded.

This is an important matter, and demands the careful consideration, as

well as the experiened workmanship of the landscape gardener. It is impossible for me to give full instructions here. I can only offer a few words of warning for the guidance of the inexperienced. I usually find that there is more danger of planting too many than too few trees. Shade is very agreeable, but it is possible to get too much, and thereby defeat our very object. Instead of beautifying the grounds we may make them a thicket or common plantation, where neither grass nor flowers will grow. My advice is to plant trees very sparingly, giving individual lot-owners an opportunity to add one or two to suit their own tastes. But here a new danger arises and must be carefully and firmly dealt with by those in authority. The too common practice of allowing lot-owners to follow a popular and uniform plan — one following the example of the other — of planting a tree, usually a spruce or other evergreen, on each corner of the lot, must be discouraged, in fact prohibited from the start, or you will get a result easily imagined. Spruces and pines are not suitable trees for cemetry lots. They so soon spread over and quickly destroy the grass, and any flowers one may plant. They are most appropriate and very pretty and effective on vacant portions of the ground. The grounds being properly laid out and finished, next comes the question of care. In those cemeteries we accepted as models a great deal of labor, and, of necessity, much money is expended to keep them in that order, and preserve their beautiful appearance so much admired and appreciated by all who see them. The grass must be kept cut short, and perhaps watered; the avenues free from weeds, and their margins trimmed; trees and shrubs require pruning, and flowers must be planted at the proper season and constantly cared for. Does all this pay? All these beatiful cemeteries plainly say yes, the moment you look at them. No question about that.

But here I am met with the problem you would, I fancy, propound to me, namely, how are we in a community, perhaps not overly wealthy, to raise the necessary funds, even granted that we stir up the proper and requisite enthusiasm, to lay out and adorn, and maintain as you suggest, our small cemetery, in which, perhaps, no lots are sold to bring any revenue. I might suggest two or three plans, as for instance the one common in large cities, which is for every lot-owner to do so much towards improving his own lot, the work being done by employees of the cemetery, it being understood that a small profit be allowed thereon, with which to keep in order the cemetery in general. But this plan depends for its success on the individual taste and liberality of each lot-owner, and is not likely to prove satisfactory until a community is educated to a taste for such matters.

The plan I would recommend for the average country cemetery, is to levy a tax on each lot-owner, or, if necessary, on each property owner in the district in which the cemetery is situated; it would be very small and not at all burdensome. After the first cost of laying out the grounds, the annual average expense for care of the cemetery need be but small, although everything that is necessary to keep the place neat and beautiful is

done. In a small cemetery of about five acres, one good, handy, tasty man will do all the work required. He can keep the grass cut short, the flowers trimmed and watered, the walks and avenues clean, the graves turfed and trimmed and free from weeds, and open and fix up any new grave. Supposing, then, his wages to be $1.50 a day or $9 a week from the 1st of May till the 1st of November, with an occasional day during the winter, when a grave must be opened, the total amount paid him would be about $250, a very reasonable sum indeed for the pleasure and satisfaction that would be derived therefrom.

A smaller cemetery of from one to two acres can be maintained on the same plan, but at much less expense, by employing a man two or three days, as the case may be each week. This is a plan followed in many cemeteries, and works very satisfactory, so that its adoption might be very much more general. The village or district should appoint a committee, say of three of its most active and most interested men to make arrangements for, and superintend the care and general management of the cemetery. By this means much work and great improvement may be accomplished, which under the present too universal custom is neglected; for under no other circumstances is the truth of the adage more forcibly felt that what is everybody's business is nobody's business.

But I have already made my paper too long, and occupied more than my allotted time. I can only say in conclusion that I am deeply interested in the improvement of our village and country cemeteries, and would urge everybody, whether directly interested or not, to take some active steps to work a reform in our rural places of burial. Such reformation would be a credit to every community, and a source of pride and pleasure to those immediately interested.

DISCUSSION.

Mr. Broughton—As a member of the rural community I do not know hardly what to make of this paper. These city literary fellows are laying out a lot for us to do. Yesterday it was roads and now we have another job on our hands. They are resolved if nothing else will do to encourage taxation to bring it about. Is this so? When flowery cemeteries began, Christianity went with it. In the Quaker grave yard you don't see monuments, but still they are Christians. It is a pagan custom and soon ruins a nation. Once they commence to build monuments they go into decay. Look at Egypt, they were great monument builders. It is so with every people as soon as they began to build monuments and decorate the grave yard. We rural folks can't

afford it. It is not necessary to erect a monument in honor of the dead.

Mr. Ezra Goodrich — This has for many years been a subject of interest for me. In the little village of Milton they have a cemetery such as every town in this Dane county ought to have. It is divided in square lots. Almost every lot is graded, slightly raised in the middle and covered with a live green sod supported by a natural soil going down four or five deep. The roads almost every where become weed grown, this we have remedied by carrying the sod off and covering with a coat of ashes, on top of that two inches of spent lime that comes from the gas factory. Milton has as handsome little cemetery as I ever wish to see anywhere.

Mr. Gordon — I do not want to get into the theological part of it. The pagans built monuments to their dead not because they were pagans but because they were human, so the Christians have built the most magnificent monuments. St. Paul's Cathedral, West Minster Abbey, the tomb of the kings. The towns and villages are not asked to build monuments. It seems to me that is generally done by the persons who have known and loved the deceased and who desire to show their honor, love and respect in such a way. But the laying out of the cemetery in every rural district, the care of that cemetery seems to me to be one of the marks, not so much of civilization as of that common human sentiment which has been the property of the human race since the first semi-savage buried his dead with funeral honors. There is nothing pagan or barbarous about the care of the dead; it is the last we can do for those who have departed to care for the place where they lie. Let us respect the meaning of human sentiment, and this is an excellent object for a wise and just sentiment. I could give you a thousand instances of the value of sentiment as a civilizing and humanizing influence. I feel certain one who neglects his dead will neglect those living.

Mr. T. E. Turner — Some sixteen years ago it was my misfortune to be in the state of Tennessee and I wish to refer to this simply to impress the importance of the care of our cemeteries in our own particular state. They were con-

ducting a funeral in connection with the branch of the church to which I belong. They dug three or four different graves before they found a place to bury their dead. They did not have a tombstone or a mark to show where the dead were buried. I heard they were at liberty to bury their dead after a certain number of years where dead had been buried before. I never saw it before and my feelings resent it. Our human sympathy and feelings asserts itself in respect to this matter. It does not cost much, just a little attention the last attention the loved ones resting there can recieve.

Theo. Henton, Columbia county — Mr. President, I have waited anxiously for this paper and am in full sympathy with the remarks of Mr. Currie. I am the superintendent of the burying ground at my home, and am determined to to do more for our cemetery. We have a very good one, but we can make it look better. It can be done very easily.

W. B. Lloyd — The cemetery at my own home was in a bad condition. Lots were sold and that is all the care the cemetery had A few years ago a maiden lady who had means so she was not dependent on work for her livlihood, sent word to the lot holders that if they would pay one dollar each, she would see that the cemetery was cared for. This was done and she had the weeds kept out and the lots trimmed, and the first year there was such a marked improvement that everybody was anxious to have her continue looking after it. The cemetery has become much improved from her efforts and the very little money contributed. It would make as much difference with nine-tenths of our cemeteries.

Mr. Kellogg — Mr. Currie has alluded to evergreen trees, I wish he would tell us what to plant. We must plant sparingly. The cut leaf weeping Birch, is a fine tree for cemeteries. One perhaps to a lot is sufficient and it is the only tree I could recommend.

President — The next paper is one which will please you as the lady presenting it has given the subject a great deal of time and study. I take great pleasure in introducing to you Mrs. Arthur C. Neville, of Green Bay.

SACRED AND HISTORIC TREES.

BY MRS. A. C. NEVILLE, GREEN BAY, WIS.

Since the fairies have left the green-wood where they danced to the music of the flowers, and fed on moonlight and fragrance, the world has grown prosaic and dull. Titania and Oberon weave no more mystic love spells, and the gods sit no longer aloft in the swaying branches of the tree from where their beneficent mercies overshadow the earth. Then the world was young and keeping holiday, and everything was idealized even to the sunbeams and soil, vegetation proceeded by enchantment and there was magic in the germination of the seed and secretion of the sap.

From the earliest ages trees have played an important part in the history of mankind. Groves have been held sacred as places of worship and trees of different sorts have been dedicated to special gods or reveranced as the home of some departed spirit. Ancestor worship is supposed by Herbert Spencer and others to have been the first form of religion, and nature worship seems but a kind of transmuted worship of ancestors. The rude imagination of primitive people pictured the souls of the departed as still lingering in the once familiar groves and haunting favorite trees. Such fancies in untutored minds naturally induced veneration, and may have been the origin of tree worship.

In Huntlie's Annals of Rural Bengal there is this following interesting example of this form of tree worship: "Adjoining the Santal village is a grove of their national tree — the Sal — which they believe to be the favorite resort of all the family gods (*laves*) of the community. From its silent gloom the bygone generations watch their children playing their several parts in life. Several times a year the whole hamlet 'dressed out in its smartest' repairs to the grove to do donor to the *Laves Rural* with music and sacrifice. Men and women join hands and dancing in a large circle chant songs. * * * Goats, red cocks and chickens are sacrificed, and while some of the worshippers are told off to cook the flesh for the coming festival the rest separate into families and dance around the particular tree which they fancy their domestic *laves* chiefly haunt." A similar sentiment prevails in the vicinity of Benares, where a traveler from this country some years ago observed an old woman walking round and round a certain peeful-tree. At every round she sprinkled drops of water from a water vessel, which she carried in her hand, on a small offering of flowers she had laid beneath the tree. A bystander who was questioned as to the ceremony, replied: "This is a sacred tree; the good spirits live up amidst its branches, and the old woman is worshiping them."

When man, in the infancy of the world, first learned to observe and think, he recognized "the forces of nature as god-like, stupendous agen-

cies as gods and demons." When, with the changes of the seasons he saw the buds of the trees burst into green leaves, followed by blossomings, fruitage and decay, he had no scientific name to give the phenomenon; it was the "spirit of the woods." The groves became the abode of his gods, and thus the first altar was raised in the woods for sacrifice and worship.

I like that comparison of modern times of a great tree with the temple, reared to the worship of the living God. Hebern in his Palestine described the rise of Solomon's temple,

"Like some tall palm, the noiseless fabric sprang."

The grand cathedrals of England, showing the circling growth of ages are likened by Dean Stanley to a venerable oak, with gnarled and hollow trunk and spreading roots, and decaying bark and twisted trunk and green shoots. Within the walls of one of these old churches, the Minster Abbey of the West, the hush, the dim light, the mysterious mingling of the present with the ages past awe the soul and place it in an attitude of worship, the trembling knees sink to the ground, the head is bowed and tears rush from the eyes. The very silence seems sacred. Thus in the deep forest did the solemnity and awe, the "divinity of nature," speak to the heart of primeval man.

ABRAHAM'S GROVE.

Abraham planted a grove in Beersheba and called there on the name of the Lord the Everlasting God. A little later and the Jews were forbidden to plant groves near the altar of the Lord (Deut. 16. 21, 22). The Bible contains repeated mention of a grove consecrated with deep superstition to heathen gods and for that reason were they forbidden to the Jews. There are many memorable trees mentioned in sacred history, but it is in pagan mythologies that we discover the most interesting legends of trees, and there we first find a recognition of the "divineness of nature."

Thomas Carlyle says: "Man first puts himself in relation with nature and her powers, wonders and worships over these; not till a later epoch does he discern that all power is moral, that the grand point is the distinction for him of good and evil, of *thou shalt, and thou shalt not.*"

The Druids, the so-called priests of the ancient Celts, found their chosen and sacred retreats in oak groves, and there all their religious ceremonies were performed. Jeane Reynand is authority for the statement that the Druids of Gaul first taught the immortality of the soul and that they had as high a conception of the true nature of God as the Jews themselves. One of their gods, Hesus, was the type of an absolute supreme being, whose symbol on earth was the oak. The mistletoe when found growing on the latter represented man, a creature entirely dependent on God for support and yet with an individual existence of his own. Druidism approached the divine truth through the divinity of nature, but declined and at last disappeared, because, according to Reynand, one element was wanting in its system both of morals and religion — charity or love.

ANCIENT DRUIDS.

The Druids reveranced the oak tree, the name being derived from *drew*, oak — *gwydd* — knowledge. Whatever grew on this tree was considered to be a gift from heaven, especially the mistletoe. The name given it signified All-Heal, and its virtues were supposed to be very great. In Britaire, the headquarters of Druidism, the gathering of the mistletoe, was attended by the greatest solemnity. For several days the people fasted in preparation for the solemn festival. Two white bulls, which had never felt the yoke, were fastened by the horns to the fortunate tree whereon the mistletoe had been found. A grove altar was raised at the foot of the largest oak of the forest, on which was offered sacrifice of human victims and the best of the herds. After the sacrificial ceremony, two priests clad in white, climbed the tree and secured the mistletoe with a consecrated gold hook, the men on the ground received it and after dipping it in water, divided it among the people as a protection against witchcraft. If the smallest piece of it touched the ground it presaged dire disaster.

OAK AND MISTLETOE.

The oak and the mistletoe figure in the traditions of the northern nations as well as those of the Celts. It was a branch of the mistletoe which killed Baldur, the white light, after Friga had taken an oath of all created things, that they would never hurt him, except "of one little shrub that groweth east of Valhall, so small and feeble that she forgot to take its oath." But the mistletoe, thus forgotten, was put by Loke, the destroyer, into the hands of the blind Hoder, who flung it at Baldur and he fell dead, pierced by the feeble branch. More than one sword of a northern champion was named "Mistillein," after the weapon which had slain the white god. The custom of kissing under the mistletoe has been traced by some writers during the past holiday season, to this legend of the death of Baldur, who, they have stated, was restored to life by command of the gods, after he was kissed by the most beautiful maiden, under an oak bearing the mistletoe which had caused his death. The story is a pretty one but unfortunately there is no authority for it in Norse mythology.

