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## **Annual report of the Wisconsin State Horticultural Society for the years 1894-95. Semi-annual meeting at Madison, June 21 and 22, 1894. Annual meeting at Madison, February 5, 6, 7 and 8, 1895. Vol. XX...**

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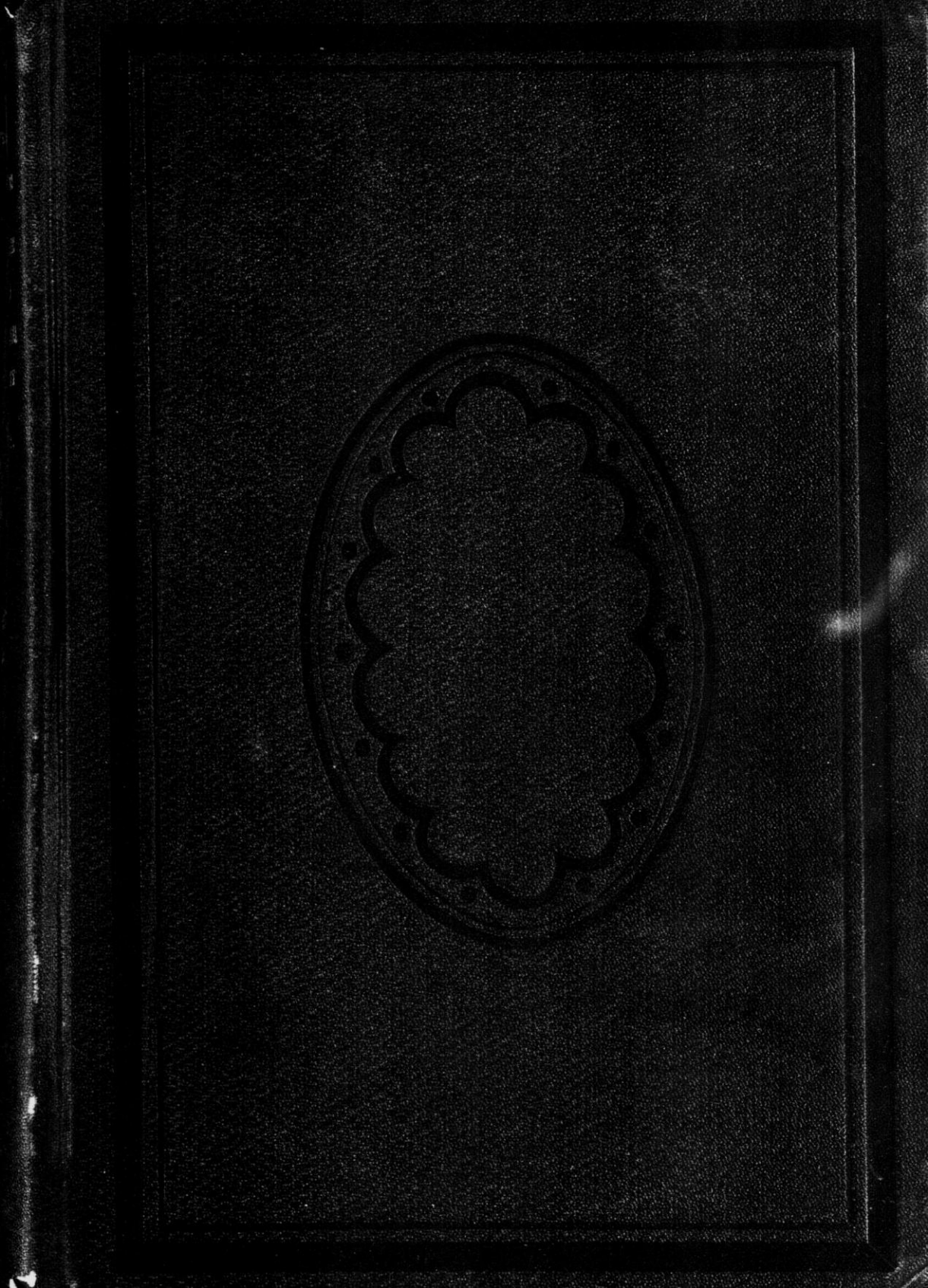
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GEORGE P. PEFFER.

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ANNUAL REPORT

OF THE

# Wisconsin State Horticultural Society

FOR THE YEARS 1894-95.

Semi- Annual Meeting at Madison, June 21 and 22, 1894. Annual Meeting at Madison, February 5, 6, 7 and 8, 1895.

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**VOLUME XXV.**

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A. J. PHILIPS, Secretary,

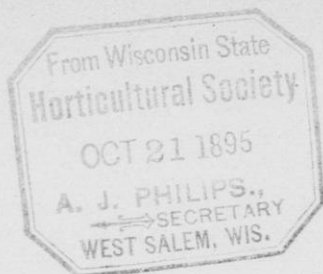
WEST SALEM, WIS.



MADISON, WISCONSIN:  
DEMOCRAT PRINTING COMPANY, STATE PRINTER.  
1895.



39104  
4 S '96



## LETTER OF TRANSMITTAL.

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TO HON. WM. H. UPHAM,  
*Governor of Wisconsin:*

DEAR SIR:—I have the honor of presenting you, as is required by law, the twenty-fifth annual report of the transactions of the Wisconsin State Horticultural Society, embracing the papers read and the discussions on the same at our yearly meetings, of which we held two in the city of Madison. We also have reports of local societies located in different parts of our state which show the interest in Horticulture in these several places. We also give the amount of money received from the state and the disposition we have made of the same, during the past year. We are glad to say we have so interested the children of our state, that thirty-five hundred applied for trees and plants during the year.

A. J. PHILIPS,  
*Secretary.*

WEST SALEM, June 1, 1895.





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# WISCONSIN STATE HORTICULTURAL SOCIETY.

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## OFFICERS AND EXECUTIVE COMMITTEE FOR 1895.

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A. J. PHILIPS, Secretary,	West Salem.
R. J. COE, Treasurer,	Ft. Atkinson.
J. L. HERBST, Corresponding Secretary,	Sparta.

---

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A. C. TUTTLE,	Baraboo.

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C. A. HATCH,	. . . . .	Ithaca.
A. A. PARSONS,	. . . . .	Eureka.

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A. L. HATCH,	. . . . .	Ithaca.

## BADGES.

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## ON FIELD TRIALS.

NOEL FRANCE,	. . . . .	Platteville.
A. L. HATCH,	. . . . .	Ithaca.
J. S. STICKNEY,	. . . . .	Wauwatosa.

## ON OBSERVATION.

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J. F. CASE,	. . . . .	Eau Claire.
FRED HARDEN,	. . . . .	Weyauwega.
J. L. HERBST,	. . . . .	Sparta.
D. C. CONVERSE,	. . . . .	Ft. Atkinson.
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JOHN MENN,	. . . . .	Norwalk.
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WARREN GRAY,	.	.	.	.	.	.	Darlington.
JOHN RHODES,	.	.	.	.	.	.	Kansasville.

*To the Members of above Committee:*

You have been appointed to make observations in your immediate neighborhood, and you will note changes as the season advances, time of blooming and ripening; also dates of frosts, acreage, quality, and the productiveness of different fruits. Give locations and varieties that produce best; also which are best, top worked trees or those on their own roots. What is the best stock you have seen to top work on? If insects trouble you, what are they and what is the remedy? Have you a local society? If not, do you desire one? I would like you to report as early as December 10, 1895, so that they can be read at our next annual meeting and be published in our next volume of transactions. By so doing we, as horticulturists, can interest each other.

Yours, cordially,

A. J. PHILIPS,

*Secretary.*



## MEMBERS OF THE SOCIETY.

---

### LIFE MEMBERSHIPS.

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

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John Corse, . . . . .	Racine.
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Barnes, Mrs. A. D. . . . .	Waupaca, Wis.
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Berg, Nick. . . . .	Grand Rapids, Wis.
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Benedict, Mrs. F. M. . . . .	Waupaca, Wis.
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Bingham, D. E. . . . .	Ithaca, Wis.
Bushnell, Mrs. C. E. . . . .	Appleton, Wis.
Case, J. F. . . . .	Eau Claire, Wis.
Case, Mrs. J. F. . . . .	Eau Claire, Wis.
Cash, W. H. H. . . . .	New Lisbon, Wis.
Chappell, F. H. . . . .	Oregon, Wis.
Chappell, Mrs. F. H. . . . .	Oregon, Wis.
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Coe, Mrs. R. J. . . . .	Fort Atkinson, Wis.
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Edwards, Mrs. F. C. . . . .	Fort Atkinson, Wis.
Effmeyer, C. J. H. . . . .	Baraboo, Wis.