The oak, like the cedar in the east, is the representative of supernatural strength and power, and everywhere the oak, like the cedar, attracts the lightning and is the tree of the thunder-god. In the north, the oak, was under the special protection of Thunor or Thor, the hammer-wielding god, whose name is still retained in the word thunder.

APPLE TREE REVERENCED BY DRUIDS.

The apple tree was held in reverence by the Druids because of the mistletoe sometimes found growing on it, and many of the old Celtic rites and ceremonies are connected with this tree, some of which are practiced in the orchard districts of England at this day. On Christmas eve the farmers and their men, in Devonshire, take a large bowl of cider with toasted bread in it,

and carrying it in state to the orchard, they salute the apple trees with much ceremony, in order to make them bear well the next season. This salutation consists in throwing some of the cider about the roots of the trees, placing bits of toast on the branches, and then forming themselves in a ring they sing a song, the words of which have come down from very ancient times. The apple tree so singularly connected with the first transgression and fall of man, is distinguished alike in the mythologies of the Greeks and Scandinavians, as well as the Celts. The golden fruit of Hesperides, which it was one of the labors of Hercules to procure in spite of the sleepless dragon which guarded it, was believed by the pagans to be apples. This tree was considered by the Greeks as sacred to Hercules who was worshiped by the Thebans under the name of Melius, and apples were offered at his altar. This custom, according to tradition, originated in the overflow of the river Asopus, which rendered it impossible to get a sheep across which was intended for sacrifice. Some one at the critical juncture recollected that an apple bore the same name in Greek as sheep — *Mélon* — and offered an apple with four little sticks stuck in to resemble legs, as a substitute for the sheep. After that time apples were offered at the shrine of Hercules.

THE THORN TREE.

The thorn tree or holy thorn was long the object of superstitious veneration among the humble Briton folk. It is said to be the staff of Joseph planted in Botia and spread all over the world to blossom at yule tide. The fire worshipers believed that the sun refused to shadow the holy thorn. The symbol is caution and foresight. The custom of using holly in Christmas decorations appears to have originated with the early Christians at Rome, and was probably adopted from the Romans who during the Saturnalia festival sent branches of holly with gifts to friends as an emblem of peace and good will. The earliest record of Christmas church decorations in England is in a carol written during Henry VI. reign.

The ash tree has been a rival of the oak in mythological worship from the earliest time. There are traces of an ancient reverance for this tree among the Celts, but it is more especially the property of the Scandinavian races. With them the great ash tree Yggdrasil, represented the universe, or more truly, life. Its roots lie deep down in the kingdom of Hela or death; the trunk reaches up heaven high, and its branches spread over the whole world. It is watered by the triple Norus — the past, present and future who sit at the foot of it drawing the water from the sacred well. To quote from Carlyle: "Its boughs with their buddings I die — leafin gs — events, things done, catastrophies, stretch through all lands and times. Its boughs are historic of nature. The rustle of it is the noise of human existence, onwards from of old. It is the past, the present, the future; what was done, what is doing, what will be done; the infinite congregation of the verb *To do*." Of all true myths this one of Yggdrasil is the most complex,

the most beautiful, it has inspired the past and formed the subject of deep study and research in Scandinavisn mythology. (Why the ash-tree was adopted by our forefathers as their mysterious world tree will always remain a mystery.) The vikings of Norway and Denmark have received the name of "ash men," and the poet Edda asserts that the three sons of the giant, of whom Adin was the eldest, made the first man from a block of ash-timber which they found on the sea-shore.

THE PALM TREE.

The palm, the fig and the cedar are the most ancient types of the Tree of Life. Of these, the earliest of which any representation occurs is the palm. It figures as a Tree of Life on an Egyptian sepulchral tablet, certainly older than the 15th century B. C., and which now is preserved in the museum at Berlin. In the recent excavations at Bubastis columns have been discovered which have the sculptured palm capitals which date back certainly 3,000 or 4,000 years B. C., showing that the palm was held in veneration as a symbol from the earliest historic period. This tree is one of the scriptural types of a righteous man, and it has been suggested that there is a reference to the palm — which was popularly believed to put forth a shoot every month — in St. John's description of the Tree of Life in the midst of the Heavenly Jerusalem, "which bear twelve manner of fruits and yielded her fruit every month."

The palm branch of the Christian martyr was not only an emblem of victory adopted from a well-known heathen use of it, but typified still more strkingly his connection with the Tree of Divine Life, whose leaves were for the healing of the nations. It is considered criminal to fell a palm tree — a date palm — while it is still in its vigor, and both the Bible and the Koran forbid the warriors of the true God to apply the ax to the date tree of an enemy.

THE SACRED FIG TREE.

The second of these sacred trees is the fig. This in Latin myths plays an important part, it was held sacred to Bacchus and was employed in religious ceremonies. The fig tree which overshadowed the twin founders of Rome in the wolf cave was an emblem of the future prosperity of the tree, and the legend testifies to the high value set upon the tree by the nations of antiquity.

The oldest historical tree in existence of which we have any authenticated history is a fig tree — the famous Bo tree of Ceylon. It was planted two hundred and eighty-eight years before Christ, making it two thousand one hundred and seventy-eight years old at the present time. It was reared from a branch sent to Ceylon from Magadha which was said to have miraculously severed itself from what was held to be the identical fig tree under which Buddha was reclining when he underwent his divine transfiguration. Its heart-shaped leaves, which, like those of the aspen, appear, even in profoundest calm, to be ever in motion, are supposed

to be in the recollection of the mysterious scene of which they were the witness. The aspect of this tree suggests the idea of extreme antiquity; it is enclosed by a wall of rough masonry, and pillars support the branches. The time-worn steps which approach the place, the grotesque carvings which decorate the stone work and frieze, all impart the idea that the tree which they encompass has been watched over with abiding solicitude and regarded with excess of veneration which could never attach to an object of dubious authenticity. An Indian periodical describing the white elephant purchased by P. T. Barnum, states, that under the terms of the deed of sale, Mr. Barnum was required to swear by the sacred Bo-tree, that the animal, itself reveranced in the highest degree, should receive every kindness and consideration.

CEDARS OF LEBANON.

The third of these sacred trees is the pine or cedar, the most ancient of which are those venerable cedars of Lebanon, the most solemnly impressive tree in the world. They number now about twelve, and are, says Dean Stanley, in Sermons in the East, "such as must always have impressed the imaginations of those who saw them. Their massive trunks clothed with scaly texture, almost like the skin of living animals and contorted with all the multiform irregularities of age, may well have suggested those ideas of regal, almost divine, strength and solidity which the sacred writers ascribe to them."

The white poplar, according to ancient mythology, was consecrated to Hercules because he destroyed Cacus in a cavern of Mount Arentine which was covered with those trees, and in the moment of his triumph he bound his brow with a branch of one as a token of his victory. When he descended into the infernal regions he also returned with a wreath of white poplar around his head. From this time the leaves were as we see them now. The smoke turned the outside of the leaf almost black and the perspiration from the hero's brow turned the inner part white. It is said that the ancients consecrated this tree to Time because the leaves are in continual motion, and being so dark on the upper side and white below they indicate the alternation of the day and night.

OAK TREES.

Leaving the trees which are of interest through pagan mythologia, and we have been able only to glance at a small proportion of these, we find in England many old boundery trees marking the limits of shire or manor which have an historic interest. Such was the great shire-oak which stood at the meeting place of York, Nottingham and Derby, into which three counties it extended its vast shadow. The Crouch oak of Addlestone Surrey, under which Wycliffe preached and Queen Elizabeth dined, is one of the ancient border-marks of Windsor forest, whose name was derived from the crouch or cross cut upon it. Trees thus marked were withdrawn from the dominion of Thor or Odin, and not only afforded help and pro-

tection to human beings, but to some tribes of the Elfin world who were hunted by the wild huntsman until they could reach a tree with a cross on it. Another oak connected with the history of Queen Elizabeth is the one standing in the park of Hatfield house and under which the young princess was sitting when she received the news of the death of her sister, Queen Mary, which left her Queen of England. To make this story more real there is still shown in the library of the house, the hat which Elizabeth wore when she received the message. The oak is now little more than a hollow trunk, the upper part still throwing out green leaves from a few thin branches. When Queen Victoria visited Hatfield house a few years since she carried away an acorn from this tree, strangely enough the last acorn the tree has ever borne.

In Windsor park, until within a few years ago, there stood a celebrated oak known as Hero's oak, so called from the fact that a woodsman of that name hung himself on the tree, so that Queen Elizabeth should be the first to discover his lifeless body. Shakespeare has rendered this tree immortal by making it the trysting place for Falstaff and his wild companions.

Not far from Olney is the wild, woody tract called Yardlaschase; in it is a great oak called Judith, in remembrance of the niece of the conqueror. Opposite the little island in the Thames, known as Magna Charter Island, from the legend that there King John was forced by the haughty barons to sign the charter which was the birthright of English liberty, there stands on on the banks of the river an immense Yew-tree, beneath which Henry VIII. met the unfortunate Anne Bolyn, the sad and gloomy yew overshadowing a love which in after time brought so much misery. Another tree, the branchless trunk of an old oak, standing in Richmond park, commemorates the closing tragedy in Anne Bolyn's life. Under it on the 19th of May, 1536, Henry VIII. waited impatiently for the signal gun from the tower, which was to announce that the sword had fallen on the neck of his once "entirely beloved Anne." When it sounded he exclaimed with "ferociou joy," "The deed is done," and hurried off to her rival Jane Seymour.

Of the historic English tree, the one most familiar is the oak of Boscobel, where Charles II. lay hidden for twenty-four hours after his defeat at Worcester. It was this same king who, some years later, granted the famous charter to Connecticut, which had such a remarkable history, and which was itself concealed in a tree, the Charter-oak of Hartford.

THE TREATY TREE.

The treaty tree of Philadelphia stood for nearly two centuries as a monument to the celebrated treaty of peace and friendship which William Penn made with the Indians under its leafless branches. Benjamin West commerorated the scene of this treaty in a famous painting, in which, however, curiously enough, he omitted the river on the banks of which the tree stood.

There are many other celebrated American trees — the Washington elm at Cambridge, the Jane M'Crea tree, Arnold's willow, the Magnolia council tree at Charleston, and the "Triste Noche," an old cypress, standing just outside the city of Mexico, under which Cortez passed the night after his defeat in 1520, but time forbids the enumeration of any more of these living land marks of history, which were old when this continent was a trackless wilderness, and which have stood as silent witnesses of the desecration of man through the centuries of change.

There are many beautiful and interesting creations of forest life which still remain unnoticed — the olive, the willow, the laurel, the yew, which come crowding before us, each with its own fascinating story, until we stand amazedly, like Macbeth as the long line of Banquo's offspring passed beneath his troubled vision — and leave the history but half told.

DISCUSSION.

Mr. Broughton — Wonders never cease. I am astonished to have heard so fine an essay completely filled with heathen gods and pagans and not a word for the new testiment, but about three chapters from the Druid poet, Ossian.

John Hinton, Milwaukee — It seems to me, whether consciously or unconsciously, we are largely influenced and inspired by our surroundings, the beauties of nature. There are many beautiful thoughts and graces of mind of which we have no record. A man who doubtless looms up in all lands head and shoulders above all others, the always memorable Shakespeare, who has told us that there are

> "Tongues in trees, books in the running brooks,
> Sermons in stones, and good in everything."

and hence when any lady prepares a paper of that kind, which brings our attention and incites our admiration for nature and for that most beautiful ornament of nature a grand old tree, we can all derive good lessons from it.

Mr. Peaslee — The paper that I have just heard is certainly a magnificent one. It is one of the best papers I have ever heard in connection with this subject. I wish the lady had given a few more of our historical trees. There are many historical trees in this country and I would have mentioned

some of them to-day but, in view of this paper, I was of the opinion it would go into the subject far more thoroughly, and hence would be more interesting than if given in connection with mine.

Mrs. Neville—I could supplement the list with many more but my time was limited to twenty minutes and I have already taken thirty.

In Memoriam.

Samuel Hunt.

Members of the Wisconsin State Horticultural Society:—Again another page in our Transactions tell you that death, which is no respecter of persons, has transplanted from this earthly garden one of our number into that paradise where flowers are ever blooming, and trees are ever fragrant with the breath of spring. Samuel Hunt died at his home in Evansville, January 26, 1890, aged seventy-four years and twelve days. Mr. Hunt was born in Windham, Maine, January 14, 1816. At the time of his majority he engaged in mercantile business with a cousin in the city of Portland. He was elected to the Maine legislature in 1852, and was a member of that body on the passage of the first Maine liquor law. He was always an uncompromising foe to intemperance, consequently could engage in no party or measure which by deed or act did sanction the use of alcoholic liquors as a beverage. Though a republican on national questions, in later years his vote and influence was with the prohibition party.

In 1854 Mr. Hunt closed up his business in Portland and emigrated to Wisconsin, where he bought a farm in the town of Rutland, Dane county, living there until 1869, when he moved to Evansville, where he engaged in the nursery business. His fine aesthetic taste and his love for horticulture, neat and correct habits, made his home and its surroundings one of beauty, with an air of comfort, elegance, and refinement. Upright and honorable in all his dealings with men, he detested shams and tricks of trade, and his word was never doubted. These characteristics of true manhood, with his quiet unassuming ways, made to him friends in every walk of life. At the time of his death and for many years he had been a member of the Congregational church in Evansville, and socially in that society, and in the community, he will be sadly missed. Besides his wife, he leaves one son and a daughter to mourn the loss of a good man, a true husband and father.

Charles H. Greenman.

The subject of this brief notice was a native of Plainfield, N. J., where when a young man he learned the trade of wagon making. He became a resident of Milton, Rock county, Wis., in 1854; removed to Wauwatosa,

in 1878; to Dover Center, Minn., in 1883, and to Chatfield, Minn., in 1887, where he died December 9, 1889, aged fifty-seven years.