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Hatch, A. L.	Ithaca, Wis.
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Kellogg, Mrs. L. J.	Ripon, Wis.
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Robinson, N. H.	Centralia, Wis.
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Thayer, Mrs. M. A.	Sparta, Wis.
Tobey, C. E.	Sparta, Wis.
Tobey, Mrs. C. E.	Sparta, Wis.

Winslow, A. A.	Appleton, Wis.
Winslow, Mrs. A. A.	Appleton, Wis.
Wolcott, E.	Sparta, Wis.
Wolcott, Mrs. E.	Sparta, Wis.
Witter, Geo. F.	Grand Rapids, Wis.
Van Maytre, T. J.	Fayette, Wis.
Van Maytre, Mrs. T. J.	Fayette, Wis.
Vlieland, H. B.	Waunakee, Wis.
Yahr, Solon	West Bend, Wis.

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S. A. SPAFFORD, Vice-President,	. . . . .	Grand Rapids.
J. H. TREAT, Secretary,	. . . . .	Meadow Valley.
A. E. BENNETT, Treasurer,	. . . . .	Grand Rapids.

EXECUTIVE COMMITTEE.

ANDREW SEARLS,	. . . . .	Grand Rapids.
----------------	-----------	---------------

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FOR 1895.

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JACOB HOFFMAN, First Vice-President,	. . . . .	Monroe.
W. P. COLLINS, Second Vice-President,	. . . . .	Mukwonago.
H. LATHROP, Resident Secretary,	. . . . .	Browntown.
N. E. FRANCE, Corresponding Secretary and Treasurer,	. . . . .	Platteville.

OFFICERS OF THE WISCONSIN FORESTRY ASSOCIATION FOR  
THE YEAR 1895.

*Date of Organization, April 6, 1893.*

B. S. HOXIE, President,	. . . . .	Evansville.
C. A. HUTCHINS, Vice-President,	. . . . .	Beloit.
L. S. CHENEY, Secretary and Treasurer,	. . . . .	Madison.

ADDITIONAL MEMBERS OF EXECUTIVE COMMITTEE.

J. H. STOUT,	. . . . .	Menominee.
H. C. PUTNAM,	. . . . .	Eau Claire.
H. O. KRUSCHKE,	. . . . .	Auroraville.

## LIST OF NURSERYMEN AND FRUIT GROWERS IN WISCONSIN.

---

Alsmeyer, E. C., De Forest, nurseryman and seed grower.

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

Boynton, W. D., Shricton, evergreen specialist.

Chappell, F. H., Oregon, grower and dealer in nursery stock.

Coe & Converse, Fort Atkinson, nursery and small fruit.

Cash, W. H. H., New Lisbon, nurseryman and fruit grower.

Edwards, F. C., Fort Atkinson, small fruits.

Edwards, J. M. & Son, nursery and small fruits.

Hatch, C. A., Ithaca, bee-keeper and fruit grower.

Hatch, A. L., Ithaca, Hill Crest fruit farm.

Hirschinger, Chas., Baraboo, orchardist and nursery stock of all kinds.

Houser, John, Onalaska, small fruits and vegetables.

Jewett, Z. K., Sparta nurseries.

Kellogg, L. G., Ripon, small fruit a specialty.

Kellogg, Geo. J., & Sons, Janesville, Belle Cottage fruit farm.

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

Louden, F. W., Janesville, originator of Jessie Strawberry and Loudon Raspberry.

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

Plumb, J. C., & Son, Milton nursery and dealers in nursery stock.

Philips, A. J., West Salem, orchard and nursery; introducer of Avista and Eureka apples.

Parsons, A. A., Eureka, orchard and small fruits.

Robbins, Mrs. Lelia, Platteville, grower of small fruits.

Robinson, A. S., Grand Rapids, vegetable grower.

Springer, Wm. A., Freemont, the Freemont nurseries; originator of  
Wolf River apple.

Seymour, A. N., Mazomanie, small fruits.

Spry, John, Fort Atkinson, grower of small fruits and plants.

Tuttle, A. G., Baraboo, small fruits.

Thayer, M. A., Sparta, small fruits.

Tobey, C. E., Sparta, Thayer fruit farm.

Yahr, Solon, West Bend, grower of small fruits.



## FRUIT LIST.

## APPLES.

NAME.	SIZE.	FORM.	SHADED SIDE.	SUNNY SIDE.	CALYX.	STEM.	CAVITY.
Antonovka.	Large.	Med. con. ribbed	Greenish yellow	Yellowish brown	Partly open	Short	Yellow russett
Avista.	Med. to large.	Roundish conical	Green	Yellow	Partly open	Medium, stout	Broad, shallow
Arabka.	Large.	Flat, conical	Dark green	Dark red	Open	Long, thin	Deep, russety
Charlamoff.	Large.	Flat, roundish	Greenish	Yellow, dark brown	Closed	Long and thin	Deep and russety
Eureka.	Medium to large.	Roundish, flat	Greenish yellow	Dark red	Open	Short, stout	Broad, shallow
Fall Orange.	Medium to large	Roundish	Pale yellow	Brownish with dots	Large and partly closed	Short	Deep and narrow
Fall Spitzenberg.	Medium to large.	Round and conical	Greenish yellow	Crimson with dots	Closed	Medium in length	Wide and very deep
Fameuse.	Medium	Round, flattened	Pale red	Deep red	Small	Short and small	Narrow, funnel like
Golden Russett.	Medium	Roundish, oblate	Golden russett	Yellowish russett	Nearly closed	Short and small	Deep
Hibernal.	Large.	Flat and round	Dull red	Striped red	Large, closed	Short, stout	Broad, deep
Longfield.	Medium	Flat, conical	Light green	Reddish yellow	Half open	Long, thin	Deep, smooth
Lubsk Queen.	Medium	Model	Bright red	Shaded white	Closed	Short, stout	Deep, regular
McMahan.	Large	Round, conical	Yellowish white	Reddish bluish	Large, open	Long, stout	Broad, deep
Newell.	Large	Round, flat and conical	Lemon yellow	Orange bluish	Closed	Stem short	Deep
N. W. Greening.	Large	Round, conical	Green	Yellowish bluish	Mostly closed	Medium	Large, russeted
Oldenburg.	Large	Round, oblate	Streaked red	Yellow and red	Large, closed	Short, stout	Broad
Patten's Greening.	Medium to large	Round, oblate	Waxen yellow	Faint bluish	Large, closed	Short	Broad, deep
Pewaukee.	Medium to large	Round, conical	Greenish yellow	Reddish streaked	Closed	Short	Shallow
Plumb's Cider	Medium	Round, conical	Reddish green	Green streaked	Closed	Short	Narrow
Raspberry.	Small	Flat, conical	Greenish yellow	Carmine	Closed	Long, thin	Deep yellow

BASIN.	FLESH.	USE AND VALUE—SCALE 1 TO 10.			SEASON.	TREE.	ORIGIN.
		Dessert.	Cooking.	Market.			
Deep ribbed	Greenish, white, firm	5	5	8	Early winter	Medium hardy	Russia
Broad, shallow	Very white	5	10	5	Winter	Hardy	Wisconsin
Ribbed, irregular	White and firm	5	7	5	Early winter	Medium hardy	Russia
Flat and irregular	Greenish and tender	4	6	5	Fall	Medium hardy	Russia
Broad, deep	Yellowish white	4	5	5	Winter	Hardy with age	Wisconsin
Deep and narrow	White, tender	6	8	5	Late fall	Hardy	Massachusetts
Narrow and abrupt	White and tender	7	7	6	Late fall	Medium hardy	Vermont
Narrow, small	Very white	10	4	8	Late fall	Hardy	France
Deep, round, op'n	Yellowish white	7	5	8	Winter	Hardy	Massachusetts
Broad and shallow	White	4	6	4	Late fall	Hardy	Russia
Ribbed, wavy	White, fine grained, firm	6	6	5	Winter	Medium hardy	Russia
Shallow	White, firm	6	4	6	Fall	Hardy	Russia
Small, abrupt	White, fine grain	6	10	10	Late fall	Very hardy	Wisconsin
Rather deep	White, tender	8	6	5	Winter	Hardy	Wisconsin
Small, irregular	White, tender	6	8	6	Winter	Hardy	Wisconsin
Broad, regular	Juicy, white	6	10	10	Early fall	Very hardy	Russia
Large, closed	White, firm	6	7	6	Early winter	Hardy	Wisconsin
Shallow, irregular	Yellowish, white	6	7	8	Winter	Medium hardy	Wisconsin
Broad, deep	White, firm	5	5	5	Late fall	Medium hardy	Wisconsin
Narrow ribbed	Greenish, white	8	4	7	Fall	Medium	Russia