While a resident of Milton, Wis., Mr. Greenman became interested in practical horticulture, and for fifteen years was a grower of nursery stock and small fruits, and though not the originator, was then the chief propagator and introducer of the Janesville grape. At Wauwatosa he planted what is now the most extensive and successful vineyard in that portion of this state. In Minnesota he was known as an extensive propagator and fruit grower, and everywhere the genial nature of Mr. Greenman won for him many friends. As a member of our local and State Horticultural societies, he proved a useful and faithful member, who loved horticulture as a pursuit.

We sympathize with the family friends in this bereavement.

Peter Henderson.

This distinguished florist, seedsman, and author of many standard works on horticulture, died at his home on Jersey City Heights, January 17, 1890, from an attack of pneumonia which began with the prevailing influenza. His friends had only considered his condition serious for a few days before his death. His mental and physical vigor seemed unimpaired up to the period of his last illness, so that it may very appropriately be said "he died in the harness." A well rounded and noble life. He leaves a wife, one married daughter, and two sons who were partners with him in business, besides sympathizing friends in two continents.

Few names are better known to the millions of farmers of our land than that of Peter Henderson. Like Peter Carter in the book business, Alexander Stewart in dry goods, Andrew Carnegie in iron manufacture, and others distinguished in their respective spheres, Mr. Henderson came from Scotland to this country in youth and without capital. Perhaps it would be more accurate to say without money. His capital was better than bonds or gold — a character well established for integrity, a will to work, an inexhaustible fund of energy and pluck. In short, he brought here Scotch grit and sturdiness. Physically he had the vigor and health which come from being early accustomed to the out-of-door work of the gardener. He was no hot-house plant.

BIOGRAPHICAL.

From various publications we derive the following interesting facts which illustrate not only the circumstances and processes which belong to the career of a self-made man but indicate a native moral force and integrity rare to find.

Peter Henderson was born at Path Head, twelve miles from Edinburgh, Scotland, in 1823. His father was law steward of a gentleman in the neighborhood.

Peter was educated at the parish school where he was a foremost scholar, winning more prizes than any of his fellows of the same age. At the age of fourteen he became the clerk of a liquor dealer, really a bartender in Edinburg, and was there subjected to great temptation; but his moral stamina was proof against these temptations.

HOW HE MET TEMPTATIONS.

At the age of sixteen, just fifty years ago, he was apprenticed to a gardener, when temptations again assailed him. It was the practice of the lads of the establishment to go to a tavern every Saturday night. Against this practice he set his face so firmly that he nearly abolished it. From that time he has been an outspoken champion of temperance. So well did he acquit himself as an apprentice and careful student of botany, that at the age of sixteen he was awarded the gold medal offered by the Botanical Society of Edinburgh for the best scientifically arranged Herbarium.

CAREER AS AN AUTHOR BEGUN.

At about that time he became a member of a society for the advancement of horticultural science, and was selected to prepare a paper for the London Gardener's Gazette denouncing the common practice of holding as secrets many horticultural operations of the day. It drew from the editor a two-column reply. This was his first appearance in print. Since then the American people have heard much through the press about what he knows of gardening.

Young Henderson arrived in New York when he was twenty years of age, as we have already said without funds. He worked for gardeners and florists until he had saved money enough to start the business of a market gardener on his own account in 1847. He worked on an average of sixteen hours a day.

He gradually added the florist branch to his establishment, and his business increased until it became, perhaps, the largest establishment of the kind in the world. His greenhouse on Jersey City Heights presents a covering of more than five acres of glass, which with his seed warehouse in Courtlandt street, New York, gives employment to one hundred men. One peculiarity of Mr. Henderson's establishment is the quick acknowledgment and reward of merit among his employes.

THE FATHER OF AMERICAN HORTICULTURE.

The development of horticulture in America, particularly in the vicinity of New York, is in no small degree due to Mr. Henderson's writings and example. He has written much on the subject in a practical vein, and in a simple, plain style which could be understood by the people. His first work, "Gardening for Profit," appeared in 1866, and down to 1883 100,000 copies had been sold. In 1868 his "Practical Fioriculture" appeared, of which about 50,000 copies have been sold. In 1875 his "Gardening for Pleasure" was published and more than 20,000 copies have been sold. His last work is a "Hand Book of Plants," a condensed cyclopædia, published

in 1881. The popularity of his writings is due to the fact that in purpose, style and matter they are calculated to be useful, reflecting well the character of their author.

PUBLIC SPIRITED.

Mr. Henderson was never exclusive nor disposed to draw himself within a shell of pride or selfishness. He was prominent in the societies organized for the general advance of horticultural science and the prosperity of all engaged in similar lines of business. Although he had become a man of wealth, yet he was disposed to use what he had acquired for the general good. For example, he was the founder of a savings bank and at one time when there was a loss from mismanagement, but from no fault of his, Mr. Henderson promptly came forward and helped make up the deficiency.

The large attendance at the funeral services, held at the Bergen Presbyterian church, was indicative of the estimation in which Peter Henderson was held among his fellow-citizens. Among the numerous appropriate floral tributes was a broken column of roses and lilies of the valley, sent by the American Order of Foresters. Rev. Charles Herr, the pastor, conducted the services. The burial was at Greenwood Cemetery.

BEST MONUMENT.

Probably the most enduring monument to Peter Henderson will be his books on horticulture. He has written hundreds of magazine articles which we trust will also be gathered into volumes, and so preserve them in a more permanent and accessible form. The sale of his books already exceed two hundred thousand copies. It is a wonder that, with his immense business and especially keeping up, as he did, the personal management of his large greenhouse and florist department, and especially with his extensive correspondence, he could find time to write so much and so well for publication.

The popularity of Mr. Henderson's writings was due to the fact that they were eminently practical clear and concise, and though in many points he was radical, meeting sharp criticism, he lived to see many of his radical methods adopted as a rule of practice. Mr. Henderson was the true friend of every deserving young gardener with whom he came in contact. Nearly every man in his service was of his own training. He had some men working for him at the time of his death who had been in his employ for twenty-eight years, and many who had been with him for twenty years and more. It was not strange, then, that a reciprocal attachment existed between employed and employer.

None came to him for assistance who were turned empty, away and many young men who started out in business for themselves, acknowledged their success to be due not only to his skill as gardener and florist, but to his correct habits, upright, moral character, and a concientious devotion to principles of right. His example was an ever present precept and needed no word to enforce it.

MISCELLANEOUS BUSINESS AND RESOLUTIONS.

Mr. Werden Reynolds, of Green Bay, offered the following resolution, which was adopted and referred to committee on Experimental Stations:

Resolved, That a standing committee be appointed to whom shall be referred and whose duty it shall be to consider and report thereon on proper occasions all matters and questions pertaining to our mutual interests and relations with other kindred organizations, with experimental operations conducted under the auspices of the state university, and with related business originating in or suggested by any transaction of the general government of concern to this society.

LETTER FROM PROF. VAN DEMAN.

U. S. DEPARTMENT OF AGRICULTURE,
Office of the Pomologist,
WASHINGTON, D. C., Feb. 3, 1890.

MR. A. L. HATCH,
Corresponding Secretary of Wisconsin Horticultural Society.

DEAR SIR:—Being aware that the annual meeting of your society is to be held at Madison this week, I wish to express to your members my sincere regrets at not being able to be present on that occasion. I also wish to express to them my sincere desire that they consider this division at their service and hope that it might be able to serve them in an acceptable manner. I am sorry that the limited appropriations at my command have been so small that I have not been able to do many things which it has been my earnest desire to do. It is, however, hoped that the present congress will increase the appropriation, and enable this division to carry into effect plans that have long been in my mind. One thing that I have greatly desired is, that a portion of the fund now used exclusively for the purchase and distribution of flower and vegetable seeds may be used in the purchase and distribution of plants, trees, scions and cuttings of fruits. For three years past I have been endeavoring to have this done, but so far have not been able to succeed. There are in your state, and in the states and territories of the northwest many varieties of wild fruits now going to destruction before the axe and fire of the settler, which should be hunted up in the fruiting season by a special agent or agents, and placed

in the hands of experimenters. This is another thing which I hope to be able to do if the necessary funds are appropriated, and I think persons of experience and observation may be found in your society and the neighboring ones to do the work.

I hope that you will seriously consider these matters, and others which may suggest themselves to you, and that we may work together in the interests of pomology.

Very respectfully,

H. E. VAN DEMAN,
Pomologist.

UNITED STATES DEPARTMENT OF AGRICULTURE,
Office of the Pomologist,
WASHINGTON, D. C., Feb. 15, 1890.

MR. B. S. HOXIE,
Secretary Wisconsin Horticultural Society, Evansville, Wisconsin.

DEAR SIR: — Your kind letter of the 11th instant has just been received, and I wish to express my thanks to you and to the society for the appreciative resolution which you passed at the last meeting. I can not but regret that the limited appropriations for Pomology have kept me from doing many things that I would liked to have done, and had planned to do. A considerable increase has been asked of congress for the use of this division, but I understand that some members, and even members of the committee on Agriculture object to increase of appropriations to any division of this department, because as they say "it would not be good politics." To me this seems a most unreasonable view of the case, and I trust that anything that the fruit growers and members of Wisconsin can do to cause their members in the House and Senate to favor an increase of appropriations which shall, in a measure, place this department on the footing it should have.

Your institute work is a grand thing for the farmers and fruit growers, and I wish every state was as well organized as yours in this work, and that our nation has a similar system of instruction.

Very truly,

H. E. VAN DEMAN,
Pomologist.

UNITED STATES DEPARTMENT OF AGRICULTURE,
Section of Vegetable Pathology.
WASHINGTON, D. C., Feb. 17, 1890.

B. S. HOXIE, Evansville, Wis.

DEAR SIR: — I am in receipt of your favor of February 12th notifying me of the resolutions passed by your society, and in reply desire to thank the society through you for this kind appreciation of our work.

We hope to continue the experiments the present year, devoting our attention to a number of important plant diseases.

Respectfully,

B. P. GALLOWAY,
Chief of Section.

HORTICULTURAL ROOM.
THURSDAY MORNING February 6th, 8:30.

President Smith called to order for the purpose of hearing reports of commitees on award of premiums before taking up the business of the day in assembly chamber. Committee on Fruit made the following report:

The committee on Award of Premiums would report as follows:

For the best and largest exhibit of seedling apples by any county or local society, we find two entries, Waupaca County Horticultural Society and Waukesha County Society. We therefore award first prize of $15 to Waupaca County Society, and second of $10 to Waukesha county.

Largest and best display of apples, five entries.

Charles Hirschinger of Baraboo, first premium..... $10 00
Geo. Jeffery, second 5 00

Best five varieties winter apples, seven entries.

A. L. Hatch, Ithaca, first premium..... $3 00
Geo. P. Peffer, Pewaukee, second..... 2 00

Best three varieties fall apples, four entries.

Geo. P. Peffer, Pewaukee, first premium..... $3 00
F. H. Chappel, Oregon, second..... 2 00

Best plate winter for market, eight entries.

Chas. Hirschinger, Baraboo, first premium..... $2 00
Geo. P. Peffer, Pewaukee, second..... 1 00

Seedling apples, not less than three varieties, quality and hardiness to rule, five entries.

Geo. Jeffery, Milwaukee, first premium..... $2 00
Geo. P. Peffer, Pewaukee, second..... 1 00

Single plate varieties, Alexander, three entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Geo. P. Peffer, Pewaukee, second..... 50

Fameuse, six entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Geo. P. Peffer, Pewaukee, second..... 50

Golden Russet, five entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Hollis Gibson, Lind, second..... 50

Orange Winter, three entries.

A. L. Hatch, Ithaca, first premium $1 00
Chas. Hirschinger, Baraboo, second..... 50

Pewaukee, five entries.

Geo. P. Peffer, Pewaukee, first premium..... $1 00
A. L. Hatch, Ithaca, second 50

Plumb's Cider, four entries.

F. H. Chappel, Oregon, first premium..... $1 00
Chas. Hirschinger, Baraboo, second..... 50

Rawles Jannette, three entries.

Geo. P. Peffer, Pewaukee, second premium ..... $ 50
No first premium awarded.

Tallman Sweet, eight entries.

Chas. Hirschinger, Baraboo, first premium $1 00
A. L. Hatch, Ithica, second premium..... 50

Utter, four entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
F. H. Chappel, Oregon, second 50

Wealthy, four entries.

Chas. Hirschinger, Baraboo. first preminm..... $1 00
Geo. P. Peffer, Pewaukee, second 50

Westfield, five entries.

Isaac Gale, Waukesha, first premium..... $1 00
Geo. Jeffery, Milwaukee, second..... 50

Willow Twig, five entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Hollis Gibson, Lind, second..... 50

Wolf River, two entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Wm. Springer, Fremont, second..... 50

Jonathan, four entries.

James O. Zanne, Somers, first premium..... $1 00
G. P. Peffer, Pewaukee, second..... 50

Yellow Bellflower, four entries.

Geo. Jeffery, Milwaukee, first premium..... $1 09
Geo. P. Peffer, Pewaukee, second..... 50

R. I. Greening, two entries.

Geo. Jeffery, Milwaukee, first premium..... $1 00
James O. Zanne Somers, second..... 50

Newtown Pippin, three entries.

Geo. Jeffery, Milwaukee, first premium..... $1 00
No second premium.

Northern Spy, four entries.

Geo. P. Peffer, Pewaukee, first premium..... $1 00
Isaac Gale, Waukesha, second..... 50

Lowell, one entry.

Geo. Jeffery, Milwaukee..... $1 00

Baldwin, one entry.

Geo. P. Pefier, second premium..... $0 50

Winter Wine Sap, three entries.

Geo. Jeffery, Milwaukee, first premium..... $1 00
Geo. P. Peffer, Pewaukee, second..... 50

Walbridge, six entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
A. L. Hatch, Ithaca, second..... 50

McMahon, two entries.

F. H. Chappel, Oregon, first premium..... $1 00
Chas. Hirschinger, Baraboo, second..... 50

Haas, four entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
A. L. Hatch, Ithaca, second..... 50

Rome Beauty, three entries.

Geo. Jeffery, Milwaukee, first premium..... $1 00
No second premium.

Grimes' Golden, three entries.

Geo. P. Peffer, Pewaukee, first premium..... $1 00
Geo. Jeffery, Milwaukee, second..... 50

N. W. Greeniny, two entries.

A. L. Hatch, Ithaca, first premium..... $1 00
No second premium.

Perry Russet, four entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Geo. Jeffery, Milwaukee, second..... 50

Fall Orange, one entry.

Chas. Hirschinger, Baraboo, first premium..... $1 00

Bell Pippin, one entry.

Chas. Hirschinger, Baraboo, first premium..... $1 00

Baily Sweet, one entry.

Chas. Hirschinger, first premium..... $1 00

St. Lawrence, one entry.

Chas. Hirschinger, Baraboo, first premium..... $1 00

Pomme Grise, one entry.

Chas. Hirschinger, Baraboo, first premium..... $1 00

Autumn Strawberry, one entry.

Chas. Hirschinger, Baraboo, first premium..... $1 00

Roman Stem, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Canada Red, four entries.

Geo. Jeffery, Milwaukee, first premium..... $1 00
Geo. P. Peffer, Pewaukee, second..... 50

Baltimore, one entry.

A. L. Hatch, Ithaca, first premium..... $1 00

Ben Davis, three entries.

A. L. Hatch, Ithaca, first premium..... $1 00
Geo. Jeffery, Milwaukee, second..... 50

Hollis, one entry.

A. L. Hatch, Ithaca, first premium..... $1 00

Repka, three entries.

F. H. Chappel, Oregon, first premium..... $1 00
A. L. Hatch, Ithaca, second..... 50

Little Red Romanite, one entry.

A. L. Hatch, Ithaca, first premium..... $1 00

Clark's Orange, two entries.

Isaac Gale, Waukesha, first premium..... $1 00
Geo. P. Peffer, Pewaukee, second..... 50

Wagner, one entry.

Isaac Gale, Waukesha, first premium..... $1 00

Seedling, one entry.

Isaac Gale, Waukesha, first premium..... $1 00

Russian (new), one entry.

A. L. Hatch, Ithaca, first premium..... $1 00

Twenty ounce Pippin's one entry.

Geo. P. Peffer, Pewaukee, first premium.....

Winter Penock, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Baily Sweet, two entries.

Chas. Hirschinger, Baraboo, first premium..... $1 00
Geo. P. Peffer, Pewaukee, second..... 50

Smoke House, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Maiden Blush, two entries.

Geo. P. Peffer, Pewaukee, first premium..... $1 00
Geo. Jeffery, Milwaukee, second..... 50

Sun Beam, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Gray Pearmain, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Vandi Vier, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Rambo, one entry.

Geo. P. Peffer, Pewaukee, first premium..... $1 00

Calvert, two entries.

Geo. P. Peffer, Pewaukee, first premium $1 00
Geo. Jeffery, Milwaukee, second 50

Best collection of Pears, two entries.

Geo. Jeffery, Milwaukee, first premium $2 00
Geo. P. Peffer, Pewaukee, second 1 00

Best collection Grapes, two entries.

Isaac Gale, Waukesha, first premium $2 00
Geo. P. Peffer, Pewaukee, second 1 00

WERDEN REYNOLDS,
R. J. COE,
J. M. EDWARDS,
Committee.

SUPPLEMENTARY REPORT.

Your committee would also call attention to samples of Cheney and De Soto plums put up in alcohol, and the Cheney plum canned in the usual manner of domestic fruit. The Cheney plum is a true native, of extraordinary size, beautiful appearance, and free from acridity usual in our native plums after being cooked. Also to a bottle of the Princess strawberry, a new variety originated by J. C. Kramer of La Crescent Minn, remarkable for its great size and reputed productiveness. We ask that this suplementary report be published in our Transactions.

WERDEN REYNOLDS,
J. M. EDWARDS,
R. J. COE,
Committee.

REPORT OF COMMITTEE ON PAINTINGS.

Mr. President: Your committee to whom was referred paintings on exhibition, would report that we find two "collections" of fruits and flowers, and would give first prize of $5.00 to Miss Edith Kellogg, of Janesville, and second, $3.00, to Miss E. B. Adams, of Madison.

Respectfully submitted,
M. A. THAYER,
MRS. VIE H. CAMPBELL,
MRS. A. L. HATCH.
Committee.

Mr. Kellogg as chairman of committee on Revision of Fruit List, made the following report, which was adopted.

REPORT OF COMMITTEE ON REVISION OF FRUIT LIST.

Mr. President and Members of the Wisconsin Horticultural Society:—Your committee on revision of recommended list would report as follows: Add Hibernal, Longfield and Orange Winter to first list. Strike out Orange Winter, and Longfield from second list, and call Westfield Seek no Further, *Westfield.* We would also add Transparent and Repka Malenka to second for special locations.

Add to crab apples: Martha, Novelty and Spitzenburg.

Strawberries for general cultivation: Wilson, Crescent, Jessie, Bubach and Warfield No. 2.

For light soil: Crescent, Wilson, Manchester, Bubach No. 5, Parry and Warfield No. 2.

Grapes for "general cultivation" we will add, Telegraph. For "unfavorable locations," Ulster's Prolific, and for "trial," Niagara, Lady Wyoming Vergennes, Lindly and Duchess. Black raspberries, add: Nemaha, and red raspberries, Marlboro. Blackberries, no change in list.

In pears we will add, Bessimianko and Gakovska. And we recommend the planting of pear seeds, especially those of Flemish Beauty. In plums we will add Rolling Stone and Wolf to list "for trial."

Cherries, add: Wragg, Osthime and Besavabian for trial. Currants: White and Red Duch, White Grape, Victor, Fay's Prolific, Prince Albert and Long Bunch Holland.

Goosberries: Houghton, Dowing, American Cluster, Smith's Improved and Industry.

In trees and shrubs we have no change to make, but would caution against planting American Ivy near grape vines.

We would also place upon record the following new varieties of apples as worthy of trial: Jenney, Crocker, Mary, Matthews Russet and Manning's Red, Wm. Springer, Waupaca Co. Baltimore Sweet, Hollis and Custer, Richland Co., A. L. Hatch. Sunbeam and Newton, from Waukesha county, Geo. Peffer. Kirkwood, Excelsior, Fairfield and No. 6, from Sauk Co., Charles Hirschinger. Golden Sweet, Everbearing Winter, and Jersey Pippin, from Dane Co., F. H. Chappel. Resha, from Waukesha Co., Isaac Gale. Avista, from La Crosse Co., A. J. Phillips.

All of which is respectfully submitted.

G. J. KELLOGG,
J. M. EDWARDS,
CHAS. HIRSCHINGER,
Committee.

Secretary presented report of committee on prize essays as follows:

President Wisconsin State Horticultural Society:

Your committee appointed to consider and examine the Prize Essays, written in accordance with the offer of the society, would respectfully report as follows:

The prize for the best essay on "The Native Trees and Shrubs of Wisconsin" to be awarded to Miss Nora F. Adams, Evansville, Wis., and the prize for best essay on "The Wild Plants of Wisconsin" to be awarded to Miss Dora S. Haviland, of Janesville, Wis.

That no awards be made under the topic, "School Grounds," as none came within the requirements as published by your society.

All of which is respectfully submitted,

(Signed.) PROF. H. H. JACOBS,
LIZZIE GILLIES,
VIE H. CAMPBELL,
Committee.

REPORT OF FINANCE COMMITTEE.

MADISON, WIS., Feb. 4, 1890.

Mr. President: Your committee to whom was referred the books, accounts and vouchers of the secretary and treasurer, would report that we have made a careful examination of the same and find them correct.

All of which is respectfully submitted.

(Signed.) N. N. PALMER,
J. M. EDWARDS,
Committee.

REPORT OF COMMITTEE ON OBSERVATIONS.

REPORT OF GEO. P. PEFFER, WAUKESHA CO.

TEMPERATURES, STORMS, ETC.

A very good year, not too cold nor too hot for any length of time; it averaged well, the hottest day, August 19, 98° for about four hours, and 22° below zero, February 22, for only three-quarters of an hour, were the extremes.

But two bad storms visited this section; the first was May 26, heavy rain; May 27th, cold and snow; on the morning of the 28th, ice, and much damage was done on low grounds.

September 4th, a thunder storm, rain and wind. Eight inches of water fell on a level in two and one-half hours. The wind blew a gale, taking down trees, leveling fences and some buildings. On rolling hillsides, ground that was not covered with a sod or roots of some kind, was badly

washed, in fact loose soil all ran with the water into the valleys and streams. It is a good thing to have a good subsoil to make arable soil again.

VARIETIES FRUITED.

Owing to our favorable winter all varieties of fruit set well, and where sheltered from the big storm and not too many insects spoiling the fruit or leaves on the trees and bushes, a very large crop of fruit was harvested.

Of apples, those varieties not fruiting much last year are very full, and those full last year are a good crop again this year. Although the heavy storm thinned out winter varieties, they were yet an average crop.

Pears, sour cherries and European plums, a full crop. Small fruits of all kinds a large crop, except in low places where late frosts had injured the blossoms. Blackberries of different varieties all fruited well without protection, owing to our mild winter.

SOILS, SITES AND RESOURCES.

Soils. This district has a great variety, from a stiff hard brick clay to clear sand all along Lake Michigan, from Sheboygan south to Racine, mostly clay from four to ten miles back in the country, Kenosha county excepted, this has more of a sandy soil, but is well adapted for fruit, where the land is naturally underdrained as the other counties. Ozaukee and Waukesha county are more of a drift and mixed soil — clay, sand, limestone, gravel, marl and muck, and vary undulating — so is mostly well underdrained, and well calculated for fruit of various kinds.

For orchards a north or north eastern slope is preferable, with a good firm soil.

Good cultivation, mulch and manure will keep up an orchard, and must be attended to especially when the trees are bearing heavily year after year.

FRUIT LIST.

Early varieties are, of apples: Early Harvest — Tetofski, White or Yellow Transparent, Washington, Red June, Red Astrachan, Summer Rose, Summer Pennock, Summer Queen, Sour Bough, Golden Sweet, Red Sweet. Fall — Duchess of Oldenburg, Alexander, Haas, Wealthy, St. Lawrence, Fall Orange, Fall Stripe, Fall Wine Sap, Fall Greening, Fall Cranberry, Fall Strawberry, Fall Spitzenberg, Fall Harvey, Benoni, Felix, Fameuse, Clark's Orange, Drap de or. Colvert. Winter — Talman Sweet, Westfield Seek No Further, Roman Stem, Golden, Perry, and Allen Russet, Canada Red, Sweet Wine, Pewaukee, Yellow Bellflower, Walbridge, Jonathan and Grimes Golden (top worked), Poma Gris, Northern Spy, and many others. (See list, Vol. XVII., p. 252).

Pears: Only the hardiest varieties of long standing trees from twenty to forty-five years old, are Flemish Beauty, Seckel, Buffum, Annas de Eta, Winter Nellis, P. No. 3, Shelden, Summer Bergamot; also some twenty varieties of Russian sorts that are on trial in our district, and are six years planted, stood the cold of 1884–5–6–7, but not yet fruited.

Plums: Lombert, Duan's Purple, Green and Purple Gages, Yellow Egg, Bradshaw, Imperial Gage, Desoto, Forest Garden, Miner, Winnebago, and many varieties of grapes and small fruits too numerous to mention.

FRUIT CROPS, ACREAGE, MARKETS, PRICES, ETC.

Fruit crops, very good. About 800 acres are devoted to small fruit, 760 and over to fruit trees, and the acreage is increasing more yearly.

Markets, in our lake shore cities mostly, and prices:

Apples, early varieties	$1 00 to $2 00 per bbl.
Apples, fall	1 00 to 3 00 per bbl.
Apples, from wagons	20 to 60 per bus.
Apples, winter, good to choice	2 00 to 3 00 per bbl.
Pears, fall, good to choice	2 00 to 5 00 per bbl.
Pears, winter, good to choice	4 00 to 7 00 per bbl.
Plums were very plenty, European varieties in bushel baskets	1 00 to 1 75 per bus.
Cherries, good crop	75 to 1 25 per bus.
Currants, large crop	50 to 2 00 per bus.
Gooseberries	1 50 to 2 00 per bus.
Grapes, Concords, per 10-pound baskets, 2 to 3 cents per pound	20 to 25 per bas.
Grapes, Delaware, per 10-pound baskets, 4 to 6 cents per pound	40 to 60 per bas.
Grapes, Brighton, Rogers' Nos. 4, 9, 15, 19, 5 to 6 cents per pound	50 to 75 per bas.
Grapes, Catawba, Vergunes, 6 to 8 cents per pound.	50 to 80 per bas.
Strawberries (average)	09 per qt.
Raspberries	10 per qt.
Blackberries	08 per qt.

HORTICULTURAL EXHIBITIONS, MEETINGS AND SOCIETIES.

Horticultural exhibitions were very good, and all varieties shown were nearly free from specks and mildew. At the Waukesha county fair some 60 varieties of apples, 12 of pears, 8 or more of plums, 30 of grapes, mostly all by amateurs; also many varieties of small fruits, canned.

Meetings — These societies held their annual meeting on Jan. 9th, 1890.

The Wisconsin Florists and Gardeners' Club hold regular monthly meetings, also special meetings whenever required, at their rooms, No. 1 Grand avenue, Milwaukee. The secretary will probably report to the State Horticultural Society himself. The officers are: Geo. W. Ringrose, president; Archie Middlemass, vice-president; Jos. M. Crowley, secretary; C. B. Whitnall, treasurer.

FRUIT GROWERS.

Fruit growers are numerous in our district; a list of them all would take up too much space in the transactions; however, most of them are near the cities. More than one-half of our farmers are fruit growers, more or less.

Nurserymen.—Wm. Von Baumbach, Wauwatosa; Geo. P. Peffer, Pewaukee; Isaac Gale & Son, Waukesha; George Acker, Butler P. O., Milwaukee Co.