## APPLES - Continued.

NAME.	SIZE.	FORM.	SHADED SIDE.	SUNNY SIDE.	CALYX.	STEM.	CAVITY.
Scott's Winter.	Small	Round, conical	Dark red, striped	Yellowish red	Closed	Short	Small, deep
Tetofski.	Medium	Oblate, conical, round	Reddish yellow	Whitish bloom	Closed	Short, stout	Narrow, deep
Walbridge.	Small	Flat, round	Whitish yellow	Pale reddish green	Small, closed	Short	Medium
Wealthy.	Medium to large	Round, oblate	Yellowish crimson	Dark red, striped	Partly closed	Short, medium, slender	Green, russett
Willow Twig.	Medium	Round, conical	Light yellow	Dull reddish	Partly closed	Short, slender	Narrow, deep
Wisconsin Russett.	Medium	Round, oblate	Yellow russett	Dark russett	Half open	Short	Broad, regular
Windsor Chief.	Medium	Round, oblate	Dull yellow	Dull red	Partly closed	Short	Regular
Wolf River.	Very large	Roundish, oblate	Reddish white	Pale green, yellow	Open	Very short	Large, greenish
CRABS.							
Transcendent	Medium	Roundish, oblong	Yellow crimson	Red cheek	Closed	Long, slender	Open, deep
Hyslop.	Large	Roundish, oblate	Light red	Dark red	Closed	Long, slender	Open, deep
Sweet Russett	Large	Round, conical	Light yellow	Dark yellow	Small, closed	Long, slender	Broad, deep
Whitney No. 20.	Medium to large	Round, conical	Golden yellow	Reddish crimson	Partly closed	Medium, slender	Broad, deep
Gibb.	Large	Round, oblate	Light yellow	Golden yellow	A little open	Short	Deep
Martha.	Large	Round, flat	Light red	Dark, reddish	Closed	Medium	Shallow
Virginia.	Medium	Round, oblate	Light yellow	Reddish yellow	Closed	Long	Shallow

BASIN.	FLESH.	USE AND VALUE—SCALE 1 TO 10.			SEASON.	TREE.	ORIGIN.
		Dessert.	Cooking.	Market.			
Broad, deep	White, firm	6	5	5	Winter	Hardy	Vermont
Small, corrugated	White, juicy	5	7	6	Summer	Very hardy	Russia
Small, plaited	White, fine, tender, juicy	1	7	5	Winter	Hardy	Illinois
Deep, uneven	Reddish white, fine grained	10	10	10	Early winter	Hardy	Minnesota
Broad, shallow	Yellowish green, hard	5	5	7	Winter	Medium hardy	Unknown
Irregular	Yellowish white, firm	4	5	5	Winter	Medium	Wisconsin
Regular, broad	White, half tender	5	6	8	Winter	Medium	Wisconsin
Large, very deep	White, coarse	6	6	8	Late fall	Hardy	Wisconsin
Shallow	Creamy yellow	6	5	5	Summer	Hardy	
Broad, shallow	Yellowish white	4	5	8	Early winter	Hardy	
None	Mellow, tender	8	5	5	Autumn	Hardy	Wisconsin
Deep	Tender, white, juicy	10	7	7	Autumn	Hardy	Illinois
Broad, shallow	Rich, yellow	5	5	5	Autumn	Hardy	Peffer, Wis
Broad, shallow	White, firm	5	7	6	Late autumn	Hardy	Minnesota
Shallow	White, juicy	5	6	5	Late autumn	Very hardy, best for top worki'g	Russian wild crab Budd

## PEARS.\*

Flemish Beauty, Bessimianki, Early Bergamot, Keifer.

## PLUMS.

*American varieties*—De Sota, Cheney, Wolf, Rockford, Miner [if top grafted].

*European varieties for lake region*—Abundance, Green Gage, Lombard, Field, Hudson River, Purple Egg, Moore's Arctic.

## CHERRIES.

*Hardest*—Early Richmond.

*Kentish*—English Morello.

*For trial*—Wragg, Bessarabian.

## STRAWBERRIES.†

*For shipment*—\*Warfield, \*Crescent, Enhance, Wilson, Parker, Earle, Van Deman.

*For near markets*—\*Bubach, \*Haverland, \*Princess, \*Crescent, \*Warfield, Wood, Enhance, Jessie.

*For home use*—Jessie, \*Bubach, Crawford, \*Warfield, \*Crescent, Parker Earle.

*For furnishing pollen to imperfect flowering kinds*—Parker Earle, Michel, Jessie, Wilson, Wood, Enhance, Van Deman, Saunders, Capt. Jack.

*Late*—Eureka, Gandy, Parker Earle.

*Early*—Wood, \*Crescent, Van Deman, Warfield.

## GRAPES.

*For market vineyards*—Moore's Early, Worden, Concord, Brighton, Delaware.

*For home use*—Moore's Early, Worden, Brighton, Delaware, Massasoit, Moore's Diamond, Lindley.

*Late keepers*—Wilder, Lindley, Vergennes, Merrimac, Agawam

*Early*—Moore's Early, Early Victor

*White Grapes*—Pocklington, Niagara, Green Mountain.

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\* Note.—The best sites for apples, cherries, plums, pears and grapes in Wisconsin, are elevated limestone soils, not too rich, and free from untimely spring frosts, or places under the influence of bodies of water. Plant those kinds that are succeeding best on soils and sites similar to the one to be used; plant but few kinds with different kinds near each other, rather than in large blocks, and thus secure better fertilization of bloom; to prevent injury by insects and parasitic fungi spray and give good cultivation before July 1st each season.

†Note—Those marked with an asterisk have imperfect flowers and should be planted near those having perfect flowers.

## BLACK RASPBERRIES.

Nemaha, Gregg, Ohio, Older.

*Early*—Palmer.

## RED RASPBERRIES.

Marlboro, Cuthbert, Brandywine, Shaffer.

*For trial*—Superlative, Royal Church, Loudon, Columbian.

## BLACKBERRIES \*

Snyder, Ancient Briton, Stones Hardy, Badger

## DEWBERRIES.

*For trial*—Lucretia, Bartel.

## CURRANTS.

White Grape, White Dutch.

*Red*—Prince Albert, Victoria, Holland, Red Dutch.

*Black*†—Lee's, Black Naples.

## GOOSEBERRIES.

*For general cultivation*—Houghton, Downing.

*For trial*—Red Jacket, Triumph, Columbus, Queen.

\* Winter protection recommended.

† Grow best in shady places; used for cooking only.

## TREES AND SHRUBS RECOMMENDED.

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### EVERGREENS.

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

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

*For lawns and cemeteries.*—Norway Spruce for backgrounds. For groups — American Arbor Vitae, Hovey's Golden Arbor Vitae, Pyramidali's Arbor Vitae, Siberian Arbor Vitae, Juniper Excelsa.

*For small lawn decoration.*—Juniper Suecica, Arbor Vitae, Hovey's Golden Arbor Vitae, Pyramidali's Arbor Vitae.

### DECIDUOUS TREES.

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

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

### SHRUBS FOR CEMETERIES.

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

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

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

### ROSES.

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

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

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

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

*Hybrid China.*—Madam Plantier, Madam Hardy.

*Brier Roses.*—Persian Yellow, Harrison.



# CONSTITUTION AND BY-LAWS.

*As amended February, 1885.*

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## 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*; or *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.

## AMENDMENT NO. 1.

The foregoing article four of the constitution was amended at the annual meeting, February, 1895, to read: The President, Vice-President, Treasurer, Secretary and Corresponding Secretary shall be the Executive Committee of the society; also, that three of the aforesaid committee shall constitute a quorum to transact business.

## 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 annually by the executive committee of the society.

# ACT OF RE-ORGANIZATION

AND LAWS RELATING TO THE

## STATE HORTICULTURAL SOCIETY.

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

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

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

be filled by a two-thirds vote of the members of the society present at any regular appointed meeting.

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

CHAPTER 526, LAWS OF 1889.

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

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

to the superintendent of public property, 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.

#### CHAPTER 148, LAWS OF 1895.

AN ACT to appropriate a sum of money to the Wisconsin State Horticultural Society.

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

SECTION 1. There is hereby appropriated the sum of fifteen hundred dollars out of the general fund annually, to the Wisconsin State Horti-

cultural Society, and five hundred dollars to establish an additional experiment station.

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

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

Approved April 8, 1895.

#### CHAPTER 339.

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

REPORT  
OF THE  
TRANSACTIONS AT THE SUMMER MEETING  
OF THE  
WISCONSIN STATE HORTICULTURAL SOCIETY

At Madison, June 21, 22, 1894.

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Meeting opened with President L. G. Kellogg in the chair, who appointed the following committees:

*Program.*—Prof. J. E. Coleman, Evansville; R. J. Coe, Ft. Atkinson; A. D. Barnes, Waupaca.