Seedsmen.—Currie Bros., Frank Whitnall, Wm. Warnich, Milwaukee, and more or less all the country stores.

Gardners.—Gardeners are too many to mention, every city and village has from one to fifty or more.

Nurserymen are getting less and going out of the business in our state, owing to the numerous nursery or tree agents that swarm in our state. Many eastern nurseries have local agents, while a nursery firm in Chicago employing 300 agents, and one in St. Paul employing about as many more, pretending to sell western grown trees, are humbugging the people, and getting big prices for the most worthless varieties of trees and plants, Russian mulberries and apricots, Kiefer and Leconte pears at $1 to $2 each, etc., etc. We spoke to one of those agents and asked him how he manages to sell at such figures? Why, says he, our people live on being humbugged, and fools are not all dead.

DISEASES.

The season was a very good one as no great extremes of weather caused either blight or mildew to any great extent. We had but one hot day that would have caused blight, if a cold rain storm would have followed, but the change was gradual, and no wet to cause decay, no damage was done.

Insects, etc.—Codlin moths, curculio, apple gouger, leaf roller, and aphis, did all they could to destroy fruit, but being rather a cool summer they did not multiply so fast, and the mitch and lady bugs attended to those foes very good, and kept them in check more or less, as they were located.

VEGETABLE GARDENING.

Vegetable gardening has not paid well, because too many gardeners, and too large crops. Everything in that line was very cheap in its season. But only one variety of vegetable has been paying well, that was celery; owing to early frost, it was a short crop, and those gardeners that harvested or cared for it early, have made money, while that cut with frost, would not keep, and spoiled.

FLOWER CULTURE, TREE AND ORNAMENTAL PLANTING.

Flower culture was very successful, owing to the favorable season, and plenty of rain in June and July.

Tree planting, same, where they were not dead before they were planted.

There was a good deal of ornamental planting done in the cities and country towns, and on many farms in our district, and all has done well, even varieties of plants and trees not considered hardy for our climate, are going through this winter all safe, as this, thus far, is as mild as last winter, and tenderer sorts are now sold by our numerous tree and nursery agents from east and south, because western nurserymen don't

keep, or could not keep varieties too tender for our climate, except those that winter their stock in the cellar or pits.

We saw Irish Juniper in some front yards, planted out two years, and yet alive.

METHODS OF CULTURE.

All varieties of fruit need clean culture and plenty of it in dry weather, and if plenty room is left between the plants horse cultivators that will work up the soil fine, but not too deep, will supply moisture to plants, bushes, vines and trees.

NEW OR SPECIALLY VALUABLE SORTS.

Having had such a mild winter and favorable summer, nothing new can be reported on as to hardiness. All that was reported last year has done well, and this winter, thus far, is just as favorable, and if it continues so, and not have our cold spell in May or June, there is nothing in the way to harvest again a full crop of all kinds of fruits.

REPORT OF E. S. GOFF, MADISON, WIS.

TEMPERATURES, STORMS, ETC.

A remarkable mild winter was followed by a very early spring, succeeded by a period of cold wet weather in early June, which was accompanied with more or less freezing in many parts of Dane county, though not at the University farm. This caused a severe check to corn and the more tender garden plants. Much sweet and dent corn failed to germinate, and seeds of melons, cucumbers and squashes planted before this period largely rotted in the ground. The crops of grapes, plums, and probably of apples, were largely reduced by the cold weather at blooming time. The latter part of the season will be remembered on account of the great scarcity of rain, less than half of the average amount having fallen from July 1st to October 1st.

VARIETIES FRUITED.

The finest crop of blackberries I have ever seen was on the grounds of Mr. H. C. Adams, of Madison, and was of the Stone's Hardy variety. Although the plants were not protected during the winter of '88-'89. Many of the canes were unable to support the immense crop that formed upon them, and broke down in consequence.

The Bartell's dewbery also bore a good crop of very fine fruit at Mr. Adams' place.

Two new varieties of tomato were tested, viz., Hayne's No. 64, and Nichol's Stone. Both ripened about with the well known Livingston's Favorite, and were equal to it in quality, though the Nichol's Stone was rather inferior to the latter in size.

Two new squashes from France were tested, viz.: "Very Early Prolific"

and "Missions" squash. The first was a very early autumn squash of the Boston Marrow type, and was of very good quality. The other was a winter squash somewhat resembling the Bay State, but too late and unproductive to be of value here.

The Kentucky Wonder watermellon from Northrup, Breslan and Goodwin Cos., of Minneapolis, Minn., was prolific, and the fruit ripened well, but was of only average quality.

FRUIT GROWERS, NURSERYMEN, ETC.

The only fruit growers and nurserymen in this vicinity, that I know of, are Mr. H. C. Adams, of Madison, who grows small fruits for market, and also sells plants; Mr. Henry Schuster, of Middleton, who grows many varieties of grapes, and Mr. F. H. Chappel, of Oregon, Dane county, who grows several varieties of apples and sells nursery stock.

DISEASES, INSECTS, ETC.

The aphis was unusually destructive the past season on fruit trees, currants, etc., and I think the fruit crop was materially reduced in consequence; certainly this was the case with the plum.

Cut worms were exceedingly numerous in spring, and did much damage to corn and garden crops.

The cabbage maggot and potato beetle were less destructive than usual; the currant worm and cabbage caterpillar were about as numerous and destructive as usual.

VEGETABLE GARDENING.

A test of American grown cauliflower seed was very satisfactory. The seed was from the Pugit Sound region, and of two varieties, viz.: Erfurt Earliest Dwarf and Snowball. The seed was planted in the open ground May 14, and plants transplanted to the garden in due time. Notwithstanding the unusually dry summer, every plant headed; a better record than I have been accustomed to give foreign seed, though given more favorable conditions.

METHODS OF CULTURE, TRAINING, ETC.

A new grape trellis was tested at our station the past season, which may prove to be of some value. It is formed of a single post, through which are passed, at three or four points, two slender pieces of wood. A wire is then stretched about the ends of each pair of these cross pieces, to which the canes are tied. The vine, which is of course set near the post at the bottom is pruned to four canes, one of which is tied to the wire between the ends of the cross pieces at the bottom on each of the four sides of the trellis. As the canes grow up they are tied to the wires above in succession. The advantages looked for in this trellis are: 1st, that it gives much more room for training the vine than the ordinary single post, without occupying much more ground; 2nd, that it admits of cultivation both ways; 3rd, that it permits a freer circulation of air through the vineyard

than the ordinary wire trellis; 4th, that it permits four canes to each vine, instead of two as in the ordinary wire trellis. This is not conceded by all to be an advantage.

REPORT FROM A. S. CROOKER, RIPON, FOND DU LAC COUNTY.

During the winter of '88–'89 the fall of snow was about medium. First snow fell December 26th with no frost in the ground. Spring weather came during the latter part of March, and all fruits got an early start.

The last week of May we had three severe frosts followed by a snow-storm, snow falling to the depth of one and one-half inches. This snow did no damage, but the frosts injured the strawberry crop badly, lessening the crop about one-half. All other small fruits escaped serious injury.

We had copious rains from the 20th of May to July. Since that time it has been very dry. No rain fell during September, October and November.

The raspberry crop was fully up to the average for this section.

Blackberries were more than an average crop, the largest, in fact, that has been known here for years.

But little can be reported regarding apples, from this section the trees all having died five years ago.

Prospects for small fruits are good for next year, plants of all kinds having made a fine growth the past season.

REPORT OF MRS. HUNTLEY, APPLETON, WIS.

TEMPERATURE, STORMS, ETC.

The winter of 1889, from January 1st, was very favorable for fruit growing, no severe storms or extreme cold. The snow covered the ground and gave good protection to fruit beds without other covering.

The early spring gave promise of very large crops of small fruits, but a severe frost on the 29th of May killed more than half the strawberries, when the beds were white with bloom.

Grapes were nearly a total failure. The blossoms were frozen just as they were opening. A few of the Delaware and Concord, which escaped the frost, ripened. Tomatoes were killed outright.

VARIETIES FRUITED.

Apple trees are dying every year, but we still have the Duchess, Tetofsky, Wealthy, Utter's Red, and several varieties of crab apples. There are also a few sickly trees of the Fameuse, Talman, the Astrachan, and the Russet, kept in some orchards.

Strawberries: Wilson, Crescent, Jessie and Sharpless.

Raspberries: Philadelphia, Marlboro and Cuthbert.

Blackberries: Ancient Briton, Stone's Hardy.

Grapes: Concord, Brighton, Niagara, Agawam, Janesville, Pocklington, Delaware and Worden.

SOILS, SITES AND RESOURCES.

Nearly every variety of soil exists in this county, from stiff clay to pure sand. The soil bordering on Fox river is a stiff, reddish clay which comes very near the surface; in the northern and western parts of the county there is more sand and gravel. On nearly every farm a site can be found with sufficient inclination for good drainage.

FRUIT LIST.

Apples: Duchess, Tetofsky, Wealthy, Utter.

Strawberries: Wilson, Crescent, Sharpless, Jessie.

Raspberries: Philadelphia, Marlboro, Cuthbert.

Blackberries: Ancient Briton.

Grapes: Concord, Worden, Delaware, Brighton, Agawam, Niagara, Martha.

FRUIT CROPS, ACREAGE, MARKETS, PRICES, ETC.

Apple crop good, acreage small. Blackberries medium crop, but few grown. Strawberries one-half killed by frost, for that season prices were better than usual. Raspberries medium crop, prices good. First raspberries sold for 15 cts. per quart, later for 7 cts. Strawberries 14 cts. per quart, later for 8 cts. Blackberries 12 and 10 cts. per quart. Apples from 50 cts. to $1.00 per bushel.

HORTICULTURAL EXHIBITIONS, MEETINGS AND SOCIETIES.

The Grand Chute Horticultural Society is one of the largest and best societies in this district, its meetings are held quarterly, with an exhibition of fruits and flowers in their seasen.

There are also three farmers' associations in this county, and some of their meetings are devoted to horticultural topics.

FRUIT GROWERS, NURSERYMEN, SEEDSMEN AND GARDENERS.

Many farmers in this district grow an abundandance of small fruits for family use.

Gardeners — F. Boussel, Appleton, Wis.; A. A. Winslow, Appleton, Wis.; A. H. Busch, Appleton, Wis.; N. Nye, Appleton, Wis.; Edwin Nye, Freedom, Wis.

DISEASES, INSECTS, ETC.

Outagamie county is subject to nearly all the diseases that are found elsewhere in the state. Blight is very common.

Many Wealthy apple trees have been killed by blight the past summer. Crabapple trees blight badly, especially the "Lake Winter."

Very little rust on raspberries or mildew or rot on grapes.

We have the "borer and gouger" and curculio, and only grow the native varieties of plums.

VEGETABLE GARDENING.

There are many fine gardens in this locality, both in city and country. A few farmers are raising vegetables for market.

FLOWER CULTURE, TREE AND ORNAMENTAL PLANTING.

Flowers are grown in greater or less quantities in and around nearly all our homes. A few ornamental trees have been planted. Among these are same fine specimens of Catalpa. In one school district $25 worth of ornamental trees were planted on the school grounds.

METHODS OF CULTURE.

There is great want of method and good management among cultivators of small fruits. A few are growing strawberries in long rows, with plenty of room to cultivate with a horse, covering them in winter with straw or marsh hay.

Grapes are pruned, laid down and covered with soil two or three inches deep. Blackberries are laid down and covered after directions given by the most successful cultivators.

NEW OR SPECIALLY VALUABLE SORTS.

No new varieties of apples tested. A few of the Russians have been planted, but they have not yet fruited.

The Marlboro raspberry has been pretty thoroughly tested, and pleases every one.

A number have set new varieties of strawberries, and expect to have the Cloud, Bubach and Warfield No. 2, the coming season.

REPORT OF HORACE BARNES, FLORENCE, WIS.

The summer of 1889 has been cold. July 25th we had a bad storm doing considerable damage to grain. The first frost was September 21st. Very little fruit was raised here; some of the old hardy sorts succeed. We have all kinds of soil, from clean sand to good solid maple land (a kind of loamy soil). The county is very rolling.

All kinds of crabs do well here, but from some cause other varieties do not succeed well in this county. The Wilson strawberry does well and more of this variety cultivated than all others combined. We have a great abundance of wild raspberries, blackberries and blueberries — so that tame varieties are not cultivated.

We have no fruit growers or market gardeners. All kinds of vegetables do well. We need no tree planting in our forest county.

REPORT OF GEO. H. ROBBINS, PLATTEVILLE.

With the exception of a marked lack of rainfall, the season of 1889 was a very good one for the culture and marketing of all kinds of small fruit in this district.

Spring opened up early. Late frosts and damp weather injured the strawberries somewhat while in blossom. Strawberries ripened late, not coming into market until the middle of June.

Raspberry crop was light owing to two seasons of drought. The blackberry crop was the largest ever grown in the district, and prices went down accordingly. The fruit acreage is being increased each year. In strawberries, the Crescent still takes the lead when properly fertilized.

The Cuthbert for red and the Gregg for black, are the standard raspberries, and the Briton and Snyder the standard blackberries. The Concord is the best grape.

There is not any horticultural society in the district as yet.

REPORT OF WARREN GRAY, DARLINGTON.

TEMPERATURES, STORMS, ETC.

Winter mild generally, with little snow. Coldest weather in February, thermometer showing 18° below zero on the 23d, but soon becoming warmer, and on the 27th, so warm that the bees came out.

March 15th, spring birds came in great numbers, ground ready to plow March 27th. Not sufficient spring rains to wet the subsoil. Occasional showers during spring and early summer, but no surplus moisture being in subsoil, all crops suffered more or less, generally more. Strawberries with us were a very light crop, raspberries a little better. Blackberries set very full and were quite promising, and first berries ripening were good, but later ones were poor, and many never ripened. Grapes were late and poor. Apples for some reason were better than usual. At present writing, November 10, ground dry and hard, and should winter set in without copious rains we fear great loss of fruit trees and plants.