*Awards.*—D. C. Converse, Ft. Atkinson; Chas. Hirschinger, Baraboo; A. L. Hatch, Ithaca.

Prof. J. E. Coleman announced the program for the afternoon meeting.

Prof. E. S. Goff made a statement that there were some items of business that required a meeting of the committee on trial stations, and asked that such a meeting be held immediately after adjournment.

B. S. Hoxie moved that the Society visit the horticultural station at 7 a. m. Friday.

Carried. Meeting adjourned until 1:30 p. m.



Senate Chamber, 1:30 P. M.

### PLANTING AN APPLE TREE.

B. S. Hoxie, Evansville.

When I gave my topic to the secretary I had in mind, or my thought directed me in, the line of general tree planting—trees about the home, the public highway, etc.—but his reply was, “Yes, let it be an apple tree, and I will get Hatch, Hirschinger and Tuttle to care for it, prune it and market the fruit.” So on my way here this morning, and in the corridor of this building, I have been asked what time I was going to plant *the tree*. So you see there is some interest manifest in tree planting. I could perform the task in this assembly chamber, but how my friends are to pick and market the fruit will not be so easy a thing to do. But if I fail to plant the tree properly, I am afraid they will lay all of its unfruitfulness or barrenness to me.

Now I am no nurseryman, and have only a few apple trees growing in my garden. So a few days ago I wrote to my friend, Chappell, of Oregon, asking him to bring or send to this meeting two apple trees, either two or three years old from time of grafting. I also said, “Let one be a seedling, if you have it, and be sure to dig them up carefully so as to save every root possible.” Now, the trees are here, and Friend Chappell is here, and they are all fine specimens—I mean the trees. I did not particularly care for all of these long roots, but some do, for you frequently read directions how to set out a tree, and the first is to dig a large hole; “let it be three or four feet in diameter and be sure and straighten out all the roots.” Now, this tree has one root over four feet long; and I am, very glad of it, for I think if you will notice as I hold up the tree, that it is of last year’s growth and nearly as smooth in its length as some of the limbs.

Now, here are the trees, and I call them good specimens: healthy, luxuriant, a good root system, and well balanced tops.

Mr. Chappell, is this a whole root, crown graft, or piece root?

Mr. Chappell—It is a piece root. I prefer that mode of grafting.

Well, this tree speaks for itself in the beginning of its life. Now, I believe the scion does influence the root to a certain extent, when possibly it cannot the stock of two or more years' growth. This seedling from the piece root, which failed from some cause to nourish the cion, sent up a stalk of its own, and you will see the root system is not as fine as on this other tree, but I believe they each had an equal chance, except the cion failed to grow on one and it did on the other.

I have said this was a fine tree, but when Mr. Hatch gets at it with his knife I am afraid he will spoil it, but for my purpose I will only shorten in a few limbs, take out one or two, and cut off this leader. What! cut off the leader? Yes, if it is growing too long to suit me; let these side branches develop a little. Now I will cut off all of these long roots with a sharp knife, and always from the under side upwards. Now the tree is ready to plant. How large a hole will it require? Not to exceed two feet in diameter, and possibly twenty inches is sufficient. I would have these holes dug just as I was going to set my trees, and when the soil was just moist enough to pack firmly about the roots, which of course have been puddled, or should be, and this is all the water I would give at time of setting, for a hole full of water and the tree churned up and down at time of setting to my mind is all wrong, and the labor worse than useless. I would press the dirt *very firm* about the tree. You know you can pack the dirt round a fence post until you wonder what has become of it all, when certainly you have quite a good sized post. Now, this will illustrate what I mean by packing the dirt firm about the tree. If your trees were root pruned last fall when they came from the nursery, and properly healed in they are calloused and ready to start into growth, but if dug up in the spring I would cut the roots immediately and *keep them moist* until time of setting, which you need not hurry, even if the buds do start some. These roots cut off, as I have shown, will soon begin to callous, and as the ground warms up will send out the feeding roots. These will take hold of the *firm* soil about them and push out into the natural soil. Mulching, staking to prevent swaying by the wind, and other details to the proper planting of the orchard I have no time to enter into in this dissertation. There are

some foolish notions about planting trees, and this "large hole" advice is one of them. We hear very little said about careful digging or bruising body or limbs.

I said to a neighbor last spring that I would like four nice maple trees from his farm to set for street trees. He was an intelligent man and I did not think it necessary to give him advice as to caring for the trees, as he had to bring them twenty miles. He brought the trees and threw them off near the place where I wanted to plant them out, but did not notify me of the fact until the next day, when he called my attention to them, at the same time remarking that he had brought *all* the tops and "they were fine trees;" but the roots were mangled and bruised beyond redemption. I asked, "How much apiece for the trees? Forty cents he had been selling for to others. "Oh, give them plenty of water and they will grow." "No," I said, "I will pay you for the trees and you may take them away. You have delivered the trees but I would not spend the time to set them out, expecting them ever to grow even on a water diet."

Every bruised spot on root, body, or limb, is a damage to the tree and will impair its future growth, and yet we see them hawked about the country every spring just as carelessly as though they were a load of fence posts. I sometimes wonder that any of them live. Some nurserymen are to blame for this, but even if they exercise care, their help are careless. I have seen trees dug and then exposed to sun and wind for twenty-four hours before they were packed; they were moist enough though when the delivery was made. I went one spring to the nursery for various kinds of trees and the proprietor sent a boy along who took every tree as it was dug to the pudding box, and the roots were never dry before they were set out, and in this lot were over one hundred evergreens and not one died.

Mr. President, if what I have said about "planting the tree" has been of any benefit, or awakened one thought of criticism, either pro or con, then I am glad to present the subject.

## DISCUSSION.

Prof. E. S. Goff—Do you think it would be practical to set that tree out today?

B. S. Hoxie—It would be possible to make it grow but it would not be practicable.

A. L. Hatch—I think there would be 999 chances in 1000 of its dying.

B. S. Hoxie—I would say the chances of its living or dying are about even.

Q.—Would you set that tree straight up and down, that is, without leaning in any direction?

B. S. Hoxie—Yes, sir; I am a straight up and down man and I would want my trees to stand straight. If you get a good system of roots the tree will grow all right if set straight. When I see any of my trees leaning, even when they have been set several years, I go out and straighten them up.

Secretary—Is there any necessity for cutting off those roots? It seems to me nature does things about right and I do not see any necessity for cutting off the roots. If you receive trees from the nurseryman having roots straight and nice is there any necessity for cutting them off?

B. S. Hoxie—Yes; we want a good system of roots, but what is the use of having a root four feet long? We will only have to dig a much larger hole, if we keep the roots straight, and we will gain nothing by it. The food is not taken in by the roots or rootlets, but by the little filaments on them. If we cut away a part of that long root, just as many filaments will form and it is better to start a new growth of feeders than to dig a hole large enough to accommodate the large roots and then have to tramp the earth down around them. I would rather have the fresh earth for the new roots to start out in.

## HOW TO CULTIVATE THE TREE.

A. D. Barnes, Waupaca.

I always plant in quintex form or broken rows, that the ground may the easier be plowed, cultivated or harrowed; thereby coming closer to the trees, and working all or nearly all the ground, and keeping the surface nearly level, always avoiding deep ditches, or high ridges, as the ridges soon dry out in a dry season, to the detriment of the trees, and if the land is seeded to clover in this rough condition it is unhandy to cut or harvest; besides the appearance of the orchard is very unpleasant.

The ground should be carefully plowed between the rows in the fall, and cross-plowed in the spring, the furrow being thrown to the tree in the fall, and from it in crossing in the spring, care being taken to alternate the direction of plowing both fall and spring, thus making it possible to throw the dirt to the tree each time in the fall. After crossing in spring the ground should be thoroughly harrowed to a fine surface as soon as the land will work nicely and not pack. All spaces around and under the trees should be carefully spaded and shaken up with a spading fork, all sods and weeds removed, then the surface thoroughly raked with a garden rake; always avoiding plowing or digging deep with any tool or implement of any kind, to avoid cutting or bruising the roots of the tree. This method of fine, even surface cultivation serves in many ways to retain and preserve the moisture, arrest capillary evaporation, and encourage a healthy and vigorous growth.

The surface of the ground should be thoroughly mulched at least once in every two or three years with a liberal coat of well rotted manure spread on in early spring; this should be carefully worked into the ground between the trees and left on the surface under them. This manuring, or rather mulching, should be applied under the trees a few days after the soil has been forked up and raked over. I consider the growing of one or two heavy crops of clover, and plowing the sec-

and crop under, one of the easiest and most profitable modes of cultivating and fertilizing the orchard. The growing clover roots loosens up the soil, bringing many valuable elements to the surface for food for the tree rootlets, and if a fresh crop of green clover is plowed under it is as good a fertilizer as one could ask for.