VARIETIES FRUITED.

Strawberries: Crescent, Downing, Vick, Manchester, Jessie and Wilson.

Raspberries: Turner, Cuthbert and Gregg.

Grapes: Hartford, Concord, Delaware and Moore's Early.

Blackberries: Snyder, Kitatinny and Ancient Briton.

Apples: Tetofsky, Fameuse, Duchess, Alexander, Roman Stem and Willow Twig.

SOILS, SITES AND RESOURCES.

Soil on prairies, black sandy loam, resisting drouth extremely well. Broken land along streams more or less clay, and has suffered much this season for want of rain.

FRUIT CROPS, ACREAGE, MARKETS, PRICES, ETC.

Fruit crops were all light because of the continued dry weather, with the exception of apples, which were better both in quality and quantity than for several years past. Small fruit acreage increasing. Home market still taking it all at fair prices.

No horticultural meetings or fruit exhibitions except in connection with county fair. We need a good horticultural society.

DISEASES, INSECTS, ETC.

The only insects that did us much damage this year were the curculio and apple worm. But the birds, the beautiful birds, how they did eat! Thousands of them feasted upon our strawberries, gorged themselves upon our raspberries, and even stuffed blackberries until the wild cherries were ripe, when they gave us a rest for a little while. Robins, cat birds, thrushes, etc., came in swarms, all hungry for fruit. Even the little wild canary or yellow bird came and picked the seeds out of our Manchester strawberries, while they were yet green, causing them to wilt and decay.

Fire blight has done some damage to fruit trees; also rust has damaged blackberries and raspberries somewhat.

VEGETABLE GARDENING.

Vegetables planted early and well cultivated, produced fairly well. Best and largest display of vegetables at county fair that ever was known.

We have planted for testing, Dwarf Juneberry and Russian apricot, but none fruited yet.

REPORT OF F. K. PHŒNIX, DELAVAN, WALWORTH COUNTY.

TEMPERATURES, STORMS, ETC.

The year 1889 I consider very favorable for horticulture with the exception of the grape crop. In this vicinity, grapes dropped more or less and I would say over half the crop failed to ripen fully.

VARIETIES FRUITED.

Apples: Fameuse, Fall Orange, Early Joe, Maryland, Red Streak, pretty hardy, very productive every year, a superb tart, cook and dry sort, fair size and keeps fairly to January or February. Walworth Co. Peppin, new medium, whitish, tart all winter, productive, pretty hardy, may be subject to rot after gathering. Forest, new, medium size, all winter, pretty hardy, very productive, red, very fine grain, most delicious mild flavor, becoming almost sweet, late.

Plums: Forest Garden, De Soto.

Cherries: Early Richmond, Late Richmond or Pie, Montmorrency, Wragg.

Grapes: Lady, Delaware, Concord, Wyoming Red, Pocklington, Niagara, Duchess, Brighton.

Currants: Fay, Red Dutch, White Dutch, Victoria, Long Bunch Holland, Cherry.

Gooseberries: Downing, Industry, Triumph, Champion.

Blackberries: Snyder, Stone's Hardy, Kitatinny, Lucretia, Agawam.

Raspberries: Turner, Marlboro, Cuthbert, Reliance, Earhart, Gregg, Ohio, Souhegan, Shaffer.

Strawberries: Jessie, Bubach, Wilson's, Crescent, Manchester, Cumberland, Warfield, Great Prolific, etc.

SOILS, SITES AND RESOURCES.

Soil, mostly oak openings, some black bottom land excellent for strawberries, raspberries and blackberries.

All hardy varieties seem to do well here except so far we can't seem to make Miner plum and its evident seedling, Forest Rose, hit here. But the trees are so magnificently hardy we can't spare them. They bear a few and make good shoots to graft on. Besides I cannot help thinking we will ere long be able to make them fertilize and hold their fruit.

FRUIT CROPS, ACREAGE, MARKETS, PRICES, ETC.

Wild plums scarce this off year.

Apples save in the height of the fall apple season, and perhaps to some extent in the Duchess season, have brought a paying price. Good winter apples have for some weeks past been scarce at $1 per bushel. With most farm crops so low farmers must wish they had more apples to sell. Good apple cider vinegar sells well at fifteen cents by the barrel, barrel extra or returned, and twenty-five cents a gallon retail. Gooseberries all went quick at ten cents per quart; currants, blackberries, raspberries and strawberries, I think, averaged the same. Cherries on the trees remaining bore heavily and sold well, though I think some trouble to get them picked away from the birds. Russian mulberries are coming in finely to draw the birds from choicer fruit. However, some Russian mulberries are proving excellent for eating and pies. The country badly needs restocking with the good old hardy Late Richmond or common red cherry, grown everywhere from suckers; also Early Richmond does well and sometimes gets on its own root and then grows well from suckers.

HORTICULTURAL EXHIBITIONS, MEETINGS AND SOCIETIES.

We have none in this county save the county fair, horticultural, science, and art societies jointly, seem to me most bitterly needed here and in nearly all localities throughout the country. Why, then, don't we have them? Why is our education and religion so un- or anti-horticultural? Plainly, because horticulture and public, popular dissipation don't and will not agree. The dissipation and the toleration and license thereof in all our organizations exclude horticulture, science and art. *Query:* Do such

dissipation, licensing organizations pay farmers, tree and fruit growers, to support?

FRUIT GROWERS, NURSERYMEN, SEEDSMEN AND GARDENERS.

Joseph Wright, gardener, florist; Alexander Miller, gardener; Mr. Converse, fruit grower and gardener; Mr. Sawyer, fruit grower and gardener; Mr. Hollenbeck, fruit grower and gardener; F. K. Phœnix & Son nurserymen.

DISEASES, INSECTS, ETC.

Fireblight in 1889 confined in this section principally to previously blighted old trees; none in nursery. Insects about as usual.

METHODS OF CULTURE.

I believe in stem working choice apple on Siberian stocks. As a rule in our limited three or four year's trial of this, all apples take on all Siberian stocks whether seedling root or grafted. If the buds or grafts are planted on side limbs, say within an inch of main stem, the growth of stem soon covers and hides the joint perfectly so there can be no unsightly beetle or overgrowth of graft. The Shield's crab I have used most as a stock, and so far, in every case, with perhaps forty sorts put on it, the stock has kept up with the top. The original tree of Shields crab, now forty-five years old, stem eighteen inches in diameter at a foot above ground, is yet in perfect health and vigor. The fruit keeps a month or so later than Transcendent; is far superior in quality, in fact, fine for dessert, but is not as large as Transcendent. Shields does not blight, and makes a very handsome upright nursery tree.

REPORT OF A. D. BARNES, WAUPACA COUNTY.

Late frosts, but no damage until June 1st, owing to cool and cloudy mornings succeeding the frosty nights. Ground froze on morning of June 1st, and many varieties of strawberries ruined on low land. Varieties of strawberries that had an abundance of foliage and were partly covered with mulch, carried a small crop. Apple blossoms not much injured as they were higher from the ground.

No bad storms, but very dry through August and September. Plenty of moisture from November 1st to December 16th, date of this report. Fruit trees ripened the growth which makes the prospect good for next season's crop.

VARIETIES OF SMALL FRUIT.

Strawberries: Wilson, Crescent, Sharpless, Captain Jack, Manchester, Jessie, Bubach, Belmont, Ontario and Warfield.

Red Raspberries: Cuthbert, Turner, Marlboro, Shaffer's Colossal, Hansell and Philadelphias.

Black raspberries: Souhegan, Ohio and Gregg.

Currants: Red Dutch, White Grape, Cherry and Victoria.

Gooseberries: Downing's Industry, and Houghton's Seedling.

Grapes: Concord, Worden, Moore's Early, Lady, Iona. Agawam very prolific, but too late for this locality. Some varietes of seedlings, very early and good quality.

Apples: Duchess, Whitney's Hybrid, Haas and Wolf River. We have 100 varieties of seedlings and many of them are very promising. One variety called the Lind, a single specimen of which measured 15½ inches in circumference, and weighed 22 ounces. The Northwestern Greening has made best nursery and orchard growth, but not many fruited yet.

SOILS, SITES, ETC.

We have all varieties and quality of soil, from black loam to rock bluffs, and most excellent sites for orchards. High hills with suitable northern slopes for apple orchards, while southern exposures are well fitted by nature for grape culture. Wild fruit is found in abundance in this county, and apple orchards are on the increase.

MARKETS.

First and best is home market, small towns in northern Wisconsin, St. Paul and Minneapolis, with Chicago and Milwaukee for late berries.

PRICES.

Strawberries average 10 cents per quart, raspberries 8 cents, blackberries 10 cents, currants 75 cents per pail, early apples 50 cents to 75 cents per bushel. Winter apples $1 per bushel.

HORTICULTURAL EXHIBITS, ETC.

Strawberry picnic at A. D. Barnes' grove, June 22; raspberry picnic at John Evans' grove August 6, when one single cane of the Marlboro was exhibited bearing one hundred ripe berries. Apple picnic at the grove of Robert Faukes, September 3, and a grape picnic at E. A. Demorest's grove, October 1.

At the county fair held in Weyauwega, we had the best exhibit of native apples I ever saw.

In this county we have three horticultural societies: Waupaca County Society at Weyauwega, Fremont Society of Fremont, and Waupaca Horticultural Society and Improvement Association at Waupaca.

FRUIT GROWERS AND NURSERYMEN.

Wm. Springer, Fremont, and A. D. Barnes, Waupaca, nurserymen. There are also quite a large number of fruit growers in this district. The fruit growers at Ripon, shipped in four days, 9,594 crates of blackberries. Charles Hamilton of that place received $1,000.96. as receipts from five days' shipments.

DISEASES, INSECTS, ETC.

Sun scald is the worst disease we have in this locality, not much blight, except in very warm sites and localities. But little apple scab, as our orchards are generally on high and dry. Borers are somewhat troublesome, unless trees are shaded on southwest side. We are also troubled with a beetle which nips off the new shoots from the young trees when planted near old ones. As yet we have no vegetable gardeners who make it a specialty. Potato culture is very extensively carried on in this county, and much of the product is shipped direct to New York and Boston. Prices December 1st, 30 to 37 cents per bushel.

FLOWER CULTURE AND ORNAMENTAL PLANTING.

Some of our private grounds are tastefully arranged and planted; the most notable in this vicinity is that of Charles Churchill, the president of Waupaca Horticultural Society. Cattle do not run at large, consequently more attention is being paid to planting trees along the line of highways.

METHODS OF CULTURE, ETC.

We find that mulching for protection and also to retain moisture, as well as to keep the strawberries clean, is the better practice. In case of threatened frost the mulch can be used to cover the vines and by this method save a crop.

Smudging is practiced with beneficial results as a preventive of frost. The growth of fruit trees should be forced in early season and retarded as much as possible later, to allow the wood to mature before winter.

Jessie and Bubach among new sorts of strawberries are especially valuable, as being vigorous and with large, healthy foliage protecting and shading the ground.

A special new sweet apple, a seedling from the Fameuse, promises to be valuable.

REPORT OF A. L. HATCH, RICHLAND COUNTY.

TEMPERATURE, STORMS, ETC.

May — Mean temperature 45.56° +, 8 A. M. Rainfall for month 2.37 in. Cold, windy and frosty *without dew fall* during time of apple bloom. A little rain and sleet on 31st. Apples bloomed on 6th.

June — Mean temperature 63.30° +, 8 A. M. Rainfall 3.11 in.

July — Mean temperature 71.16° +, 8 A. M. Rain, total, 2.56 in.

August — Mean temperature 67.51° +, 8 A. M. Rain, total, .49 in.

Greatest cold of preceding winter about 20° —. Weather notes from observations for U. S. S. S. by H. M. Ludwig, M. D., Richland Center, Wis. The season has been free from violent storms and is remarkable for extreme dryness of last part of season.

VARIETIES FRUITED.

Apples: Tetofsky, Oldenburg, Alexander, Fall Orange, Lubsk Queen, Golden Russet, Fameuse, Orange Winter, Talman Sweet, McMahan's, Haas, Russian Winter Pear, Hibernal, Switzer, Vasilis Largest, Sweet Pear, Saccharine, White Pigeon, Wealthy, Pewaukee, Longfield, New Hampshire, Plumb's Cider, Gilpin, Walbridge, St. Lawrence, Winter Streaked, Ben Davis, Canada Peach, Red Duck.

Crabs and Hybrids: Transcendent, Hislop, Spitzenberg, Blushing Maid, Sweet Russet, Scotchman's Choice, Marengo, Sylvan Sweet, Brier's Sweet, Gen. Grant, Whitney.

Cherries: Kentish and E. Richmond.

Blackberries: Snyder, Stone's Hardy, Ancient Briton, Hatch.

Plums: Desoto, Weaver, Forest Garden.

Raspberries: Taylor, Gregg, Ohio, Brandywine, Thwack, Hansell, Cuthbert, Turner.

Strawberries: Champion, Crescent, Cumberland, Wilson, Jessie, Piper, etc.

Currants: Wh. Grape, Cherry, Fay.

Gooseberries: Houghton.

Grapes: Concord, Delaware, Janesville, Roger's Hybrids, Iona, Niagara, etc.

SOILS, SITES AND RESOURCES.

District embraces about 8,000 square miles of "driftless area" in Wisconsin valleys by erosion about 300 or 400 feet deep, not adapted to apple culture usually. Ridge land farms usually of limestone clay are good apple orchard sites. Grape vineyards succeed finely on high hills, hill sides and ridges free from late spring and early fall frost. Sandy soils, especially if warm and rich, make excellent sites for strawberries, etc.

Limestone soil is mostly lower magnesian with some Trenton in Grant and Iowa counties on very highest land. Sand is almost entirely potsdam. Timber is mixed, hard and soft wood, but almost without conifers, except along some streams and bordering precipitous bluffs.

FRUIT CROPS, ACREAGE, MARKETS, PRICES, ETC.