If an old orchard has become barren and unhealthy a wagon load of good, fresh clay spread over the surface of the ground around, and under, the trees as far out as the limbs extend, will add new vigor and fruitfulness to them. This, of course, should be carefully worked into the surface soil during the summer.

Care should always be taken to avoid planting or growing any crop in the orchard that makes a woody growth, such as timothy, June grass, oats or rye, for they require about the same elements to grow and mature them that the trees require to grow and mature the fruit, and these kinds of crops require an immense amount of moisture, rooting so near the surface as they do they always monopolize and use up the moisture required by the trees, especially if allowed to mature; hence the cultivation of a crop of clover, vegetables, peas or potatoes that are harvested in a green or fresh state, will not detract from the properties and moisture of the soil as a woody or matured crop does.

Desist from the idea that you must grow a crop of hay or grain, or secure a full season's pasture in the orchard to make it pay, and persist in the idea that to make the orchard pay you must cultivate and fertilize for the benefit of the crop you desire to grow on the trees, and not on the land.

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#### DISCUSSION.

J. C. Plumb—Mr. Barnes, how far apart would you plant your trees?

A. D. Barnes—About twenty-one feet north and south by fourteen feet east and west.

Prof. E. S. Goff—What would you do if you had to put your orchard on land that sloped so it would wash?

A. D. Barnes—I would do the most of my plowing across the slope and seed to clover as soon as I could. I would mulch and use the spading fork around the trees.

A. L. Hatch—You say that you recommend planting fourteen by twenty-one feet. How many does that take to the acre?

A. D. Barnes—Between 140 and 150 trees to the acre.

A. L. Hatch—When you say, plant fourteen by twenty-one feet, do you mean all kinds of trees?

A. D. Barnes—I do. It would not pay to plant one tree one way and another tree another in the same orchard. If you plant on prairie soil you may have your trees farther apart, if on sandy soil, closer together. It largely depends on the kind of soil you have.

B. S. Hoxie—I understand you recommend planting evergreens by the side of apple trees.

A. D. Barnes—I do. I have a Flemish Beauty planted between two cedars and I know it is an advantage to the tree. In certain cases I do it, but I do not generally advocate it. I find it is some trouble.

A. L. Hatch—Your little circular is still going out recommending that method.

A. D. Barnes—Recollect, that little cedar is a dwarf. I do not let it grow up high, neither do I recommend any one's doing it.

J. C. Plumb—How long have you been planting your trees in the quincunx form?

A. D. Barnes—I have one orchard of 1,200 trees that I have cultivated for seven years, and it is planted in that form. It would not be exactly the rule for every one to go by to plant in quintex form, fourteen by twenty-one feet, on all soils and with all kinds of trees. They would stand further apart, however, than if they were set twenty feet apart each way.

J. C. Plumb—Some fifty years ago Mr. Cox, the original apple man of New England, recommended that method of planting. In 1845 my father planted an orchard in that form and it fell to my lot to cultivate it for ten or twelve years, and there was not a year that I did not feel sore over the way the or-

chard was set out. I am surprised to see a young man advocating that old, worn-out theory to the world, and I am afraid that such a course will counteract all the good he may do in other directions. I do not know today of any large orchard planted on that plan. I learned a good while ago that even when apple trees are planted but one rod apart they will find a forty-foot space for themselves when they get ready for it. If Mr. Barnes had left out just one-half his trees it might do very well, but he has just twice too many trees on his land. The impracticable quincunx form is "played out."

A. D. Barnes—I am going to keep on planting in that form. I not only recommend it, but I practice it. I cultivate with a steel tooth harrow. There is an advantage to be gained from planting trees closer together north and south than east and west, but in our climate, 150 miles north of Mr. Plumb's locality, our trees will not grow so large as they grow on Mr. Plumb's ground, that makes some difference. I am devoting the ground for the benefit of the trees, I am not devoting it to other crops. We do not expect the trees in our part of the state to make as large, or as rapid growth as they do in Mr. Plumb's locality.

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## PRUNING THE TREE.

A. L. Hatch, Ithaca.

I have never yet seen a tree grow one season but that it could be improved by pruning. I never prune except in the spring before the sap begins to flow. Pruning should not be done after a hard winter because the tree will not be in the necessary, good condition to bear it, and the first establishment of growth is an exhaustive process. The stored up plant food is required to be sent down to re-establish the root growth, before there can be any food drawn from the soil. If you cut off a large portion of the tree top, when the tree has been nearly winter-killed, you take away part of the power of the tree to begin growing again.



Pruning should not be done in summer, because at that time the tree is drawing material from the earth and from the air. If you take away the leaves, you take away the feeding ability of the tree to that extent. We prune for vigor, for growth and for fruit, and we also prune for thinning the fruit. If the tree is to make good growth it is necessary that it have good foliage, and if you rob it, it is like taking away the food of any domestic animal when the animal is feeding. If you have a bearing tree that is bearing fruit to excess, remove some of the limbs in the spring and it will be found beneficial. Of course in pruning and managing trees, you have all found what we call "water sprouts." Frequently these will be found covered with lice, and for that reason, if for no other, it will pay to remove them; they should also be taken away to prevent them from sapping the tree.

This tree is past trimming for the nurseryman. Mr. Hoxie thinks this is a good form, but I would prefer that these limbs be more evenly distributed. Here is quite a cluster of limbs, there a space without any. Any limb that is subordinate to another will not bear as good fruit. I would cut away all sharp forks because they are liable to be broken down by heavy winds. Cutting back limbs tends to throw out side branches. I always take exceptions to a tree of this kind if sent out by a nurseryman. It ought to have been a more finished tree.

A system of roots should not be out of balance with the top. Some twelve years ago I got an orchard that was in very bad condition. The branches of the trees were very low and I had to cut off and prune them far beyond what my judgment said was good, but the result was that I sold eight hundred dollars worth of apples from that orchard in two years, and that was what the orchard of twelve acres had cost me. I think it bore well because I pruned it so. I am satisfied that in my own orchard I have gained thousands of bushels of apples by close pruning when I could have gained those conditions on my soil without. I grow more fruit and better fruit than my neighbors do, whose orchards are under like conditions, with that exception. I think it is the result of pruning in the right time and the right way. I have brought trees into bearing that were unfruitful before.

I would not prune after a hard winter and I would not prune in the summer. It is absolutely necessary that a tree, to make good growth, should not be robbed of its foliage. If you have a bearing tree, and you are convinced that it is going to bear to excess you will need to thin by pruning in the spring.

If I had a tree that was going to bear too heavily and I had left it until now (June) I would simply pick off the apples. I would not cut off any of its foliage because I would rob it of its vitality if I did so.

Much is said about the winds, but I do not care for the winds if I have a reasonable amount of vitality to go on. I once pruned off three-fourths of the top of a tree, where the worms had worked on the tree, and it bore a good crop for me. I think we can do a great deal for the tree by pruning.

Q.—Can you prune a tree by cutting off branches six inches in diameter?

A. L. Hatch—Yes, sir; that can be done if the previous winter has been a mild one. A great deal more can be done in this way than most people think possible, but the work must be done in the right way. Pruning is not the whole management, but it is a large part of it.

Chas. Hirschinger—I want Mr. Hatch to prune that tree as it ought to be.

A. L. Hatch—I would cut all of those bad forks out. We want to get these foundation limbs as near the trunks as we can so as to have strength in the tree. I do not like a limb that all of its fruit is borne three or four feet from the tree.

F. H. Chappel—When you cut a limb off the next one below it has to take its place. My idea is to trim and make branches sufficient, no more, no less, never cut the end of a limb off, never leave the fruit out too far on the limb so that it hangs down.

Secretary—Mr. Hatch, would you cut back that tree this year if you had set it last year?

A. L. Hatch—Yes, if it had not been done last year I would prune it back now. If you set that tree with the three limbs on it that it has now, the chances are that one of them will die. You will have to correct deficiencies next year, and you will have to every year.

## PROTECTING THE TREE.

A. J. Philips, West Salem.

I think my plan of protection is familiar to most of you. I protect with lath. I think it affords the best protection for young trees, and all the protection that they need. I have never found any thing equal to it, it is cheap and it does not afford a nest for mice and such vermin.

It is something that is permanent; put on a temporary protection and it is about as the old German said to me, "I take good care of my trees two years, then I build a barn and I let 'em go." I took off protection that I had on some trees for eight years and you could see a great difference in the trees.

Men have criticised me as if I was advocating this for the money there was in it. I have carried my protector to Institutes and farmers' meetings. I have carried it to Washington to show it. I have never made a cent out of it. After a tree has been well set I do hate to see it destroyed. I heard the statement made here years ago that we wanted to set an evergreen to protect a tree, but if we do we will soon see it growing away from it.

Plant your evergreens a hundred feet away from your trees if you want to protect them with evergreens. Plant in quintex form if you want to. I am well satisfied with my trees that have been protected with lath. The common wire like binding wire will last as long as the lath will, the tree will fill up the space the protector occupies in about seven years.

Q.—What about filling the nicks with dirt as some of the Minnesota farmers do?

Secretary—I have tried it, but it is not practicable. I think it has a tendency to make the bark tender. It is not a practicable protection for the average grower.

Q.—What kind of wire do you use for binding the lath together?

Secretary—I think No. 18, copper wire is the best, but it is the most expensive. The common wire will last as long as the lath will; that is if you leave the lath on the tree. If you take

it off every year the wire will break from the effects of rust. As I said before, the size of lath cylinder that I use, the tree will fill out in about seven years.

Prof. Goff—Mr. Harden protected some of his trees with straw, some of them were not protected. Where the tree was protected it did not bear, while those trees not protected were bearing. The protection seemed to retard the bearing. I have found that while the tree is small the protector catches so much wind that it blows the tree over a little and galls it. I have also noticed that, in hard winters, the frost heaved up the lath out of the ground.

A. D. Barnes—I visited Mr. Harden's place and examined his trees; we opened the straw and found the trees bright and nice. I believe if that protection had been removed it would have been bad for the trees.

J. C. Plumb—I would suggest to Prof. Goff that the protection to those trees that he spoke of was not the cause of their not bearing, but the lack of protection hastened the bearing of the unprotected trees beyond what it should have been.

A. L. Hatch—We, Prof. Goff and I, expect to protect some trees with rye straw, we expect to run the straw up and protect the branches above where your protector reaches. We intend to treat the straw with the Bordeaux mixture and it will be an insecticide and fungicide as well as a protector.

Secretary—If you will add to "insecticide" and "fungicide," "suicide," you will have it expressed all right, for that is what it will be. If Prof. Goff has found something better than mine I will adopt it just as soon as I am convinced of it. If we must protect the trees up here in the crotches against the mice and rabbits we might just as well give it up. If there is anything that needs protection we had better graft it and improve it and not use straw for protection, for it is not practicable.

A. L. Hatch—I visited Mr. Zettle's orchard, I heard he had protected for sun scald. I asked him about it and he replied, "No, I put that protection on for mice and rabbits. I do not think it protects from sun scald. If you get the right elements in a tree it will be all right." Mr. Zettle has trees seventeen inches in diameter with a thirty-foot top that have been

planted seventeen years. He does not think a tree will sunscald if properly managed.

J. C. Plumb—I suppose, of course, these gentlemen have been talking about winter protection, but there is another line of protection that we do not want to lose sight of. I have been telling people for the last five years to wrap a newspaper around a shade tree or an apple tree, and if they will do so they will find that it will double the chances for life of a tree the first year.

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### SPRAYING THE APPLE TREE.

Prof. E. S. Goff, Madison.

When a physician is called to prescribe for a patient, if he is a wise physician, he first ascertains what is the matter with the patient, and he seldom prescribes exactly the same kind of treatment for different patients. If I was going to spray an apple tree, I would first want to find out what ailed the tree so as to know what I must spray for. One important point comes in here, you will find there will be a difference in the opening of the leaves of about a week or ten days, so you cannot tend all of your trees at the same time. There is no use in spraying a tree until the leaf-buds are open. Something has been said about winter spraying, but it is not yet proved that it is necessary and no good reasons have been given for its practice. To kill the lice, spraying might be done before the leaves are fully open. You will find when the leaves are just opening out that the eggs of the aphid are just hatching out, if you wait a week or ten days until the leaves are fully expanded the lice will be on the under side and you cannot reach them with the sprayer.

I would spray for the aphid with a pump like this, made by the Nixon Nozzle Machine Co., I think the price for this size is ten dollars.

After the leaves are opened it will be too late to spray for the bark louse. The apple scab affects almost all varieties of

apple trees, and if we wait until the disease takes the trees it will be too late to prevent the injury. Just as soon as the leaves begin to expand I would spray with Bordeaux mixture and Paris Green. The Paris green is put in to destroy the leaf roller which is liable to do much injury at this time. Wait until the petals begin forming and spray again, this time with Bordeaux mixture alone.

Q.—What is your formula for the Bordeaux mixture?

Prof. Goff—Six pounds copper sulphate dissolved in four gallons of water, four pounds fresh lime slacked in four gallons of water; mix together and put into fifty gallons of water. This makes a good formula. We use one ounce of Paris green to ten gallons. I would add five ounces to a barrel of water. We now use the chemical test for the lime, it is a solution of Ferro cyanide of potassium. Dissolve the crystals in water. I have it in a bottle that is something like a pepper sauce bottle with a nozzle; this is a yellow solution. If the proper amount of lime is put into the mixture it will retain its color, but if too much is put in, it will turn it brown.

There is a spraying pump with the nozzle so arranged that it can be disengaged by the thumb.

I would spray up to July, especially if June should be dry.

I would add Paris green for the coddling moth. Paris green does not unite with the lime. You might injure the foliage on the plum or peach but you would not injure it on the apple.

Lime produces no chemical effect on Paris green.

A. L. Hatch—The lime is calculated to neutralize the arsenous acid and thus prevents injurious effects.

Geo. J. Kellogg—I think your formula for the Bordeaux mixture is too strong. I think six pounds is too much for a barrel of water.

Prof. Goff—Copper sulphate is neutralized by the lime; the injurious effect is all that makes the mixture valuable.

Chas. Hirschinger—I have used four pounds instead of six. In spraying my trees much of the poison gets on the grass under the trees. Does that make it injurious to stock?

Prof. Goff—I think not, if you use only that amount.

Q.—What would you use to destroy the dark green slug that eats the leaves of the cherry trees?

Prof. Goff—Kerosene emulsion.

J. C. Plumb—Is the distribution, or mixing of the kerosene, by the pump as effectual as it is to make an emulsion?

Prof. Goff—I have found it so.

A. L. Hatch—What per cent. of kerosene will an apple tree stand, if it is put on the foliage?

Prof. Goff—I do not know. I have never put on enough to injure the foliage. Plants will endure a large per cent.

A. L. Hatch—Will fifteen per cent. injure the majority of our plants?

Prof. Goff—Yes. I used a mixture of ten per cent. It is possible that five per cent. will do the work, but I haven't experimented with it much.

Warren Gray—We have something in our vicinity that affects the apple; it seems to be some insect that stings it. Is there anything we can use to destroy it?

Prof Goff—I presume you refer to the apple curculio. I would use Paris green, although it will not destroy them all.

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## RASPBERRIES, VARIETIES AND HANDLING.

D. C. Converse, Ft. Atkinson.

When assigned the subject of Raspberries for a paper to be read at this meeting, it, at first thought, seemed useless to attempt to prepare anything in that line, as small fruits have been discussed and written about until it seems as if nothing new of value could be said. Yet, when we consider the various needs of growers in the different parts of the state, with different soils, climates and conditions, as well as the various locations, as regards markets, a paper seems timely and, I trust, may be useful.

Experience proves that any well-drained soil that will produce any of the ordinary farm and garden crops is well adapted to raspberry culture.

Thorough preparation of the soil is, I believe, the strongest

point in insuring success, for no matter how good the plants, if the ground is lumpy and hard the chances are against them. No after-culture can supply the lack of thorough preparation before setting.

As a rule spring planting will give better success unless it be with the red varieties. These can be set to advantage in the fall, but each hill should receive a forkful of manure to

The problem presents itself, of, How can the largest crop be produced at the least possible expense? I still believe that the solution is found largely in the substitution of horse for man labor.

This can easily be done by planning so as to cultivate both ways. We have adopted the plans of setting the reds at a distance of five by five feet, and the cap varieties at seven by three feet, nine inches.

"But," says some one, "you can't cross the rows after they branch and get into bloom." I wish to say that on a two-year old patch, we, this season, cultivated across the rows until nearly June.

The value of the above is seen at a glance. Nearly all the work of loosening the soil and destroying the weeds is done with the cultivators, so that very little hand work is required.

Of course where bushes are covered for winter protection and then held up by wires along side the rows, this plan would not be practicable. But in our locality very little protection is given, and no supports for the bushes are used among market growers.

After having tried quite a large assortment of the red varieties, we have decided that for our soil and climate Turner, Cuthbert, Brandywine and Shaffer are the most reliable and profitable.

Turner makes a strong growth, is hardy and although soft, comes early and helps keep a steady supply of fruit which is a strong point in successful fruit culture.

Cuthbert is large and fine but needs protection. Brandywine, being hardy, bright colored, good yielder and shipper, is our main dependence, selling well in any market.