Apple crop very large, and home market from August 10th to October 1st, over supplied and prices lowest ever known. Some shipments by railroad, mostly northwest and north. Some revival of interest in apple planting on ridges.

Strawberry, raspberry, and blackberry crop cut short by drouth, and prices fair to good, except a part of time during first of season of each kind, when in some places there was a surplus.

Grapes — a small crop, good quality and good prices.

FRUIT GROWERS, NURSERYMEN, SEEDSMEN AND GARDENERS.

Small Fruits — M. A. Thayer, Sparta, Wis.; L. N. Fisher, Sparta, Wis.; A. C. Parfrey, Richland Center, eighty sorts grapes and green house. H. Toms, Richland Center, grapes. C. A. Hatch, Ithaca, apples and small fruits on farm. A. L. Hatch, Ithaca, apples, grapes and small fruits on farm. E. France & Son., Platteville, berries. Geo. Robbins, Platteville, berries. E. Pike, Boscobel, berries. H. Gillmore, Darlington, plums and berries. A. J. Phillips, W. Salem, apples. E. Wilcox, La Crosse, apples

DISEASES, INSECTS, ETC.

Fungus Diseases — Apple scab, grape rot, blackberry rust, mold on cherry trees, bladder plums, strawberry rust.

Insects — Curculios, apple gougers, leaf rollers, codling moths, aphis, tent caterpillars, round headed apple tree borers, flat headed borers, gall lice on grapes, gall mites on plums.

FLOWER CULTURE.

Private green house established at Richland Center, by A. C. Parfrey.

REPORT OF WILLIAM TOOLE, SAUK COUNTY.

TEMPERATURES, STORMS, ETC.

The winter of 1888–9 was favorable to both trees and plants; strawberries and raspberries coming through in good shape but late frosts in the spring injured many kinds of strawberries and apples. The berry crop from this cause was light.

VARIETIES FRUITED.

Of apples Fameuse and the Russets made a good showing. The local markets were also well supplied with Duchess. Twenty-five cents in trade through most of the fall was the best price to be had for apples of fine quality, showing that there is less needed to be learned here about growing apples than we should know about gathering and marketing.

Strawberries suffered from frost while the yield of raspberries and black berries was curtailed by drouth. Last of May we had the ground frozen to a strong crust and a snow of several inches.

SOILS, SITES AND RESOURCES.

To mention soil or sites would be but a repetition of what has been said in former reports.

Sauk county has suitable sites and fall and early winter varieties adapted that could, if made use of, supply this and some other states with apples during this season.

FRUIT LIST.

Apples which can be grown in Sauk county in favored sites would include the Old Iron Clad list, with Wealthy, Winter Orange, McMahan's White and all of the best new Russians.

Raspberries mostly grown are Gregg in large quantities, Tyler, Souhegan, of blacks, Cuthbert and other reds in limited quantity.

Crescent is more planted than any other strawberry, and in lesser quantities Cumberland, Wilson, Glendale, Sharpless, Manchester, Jessie, while Bubach, Warfield, Burt, Pearl, Monmouth and some other new varieties have only been fruited in a small way.

Ancient Briton blackberry is more planted than either Stone's Hardy or Snyder.

Concord, Worden and Moore's Early take the lead among grapes, while Brighton will be more largely planted than heretofore. To mention all of the varieties fruited in this vicinity would make the list too long.

FRUIT CROPS, ACREAGE, MARKETS, PRICES, ETC.

Have not gathered any statistics of either yield or acreage of fruits in this county. The home prices have not been satisfactory and most of the growers have not looked for an outside market.

HORTICULTURAL EXHIBITIONS, MEETINGS AND SOCIETIES.

The Sauk County Horticultural Society has a membership of about forty, which number will be probably increased during the present year. There was but one exhibition during the year, which was held in connection with the joint convention in February, 1889, of the county horticultural and agricultural societies. Some assistance of speakers was furnished by the state society, and the occasion was profitable and enjoyable. The showing of plants and flowers was fair, of fruit excellent, and the display of paintings fine indeed. The Freedom Horticultural Society keeps up organization and meetings.

FRUIT GROWERS, NURSERYMEN, SEEDSMEN AND GARDENERS.

Of small fruit growers, only the leading ones can be mentioned — Mr. Lewis, M. T. Newell, Delton; Mrs. P. Chapman, Fairfield; Mrs. Franklin Johnson, A. Clark Tuttle, E. K. Tuttle, M. E. Spring, Baraboo.

Florists — F. Wichern, A. Elliott, R. Griggs, Wm. Toole.

Seedsmen — Wm. Toole.

Orchardists — A. C. Tuttle, A. G. Tuttle, Dr. Kezerta, Franklin Johnson, J. Haines, C. Hirschinger, A. D. Palmer.

Nurserymen — A. G. Tuttle, A. Clark Tuttle, H. H. Howlett, C. Hirschinger, all of Baraboo.

Grapes and Vines — Wm. Fox, Baraboo.

DISEASES, INSECTS, ETC.

In season and out, we have all of the common troubles with insect and fungi, the common practice being to let such foes help themselves. Spraying is not practiced, neither do we snare the festive moths and beetles with lights and bath tubs. The scab has come and gone, but the codling moth is with us every year, and cut worms have become naturalized.

VEGETABLE GARDENING.

We have market gardeners in abundance, but they are not prepared for the vicissitudes of the seasons and could not have made a good show in quality at the last county fair if they had pooled their products.

FLOWER CULTURE, TREE AND ORNAMENTAL PLANTING.

More attention is given to house than out-door cultivation of flowers, but each year we see more evidences of neatness and tidying up about farm homes, more attempts at lawn making and some evergreen planting. In tree planting, shade more than ornamentation, is usually considered.

REPORTS FROM LOCAL SOCIETIES.

REPORT OF GRAND CHUTE HORTICULTURAL SOCIETY.

The four meetings of this society held the present year, have been without exception largely attended and very interesting.

The summer and autumn meetings were most enjoyable, because we have made them fruit festivals.

The established day of our July meeting fell on the fourth of that month, and the society celebrated the national holiday in connection with the annual strawberry festival at the home of the secretary. Although near the city where the usual festivities of that day were in progress, our meeting was larger than usual, one hundred persons partook of a picnic dinner from tables spread under the trees on the lawn.

B. S. Hoxie, secretary of the Wisconsin State Horticultural Society, and J. M. Smith, president of the same, met with us, and their presence added much to the interest of the occasion.

Our members grow several of the best varieties of strawberries, viz.: Wilson, Crescent, Manchester, Sharpless, Warfield, Bubach and several others, not as highly recommended.

The October meeting is usually our grape festival, but the severe frost on the 29th of May so nearly destroyed the grapes that but few were expected, however, there were fourteen plates of grapes contributed by different members. The Delaware, Concord and Worden were the ripest. Niagara, Pocklington and Agawam, not mature.

Twenty-one plates of apples were exhibited, including four varieties of crabs, and three varieties of excellent seedling apples.

There were six floral decorations, gathered from gardens that had escaped the frost.

The annual meeting of this society was held on the 2d of January. This meeting is always one of business, and a secret session rather than instruction on horticultural topics. The attendance was unusually large. The election of officers resulted in the choice of L. B. Johnson, president, A. H. Burch, treasurer, Mrs. D. Huntley, secretary.

MRS. D. HUNTLEY,
Secretary.

REPORT OF THE AMHERST HORTICULTURAL AND AGRICULTURAL CLUB FOR THE YEAR 1889.

This society now numbers about thirty members, and has held meetings monthly throughout the year.

During the winter months, the time at the meetings is usually taken up in reading papers prepared by the members, and in discussions. During the summer we add to the above program by meeting at members' houses and having a picnic dinner and a general good time, usually in the adjoining grove.

The old officers hold over for the ensuing year: President — J. H. Felch, Amherst Junction; vice president — G. W. Thompson, Amherst; recording secretary — A. J. Smith, Amherst; corresponding secretary — Edwin Grover, Amherst; treasurer — Mrs. M. E. Smith, Amherst.

EDWIN GROVER,
Corresponding Secretary.

AMHERST, WIS., Dec. 23, 1889.

ANNUAL REPORT OF THE BROWN COUNTY H. & A. SOCIETY.

OFFICE OF THE SECRETARY, January 4, 1890.

The secretary respectfully submits the following report of the transactions of the society for the year ending December 31st, 1889:

I. — MEETINGS.

During the year the society has held eleven regular monthly business sessions, at times and places as follows:

January 4th, annual meeting at the rooms of the business men's association in the city of Green Bay.

March 2d, monthly meeting at the business men's rooms, Green Bay.

April 27th, at the residence of William Finnegan, town of Howard.

May 25th, at the residence of W. Harold Woodruff, town of Bellevue.

June 28th, annual strawberry festival on the premises of President John M. Smith.

July 27th, at the residence of Wm. B. Enderby, town of Preble.

August 24th, on the premises of Isaac Dickey, town of De Pere.

September 28th, in the grove on the premises of J. D. McAllister, town of Pittsfield, near Mill's Centre.

October 28th, at the residence of Wm. Finnegan, town of Howard.

November 28th, at the residence of Alexandor Barclay, town of DePere.

II.— TOPICS DISCUSSED AND BUSINESS TRANSACTED.

At the January meeting — Annual reports rendered, election of officers, appointment of rallying committee for farmers' institute.

March meeting — Formal papers on small fruits for farmers and horticulture in common schools.

April meeting — What crops shall we endeavor to raise this year, and how shall we plant our seeds; consideration of the proposition of the Fair and Park association for a joint management of the next Brown county fair.

May meeting — Adoption of resolutions relative to the county fair; articles, original and selected, read by the lady members of the society.

June meeting — Movable fences; what horticulture can do for the farmer; the wonders of plant life; the lessons of the festival. At this meeting there were present from abroad Mr. and Mrs. D. Huntley, of Appleton; Professor Goff, of the State University; Mrs. Vie H. Campbell, of Evansville, treasurer of the Wisconsin State Horticultural Society; and Mr. and Mrs. Hiram Smith, of Sheboygan, all of whom, except the lady last named, participated in the discussions of the meeting.

July meeting — Best methods of harvesting the small grains.

August meeting — Original papers; lessons from the green grass; California and Wisconsin; selected readings by lady members.

September meeting — Noxious weeds and best methods of exterminating them.

October meeting — Preparation for winter.

November meeting — Mistakes of the past season; selected readings by lady members.

Besides the regular monthly meetings, there were held in April and May, three joint and executive meetings, at which the ensuing County Fair was the subject of consideration and action. Throughout the year the discussions and other educational exercises have been conducted with animation and intelligence, and every meeting has proved to be an occasion of much interest and enjoyment.

III.— MEMBERSHIP.

Seven members have been enrolled on our list of active members during the past year.

Pursuant to the resolution adopted at the annual meeting of 1887 limiting the time during which a member delinquent in annual dues may be counted as still holding membership to the term of two years, it became necessary to drop the names of a large number of otherwise excellent and

desirable members, thus reducing our membership at that date to 66 male members. The additions this year will make the present number 73 gentlemen now in good standing with the wives of such as have them.

It is to be regretted, perhaps even wondered at, that through default of paying the small sum of fifty cents annually, any farmer in the county should let go his connections with the society, when, besides all other benefits of continued membership, each year would entitle him to the publications of the State Assocations for that year, worth ten times the amount of his annual dues.

IV.— BOOKS, SEEDS, ETC.

There have been received at the office of the secretary an invoice of 50 copies of the transactions of the State Horticultural and Agricultural Societies. The Dairymen's Association and the Department of Agriculture of the State University for the year 1890, all bound in one volume, making a book of over twelve hundred pages; about 50 copies each of transactions of the State Horticultural Society for the same year; 50 of the Wisconsin Dairymen's Association for 1888, and 50 of the Wisconsin Farmers' Institutes, Bulletin No. 2, for 1888. Many of these books have already been delivered to members of the society and other persons calling for them, and many are still held for distributing among those entitled to them by provisions of article 4th of the by-laws.

Besides the books as just mentioned, President Smith received, in the early spring, from the agricultural department at Washington, a generous invoice of field and garden seeds which were promptly distributed among the members of the society.

The benefits described in this article, valuable as they may be, are yet not the greatest enjoyed by members who keep themselves in good standing and customarily attend the business sessions of the society.

VII.— CONCLUSION.

A few words only. The past year has been one of the most successful, pleasant and profitable in the history of the society.

The attendance upon its monthly meetings has invariably been good; the discussions carried on with vigor and enthusiasm; other educational exercises participated in with interest and pleasure, and the festal and social features a source of genuine enjoyment to both members and visitors.

It is to be earnestly desired that many more of the farming population of the county will be persuaded to avail themselves, without much longer delay, of the advantages for obtaining extended and scientific information on matters connected with their life calling, and for securing personal pleasure and improvement afforded by the Brown County Horticultural and Agricultural Society.

Respectfully submitted,

WERDEN REYNOLDS,

Secretary.

ANNUAL REPORT OF RIPON HORTICULTURAL SOCIETY OF RIPON, WISCONSIN.

The above named society held its annual meeting Wednesday evening, January 22, 1890, and elected the following officers: President, L. G. Kellogg; vice president, Mrs. L. Hood; secretary, A. S. Crocker; treasurer, E. Woodruff.

Our fruit growers are still determined, although the past season has been one of discouragements. The yield of small fruit at this point was good but prices were very low, especially for blackberries. Few if any of the latter will be planted the coming season.

A number of our growers are preparing to increase their acreage of raspberries, gooseberries, currants, etc.

The autumn was favorable for all our fruits, being mild and wet. Our first snow fell January 12, covering the ground to a depth of twelve inches. Our coldest weather thus far is 22° below zero, the night of January 21.

Our people are again beginning to plant apple trees, to a limited extent, purchasing chiefly from Rochester, New York.

Very respectfully submitted,

A. S. CROCKER,
Secretary.

RIPON, Wis., January 23, 1890.

REPORT OF THE SPARTA HORTICULTURAL SOCIETY OF MONROE COUNTY, WIS.