For the home garden, no variety compares with the Shaffer. And as a commercial berry it is valuable for local markets,



some customers preferring it to any other. Of course it is too soft for long shipment.

In black caps the assortment is larger. Tyler, Soughegan and Spry's Early, have done, and are still doing well. Palmer promises well, and in some localities seems to be crowding the other early varieties out.

On account of the hardiness, vigor of cane and bearing qualities, I believe the Ohio ranks at the head. It seems to do well everywhere.

Older is proving large, hardy and wonderfully productive. It may be too soft for long shipment, but where markets are found within a radius of fifty or seventy-five miles, it is very valuable.

Gregg, with the exception of one or two years, has not proved satisfactory. Nemeha has also proved disappointing.

Ground, for setting, should not only be thoroughly prepared, but prepared early, the soon the better, in the spring after the soil is in condition to be worked.

Then as soon as possible the planting should be done. If the plants send out long sprouts before being set, failure, in a large measure, is almost sure to follow.

We used to furrow out, for setting, with a shovel plow, but found that the loose dirt between the plants dried out much more rapidly than that left undisturbed and as a consequence failure sometimes followed.

We now, with a spade, dig a hole seven or eight inches square and three inches deep, then immediately set the plant, filling in with the loose, moist dirt just thrown out.

In regard to pruning new growth, the red varieties seem to do better if left unpruned.

By nipping black caps at the height of twelve or eighteen inches the first year and from eighteen to twenty-four inches afterward, a strong bushy growth is produced. Of course the nipping checks the upward growth and causes the laterals to start. In our practice no more nipping is done until the following spring, whether tips are desired or not.

The old canes can generally be taken out better in the fall as the ground is firmer and plants pull out much less than in the spring.

Marketing. It is our experience that the local markets—home and neighboring towns—yield better net results to the grower than the larger distributing centers where one comes in competition with fruit from different states.

In view of the heavy trade of nurserymen, generally, last spring, and the large number going into the fruit business, it may be well for us to consider whether the fruit business is to be overdone. Judging from the past and the present, in our own immediate vicinity, I can see no danger along that line. I can think now of half a dozen farms near Ft. Atkinson, that, a few years ago cut quite a figure in supplying the local markets with fruit, that now produce next to nothing in that line. Many other places are probably the same. So many start, meet with failure from drouth or insects, get discouraged, say, "the business doesn't pay," and go out, leaving the persevering, determined grower to reap the harvest.

Men say, "This is no fruit country; if I lived in California or New York, why I could grow fruit that is fruit." You remember Prof. Henry told us in one of our meetings that as a poor man he would rather grow currants here in Wisconsin than attempt to compete with the monied fruit growers of California.

While on a recent visit to New York, which happened to be in raspberry time, I took particular pains to notice the raspberry plantations in and around Monroe county.

I was surprised to find the grounds not as well cultivated, canes less thrifty and productive than here at home. At the same time one grower had contracted his crop at six cents, berries were retailing at eight cents, while here at home they were selling at twelve and one-half cents.

In view of the above facts, any Wisconsin man who will say "You can't grow fruit in Wisconsin," ought to be ashamed of himself, sell his birthright and get out.

Notwithstanding the frosts and drouths of the present season, let me say, from the standpoint of a young man to young men, that the growing of fruit offers you as honorable, useful and profitable business as any, and if Wisconsin is not the paradise of the fruit-grower, it is so near it, that any man who will work his brain and sweat his brow, can and will succeed.

## DISCUSSION.

Q.—Does any one here know of a patch of old black caps that is now ten years old, that has not blighted, and is not blighting now?

J. C. Plumb—I planted a raspberry plantation twenty-seven years ago, and kept it for over ten years. I picked ten consecutive crops from it. I then dug it up to make room for my growing orchard trees.

A. L. Hatch—That does not answer the question, for the conditions that existed twenty-seven years ago are not now present in toto, and they do not show what is going on now. Mr. Hayes, of Minnesota, says, “the blight has now become so universal that, unless some remedy is soon found for it, farmers in Minnesota will have to give up the culture of black caps.”

A. S. Crooker—About eleven years ago I set out some apple trees, and between the rows I set out black raspberries. From those raspberries we got at least eight good crops before they died out. Last year was the first failure we had.

Q.—Did you cultivate them?

A. S. Crooker—Yes, sir; and cut out and clipped them also.

A. L. Hatch—Mr. Converse, what is the best possible treatment you would give your Cuthberts, that is, how late would you cultivate in order to have them ripen up? How late can you cultivate and benefit your crop, or how late can you cultivate and not injure it? Do you let the old canes remain to hold up the bushes?

D. C. Converse—We let the old canes remain year after year. It is too much trouble to cut them out.

F. H. Chappel—I cultivated until the latter part of September and they matured the wood so well that some of them did not winter kill one particle and some of them not more than an inch. I believe we will have to cultivate the berries and mature the wood.

A. L. Hatch—I have a patch of about one-half acre or a little more, this is their fourth season, they should have borne me three crops. I have sprayed them and now they are wonderfully fine. I did not find hardly one blighted.

Geo. J. Kellogg—We have upset everything we ever did know on the raspberry question.

Prof. J. E. Coleman—Eleven or twelve years ago I bought some apple trees and some raspberry plants of Samuel Hunt, of Evansville. My mother insisted in keeping her chicken coops and chickens right along where the raspberries grew. They bore good crops for eight years and then they killed out.

D. C. Converse—I believe we can have success with black raspberries for more than three or four years if we give thorough cultivation and fertilize them.

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### STRAWBERRIES IN 1894.

Geo. J. Kellogg, Janesville.

It is difficult to form correct conclusions from three years of trial of any variety of small fruit. The condition of plants, previous treatment, drouth, frosts, storms, early or late runners, soil, locations, insects and all the surroundings enter so largely into success or failure, that it is not possible to prove any variety on even three years' trial, and one man's report is not proof.

Any recommendation of varieties must be comparative. New varieties must be grown beside old standards in order to get at their merits.

In 1893 we planted in rows forty rods long, Smith, Wilson, Warfield, Burt, Crescent, Van Deman, Haverland, Wood and fifteen other kinds, in rows running over a gravelly knoll; first mentioned were on the higher ground; first strawberry bloom in 1894 was April 28th; first ripe berry was Warfield, May 27th; first two quarts of berries May 30th, Warfield, Van Deman and Crescent; first for market June 1st, Warfield, Van Deman, Crescent and Michel, Wood and Rio following June 3d and 4th.

Van Deman gave wonderful promise at time of bloom, but excepting the early setting bloom nearly every berry blighted,

perhaps owing to the frosts, but the other varieties right beside carried their full crop of later berries and would have given full picking to the last but for the drouth.

The Smith did not show favorably either on this or another plantation, and needs further trial. Michel perhaps would have given ripe berries before the others had it been on the earliest location; it gave a few pickings early on the old plantation, but is not worthy any further trial on our grounds, except to grow plants.

If Van Deman proves productive it heads the list for early; in 1892 it showed no disposition to bloom; in 1893 it was worthless after a year of careful culture; this year the bloom and early pickings were all that could be desired; why it failed to set the later fruit I cannot see. Rio did the same thing on a distant part of the field though on lower ground, and we hold it in reserve and on trial, expecting better behavior from both these early, vigorous, healthy kinds.

Wood came in two days later with a fine crop of fruit, but the foliage is so feeble and so easily overcome by frost and rust that it is not all that is to be desired and is not sustaining its reputation.

The finest early strawberry I have ever seen is Loudon's No. 2, handsome and attractive, large size, quality, No. 1. Its beauty is readily seen across the street, and sells at three to five cents above the market. This variety this year last its later bloom, Mr. Loudon is quite sure, by the frost, as it has never failed before of giving a continuous crop through the season, ripening with Wood. Foliage, rank, vigorous and healthy; blossom, perfect.

No. 2 is a bright, glossy red, large size, long, holding its size full to the tip. While it has a long neck, it is full and the reflex calyx in green, adding to its appearance, is not easily parted in picking and firm enough for near market. I recommend that it be named Loudon's No. 2.

Crescent as an early pistillate cannot be left out of any list. While Mr. Von Baumbach lost his crop of Crescent by the frost for the first time in twenty years, he lost his Warfield this year by the drouth, so that after fifty years' experience and with the most remarkable success, now, after two

years of faithful labor and expenditure such as no other man gives, June 14th, he told me his crop was almost an entire failure. It is hoped that the rains may have revived his drooping Warfield and Wilson and given better returns.

Knowing he was able, the only consolation I could give him was that we were tough and could stand it. This loss by drouth is severe with us also.

Since taking our field notes, June 11th, the drouth has been very marked and the bountiful showers the 15th, 16th and 17th, will save but a small portion of the late varieties.