Our society was organized June 20, 1889, during the meeting of the State Horticultural Society, at Sparta, with forty members.

We now have sixty active working members.

In the spring of 1887, the first small fruit was set in this vicinity by L. S. Fisher and George E. Hanchett.

In the following spring, 1888, M. A. Thayer, president of our society, followed, and started his small-fruit farm, setting out some twenty acres of small fruit, and expending several thousand dollars.

We now have about fifty acres in this vicinity.

The leading fruit grown are the blackberry, raspberry and strawberry.

Our annual meeting was held January 30, 1890. It was an all-day meeting, with a banquet at 1 o'clock.

The attendance was large and great interest manifested.

Several noted horticulturists from abroad were present, among them C. H. Hamilton, of Ripon, and J. S. Harris, of Minnesota.

The following officers were elected for the ensuing year: M. A. Thayer, president; Geo. Hanchett, vice president; L. S. Fisher, secretary; C. E. Hanchett, treasurer.

Executive Committee: Z. K. Jewett, J. D. Sarles, Mrs. Mary Harris,

Mrs. James Davidson, Mrs. T. B. Tyler, Mrs. J. T. Sargent, Mrs. E. Nutting.

Delegates to the State Society: M. A. Thayer, Z. K. Jewett, R. S. Kingman.

L. S. FISHER,
Sscretary.

Dated SPARTA, Feb. 3, 1890.

REPORT FROM WAUPACA HORTICULTURAL SOCIETY AND IMPROVEMENT ASSOCIATION.

At our regular meeting held March —, 1890, the following officers were elected for the ensuing year: John Evans, president; W. H. Holmes, vice president; Mrs. A. D. Barnes, treasurer; Chas. Churchill, secretary.

This society has an increasing membership and our monthly meetings are well attended. Horticulturally, our prospects are encouraging.

CHAS. CHURCHILL,
Secretary.

WAUPACA, WIS., March 12, 1890.

REPORT OF EAST FREEDOM HORTICULTURAL SOCIETY.

Annual meeting held March 6, 1890. Treasurer reported the finances of the society to be in good condition. Officers elected were: Lenard Rosco, president; Chas. Hirschinger, secretary; Geo. Armbraster, Jr., treasurer.

Executive Committee: Geo. Faller, Herman Vall and Chas. Vichen.

Adjourned to meet March 13 to discuss the following question:

Resolved, That the raising of apples in Sauk county is more profitable than that of any other farm crop.

CHAS. HIRSCHINGER,
Secretary.

FREMONT HORTICULTURAL SOCIETY.

This society was organized in 1880. We have about twenty members; meet twice a year. Our meetings and dsscussions are pleasant and profitable.

Our present officers are: President, C. F. Eaton; vice president, Henry Spindler; secretary, J. Wakefield; treasurer, Jacob Stiger.

Executive Committee: W. A. Springer, R. Callendar, H. Spindler.

J. WAKEFIELD,
Secretary.

WAUPACA COUNTY HORTICULTURAL SOCIETY.

Our society is still alive, our regular meetings are kept up, and quite an interest is still manifested. We have over forty members. At our meetings our shows of fruit will compare favorably with others. Several of our "Waupaca County Seedlings" are doing all they promised, and in small fruits we are not far behind.

Some of our people are raising sweet crab apples for feeding stock, and are doing well. J. Wakefield has over 70 large trees, and finds them just the thing for fattening pork. Brier sweet is the kind he prefers.

Our present officers are: President, George W. Taggart, Weyauwega; vice president, William Wilson, Weyauwega; secretary, J. Wakefield, Fremont; treasurer, James Jenney, Weyauwega.

Executive Committee: W. A. Springer, E. W. Brown, A. W. Balsley.

Delegates: W. A. Springer, Hollis Gibson.

J. WAKEFIELD,
Secretary.

REPORT OF JANESVILLE HORTICULTURAL SOCIETY.

The membership of the society is the same as at last report, viz., thirty. No special work has been done this year.

The officers and trustees are the same as 1889. Messrs. Geo. J. Kellogg, and E. B. Heimstreet were elected as delegates to represent us at the annual meeting of the state sooiety held at Madison, February, 1890.

E. B. HEIMSTREET,
Secretary.

GEO. J. KELLOGG,
President.

HORTICULTURAL PRODUCTS OF WISCONSIN FOR THE YEAR 1888.

	Bushels.
Root crops	1,134,227
Cranberries	189,145
Apples	1,103,699
Strawberries	56,975
Raspberries	12,199
Blackberries	8,195
Currants	3,923
Grapes	35,175

PRINCIPAL FARM PRODUCTS GROWING IN 1889.

COUNTIES.	No. of acres.	APPLE ORCHARDS.		NUMBER OF ACRES.				
	Cranberries.	No. of acres.	No. of bearing trees.	Strawberries.	Raspberries.	Blackberries.	Currants.	Grapes.
Adams	243	.....	1446	3	1	.....	.....	.....
Ashland	.....	.....	.....	.....	.....	.....	.....	.....
Barron	1/8	.....	427	3 9/16	1 9/16	.....	2	5/16
Bayfield	.....	.....	162	1 1/8	.....	.....	.....	.....
Brown	.....	.....	10,029	28	4	2	2	3
Buffalo	.....	43 1/2	1,325	24	3 1/2	1/2	.....	12 1/8
Burnett	.....	.....	49	9/16	1/8	.....	.....	.....
Calumet	.....	198	15,541	.....	2	.....	.....	.....
Chippewa	1/2	12 1/4	371	6 3/4	1/8	.....	.....	.....
Clark	15	288	1,311	1	.....	.....	.....	.....
Columbia	39	69	19,767	29 16/50	10 4/50	2 30/50	1 5/50	8 43/100
Crawford	.....	.....	14,104	12	11 1/2	1	12	9
Dane	5 1/2	.....	47,189	32 7/8	12	5	2 3/8	16 1/2
Dodge	6	1,783 1/2	24,935	15 3/8	6 3/16	4 9/16	10 9/16	1 1/16
Door	20	164 3/4	10,543	.....	.....	.....	.....	.....
Douglas	.....	.....	.....	.....	.....	.....	.....	.....
Dunn	12	.....	.....	11 1/4	3 1/2	102	1/2	.....
Eau Claire	.....	.....	1,844	12 3/4	1	.....	1/2	1/4
Florence	.....	3	30	1/2	.....	.....	.....	.....
Fond du Lac	.....	664	31,093	58	51 3/8	108 7/8	4 3/5	9 1/2
Forest	.....	.....	.....	.....	.....	.....	.....	.....
Grant	.....	.....	41,970	3/4	.....	.....	.....	.....
Green	.....	842	25,302	20 1/8	32 3/8	18 3/4	5 7/8	36
Green Lake	12 1/4	.....	5,965	10	2	1/2	.....	34
Iowa	.....	462	15,887	9 1/2	1 1/8	5 7/8	1 1/4	1
Jackson	765	22	2,739	.....	.....	.....	.....	4 1/4
Jefferson	4	1,375	43,571	14 1/4	8	7 1/8	1	12
Juneau	938 3/4	.....	2,979	39	46	55	.....	56
Kenosha	.....	.....	35,738	11 1/4	9 3/8	1 7/8	.....	11
Kewaunee	.....	223	13,284	99 3/8	10 3/8	1	3/8	109 1/8
La Crosse	.....	.....	4,220	.....	.....	.....	.....	.....
La Fayette	.....	.....	17,434	61 1/2	1 5/8	1/2	5/8	28 3/4
Langlade	.....	.....	377	9	6	5 1/2	7	17 1/2
Lincoln	.....	.....	375	6	1 1/8	5/8	.....	.....
Manitowoc	.....	401	29,675	2 11/16	4 1/8	7/16	.....	3/8
Marathon	40	.....	2,417	5 5/8	1/4	.....	1/4	.....
Marinette	203	.....	3,877	3 3/4	.....	.....	.....	.....
Marquette	7	.....	2,348	9	.....	.....	.....	.....
Milwaukee	.....	2,182	59,482	1 3/4	.....	.....	.....	.....
Monroe	58 1/2	.....	9,072	37 1/2	6 1/2	.....	2 3/4	7
Oconto	.....	.....	8,011	29 1/4	17 1/16	12	1 1/16	3 1/16
Oneida	.....	.....	.....	6	.....	.....	2	1
Outagamie	.....	229	12,016	.....	.....	.....	.....	.....
Ozaukee	.....	.....	32,629	12 3/8	11 5/8	8 3/4	1	1 5/8
Pepin	.....	.....	1,358	.....	2	.....	.....	.....
Pierce	.....	.....	6,338	1 1/2	3/4	1/4	1 3/4	1 1/16
Polk	14 1/4	3 5/8	677	45	4	1	5	.....
Portage	134	.....	2,212	.....	.....	.....	.....	.....
Price	.....	.....	.....	23	6	2 1/2	1/2	1/4
Racine	.....	1,351 1/2	46,437	.....	.....	.....	.....	.....
Richland	.....	.....	14,161	65 3/4	3 1/4	9	2 1/2	3 1/2
				7 5/16	4 3/16	3	2 1/4	4 1/2

PRINCIPAL FARM PRODUCTS GROWING IN 1889.—Continued.

COUNTIES.	No. of acres.	APPLE ORCHARDS.		NUMBER OF ACRES.				
	Cranberries.	No. of acres.	No. of bearing trees.	Strawberries.	Raspberries.	Blackberries.	Currants.	Grapes.
Rock	3	2,008½	57,128	56	26⅝	11⅛	6 1/16	15 11/16
St. Croix	¼	43	2,401	46¼	.....	.....	.....	.....
Sauk	.....	432	17,468	39	75	9	19	30
Sawyer	.....	.....	.....	.....	.....	.....	.....	.....
Shawano	.....	18	7,204	.....	.....	.....	.....	.....
Sheboygan	.....	.....	97,092	28½	11⅛	8	2	2¾
Taylor	.....	.....	.....	1½	2⅝	⅛	1	⅛
Trempealeau	1¼	.....	1,166	8¼	6¾	4⅛	¼	4½
Vernon	.....	316	13,652	9 1/16	1 5/16	2⅝	.....	⅛
Walworth	.....	2,531	60,764	25¼	9¾	5½	2 1/16	9⅝
Washburn	.....	.....	.....	.....	.....	.....	.....	.....
Washington	.....	.....	45,714	38	.....	.....	1/16	3⅛
Waukesha	37	.....	65,509	33½	17½	4½	2 9/16	411
Waupaca	3	238½	5,432	7½	½	.....	.....	.....
Waushara	147	.....	3,032	7	4	.....	.....	1
Winnebago	45	14	11,642	61	28	38	5	15
Wood	2,058	.....	1,442	10	2¾	80	1½	⅛
Total	4,822	15,762	1,053,362	1,032	463	421	108½	878¾

HORTICULTURAL ROOM,
FRIDAY MORNING, February 7th, 1890.

President Smith in the chair.

Report of committee on Resolutions being in order, were presented by the chairman of the committee, and were adopted.

REPORT OF COMMITTEE ON RESOLUTIONS.

Mr. President — Your committee on Resolutions would submit the following:

Resolved, That the Wisconsin Horticultural Society extends fraternal greeting to the American Horticultural Society at its meeting in Texas next week, and that we send President J. M. Smith, of our society, as a delegate to bear that society these expressions of our good will.

Resolved, That this society make arrangements to hold as many horticultural institutes as local societies may require, and the interests of the state and the cause demand during the present year.

Resolved, That the thanks of this society are due and are hereby tendered to our secretary, B. S. Hoxie, for binding and placing in the society's rooms files of newspapers and other valuable publications for reference.

Resolved, That the thanks of the Wisconsin Horticultural society are hereby tendered to Prof. B. T. Galloway, of the United States Department of Agriculture, for conducting experiments in Wisconsin, in 1889, upon apple scab, and we congratulate him upon the success of the experiments. Also that we invite his further co-operation with Prof. E. S. Goff upon this and allied experiments in controlling fungus diseases and insect pests.

Resolved, That we express our confidence in and appreciation of the efforts of Prof. H. E. Van Deman, pomologist, and that a copy of these resolutions be forwarded to Gen. Rusk, secretary of agriculture, and to Profs. Galloway and Van Deman, expressing the hope that some of the seed distribution of the department may be diverted to plants, scions, etc., for the benefit of fruit culture.

Resolved, That the thanks of the society are hereby due to Hon. John B. Peasley of Ohio, and Mrs. A. C. Neville, of Green Bay, for valuable papers read at this convention. To O. F. Brand ,delegate from Minnesota Horticultural Society, for his assistance in taking part in our discussions, and that the names of these gentlemen and lady be placed on our list of honorary members for one year.

Resolved, That we hereby tender our thanks to the railroads who have given us one half rates to this convention.

Resolved, That the large Greening apple entered by A. J. Phillips, which has a record of twenty-one years of successive bearing, be entered on our list for trial, and that it be called "Avista," by his request.

Respectfully submitted.

GEO. J. KELLOGG,
ISAAC GALE,
A. L. HATCH,

Mr. Kellogg offered the following as a substitute for a former motion, which was adopted:

Resolved, That our president be empowered to send delegates to kindred societies of Illinois, Iowa, Minnesota, and S. Dakota, and if in his judgment to other states; expenses of such delegates to be paid by the State Society after a satisfactory report has been made.

Mr. B. S. Hoxie spoke of the attempt being made in the legislature last winter to reconvert a portion of the land embraced in what is known as "State Park," located in Oneida County, for the purpose of placing the same on the market as timber land, and called the attention of the Society to the importance of preserving some of our forest area undefiled for future generations, and suggested that M. A. Thayer be appointed a committee to draw up a suitable memorial to present to our next legislature, embodying the sense of this Society regarding these lands.

Moved and carried that a standing committee of three be appointed as a committee on legislation.

M. A. Thayer, of Sparta; B. S. Hoxie, of Evansville; and A. L. Hatch, of Ithaca, were appointed such committee. No further business appearing the president declared the meeting adjourned *sine die*.

B. S. HOXIE,
Secretary.

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