From our fruit notes this year we place at the head of the list of early perfect sorts, Loudon No. 2, following with Van Deman, Rio, Wood, Lovett, Splendid, Jessie, Hoard, Saunders, Woolverton, Leader, Enhance, Earle, Crawford and Gandy.

We head the pistillate, early sorts, with Crescent, Warfield and Haverland, following with Bubach, Queen, Middlefield, Stayman's No. 1, Princess, Eclipse, Eureka and Pacific.

Of new varieties, Crosby, Crosby's No. 27 and No. 91 are very promising, while Quick of Waupun has failed two years and we shall throw it out after one more year, unless it improves.

Greenville, Timbrell, Muskingum and Cyclone are on good soil side by side with Wood and Warfield, and they do not make half a show, but we have increased our planting and continue to water them with muscle and brains, while we cultivate faith, hope and charity in trying the following kinds: Iowa Beauty, Beebe, Beverly, Roe, Standard, Edwards' Favorite, Dew, Regina, Meek's Early, Gandy Bell (or No Name), Bissel, Belle, Australian Everbearing, Shuster's Gem, Princeton Chief, Marshall, Ivanhoe, Tennessee Prolific, Aroma, Robinson, Shuckless, Cherokee, etc.

We have planted thirty-six varieties in one small block to keep in hills, but a part of the ground has been salted with cow manure that unknown to us contained eggs or small larva of the May beetle, and in hoeing I discovered a spot rich in manure and within eighteen inches of one strawberry plant I dug out and killed 253 of the larva. This manure was drawn from a cow yard in the city last October, and spread on the

ground and plowed in, and two large loads are piled beside the patch and so full of larva that we shall not use it unless we draw it where the hens can work it over.

This season has been like all others full of promise and full of frost and drouth, earlier than usual and severe frosts up to June 6th.

The plum and apple bloom passed the crisis and set a heavy crop, which with us frosts since have not injured; the frosts of May 4th and 11th, snow and ice 18th, 19th and 20th, frosts May 28th and 31st, and June 5th and 6th, so severe that grapes and potatoes were badly injured.

No wonder we are again at sea in strawberry reports; these frosts followed by severe drouth again teaches us that protection by mulch is always necessary both in drouth and rainy seasons, and we believe that Earle must have a heavy mulch of manure applied in April or May, before the picking season.

Of the varieties we shall discard, the following are among the number: Swindle, Southard, Sandoval, Idaho, Anna Forest, Wonder, Putnam, Gillespie, Capt. Jack or Burt, Quick and Thompson's No. 31.

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#### DISCUSSION.

Q.—Why do you discard Capt. Jack?

Geo. J. Kellogg—It rusts itself to death.

President—Have you had any experience with the Shuckless?

Geo. J. Kellogg—I have only had a few plants. I have no faith in it.

Prof. J. E. Coleman—What do you use to pollenize the Warfield?

Geo. J. Kellogg—I believe the Lovett is the best thing I have struck for the last three years.

Q.—What will you plant next year to pollenize the Warfield?

Geo. J. Kellogg—Van Deman and Lovett. The Splendid is one of the finest bearing plants. I have had it three years;

it is doing very finely. We get a crop about once in four years of Jessie and Sharpless, and if any one wants big berries they are the ones to have. I protected my plants during the winter. The Beder Wood rusted badly on my grounds this year.

F. H. Chappel—I have been troubled with rust on my grounds on the Warfield. I put on ashes this year and I haven't had hardly any rust.

Secretary—I think a good deal of the rust this year is due to the frost. Although Mr. Peffer says he has not had any frost, yet I thought I saw the ear-marks all around there.

J. C. Plumb—Does Mr. Kellogg, or any one else present, know anything about the aphid on the strawberry plants? A gentleman came to me with some aphid. He brought them in a bottle; he found them on strawberry plants in a highly cultivated garden; he saw them last year, and this year there were a good many more; they were found at the roots of the plants.

Prof. J. E. Coleman—What is the best method of cutting off the runners? I have failed of raising as large berries as I would like to raise, and I think it is because I have not cut off the runners as I ought to.

Secretary—The Baraboo growers use a disc cultivator to cut off the runners. It has been stated here that what you did do you ought to do well. Mr. Gifford, who is here, had the best mulched plantation I have ever seen, and after that big rain we had his berries were nice and clean, because of his thorough mulching. He mulched with marsh hay.

F. H. Chappel—I use rye straw. I do not like marsh hay because there is too much wild seed in it.

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## BLACKBERRIES, VARIETIES AND CULTIVATION.

A. S. Crooker, Ripon.

As the cultivation of the blackberry is each year increasing in favor both with the professional fruit growers and the gen-



eral public, it may be well for us to give a few moments to a consideration of its merits and needs. As the subject is stated, it will naturally be considered under two heads—Varieties and Cultivation.

There are really but two sorts that can claim our attention at this meeting. These are the Snyder and Ancient Briton.

The first named has but one qualification that can commend it to the grower, viz., hardiness. It is claimed that this variety will endure our climate without winter protection, but I have seen it killed back quite badly when left exposed to the severity of some of our winters. As a market berry it is a flat failure. The fruit turns red soon after being picked, and is exceedingly unattractive in appearance. After about three pickings the fruit becomes hard at the core, while the fruit on the outside is so soft that the cases leak in transit and are an abomination both to middlemen and consumer. A few of our growers continue to cultivate it because of its earliness and hardiness, but are yearly reducing their acreage, and it is only a question of a very short time when the cultivation of it will wholly cease.

The Briton is the berry chiefly grown in and around Ripon. It has many good qualities: fine flavor, great productiveness, vigorous growth and a tough wood, making it possible to lay the bushes down with a minimum of breakage.

Other varieties possibly suited to Wisconsin are Lawton, Erie and Early Harvest, but I cannot speak of these from personal knowledge. The Briton doubtless combines more good qualities than any other tested variety.

#### Culture.

Blackberries need a good soil and thorough culture. They should be set on land slightly elevated and well drained. If covered with water for any great length of time after being lain down the canes will rot, resulting in a loss of the previous year's growth.

In setting a new plantation I would mark off the rows eight feet apart. My own field is set seven feet, but it does not give sufficient room for work with a horse or carrying the fruit.

One year from time of setting wire your field. Set a common cedar fence post at each end and stakes in pairs, at intervals of sixty-six feet or less, if you can afford it. When the new canes are three feet high they must be pinched at the tip, which will start the laterals along the stem and form a bushy top. These laterals are what bear the fruit the next year. String a line of galvanized wire along each side of the row, supporting it by nails driven into the stakes; draw the wires tight as soon as the berries are taken up in the spring, and cross tie at each hill with jute or binding twine. At the end of the fruit season cut out and remove the old wood, and just before it freezes up lay all down and cover lightly with earth.

It will pay well to use a plow after the bushes are down. Turn a furrow to the row and plow the entire space between the rows. In the spring I plow it all back and it leaves the soil in fine condition to cultivate all the following summer.

Give liberal dressings of stable manure as often as possible, applying the same broadcast over the entire field, as the roots of this berry extend long distances in all directions.

We have had trouble sometimes with too much fruit setting. I believe we can obviate the difficulty by clipping the ends of the laterals as we do black raspberries. I treated my own so this year and it looks now as if it would work well, although it is too early for definite forecasts.

Q.—How far apart in the row do you plant?

A.—Three feet.

Q.—At what height do you clip them?

A.—At two and one-half or three feet. They will make some growth after you clip them.

Q.—Is there any advantage in two wires over one?

A.—I think there is.

Q.—How high must those wires be?

A.—From two feet to two and one-half feet high. Do not weave the wire but tie them across.

Q.—How far apart are those wires?

A.—About two feet. My soil is black loam with a clay subsoil. I have traced the growth of roots in the soil for six

feet. In an old plantation the wires would be about three feet high.

Warren Gray—In my part of the state the Snyder is more profitable than the Britton; it has come earlier and lasted longer.

F. H. Chappel—Has any one here ever tried the Minewaska berry?

Prof. Goff—We had it in New York; it is very popular there. Adjourned.

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Thursday Evening, Assembly Chamber.

### ANNUALS FOR BEDDING PURPOSES.

Miss Isabel T. Byrne, Madison.

The question is what to select that may be satisfactory from early spring until the late frosts. Let us first suggest those from which we may derive the greatest amount of pleasure, with the least expenditure of labor, as nowadays the first thought in all walks of life is labor saving. But it must be borne in mind, pleasure without trouble need not be looked for. Plants will not yield their best nor will one have perfect blossoms without thoughtful consideration and experience with some assistance from reading. At the present day there are a great number of inexpensive publications where one may glean very valuable information.

A word or so as to the requirements of the sweet, short-lived annuals; the dear old fashioned flowers that the very humblest may delight in, for the actual expense of growing them is, comparatively speaking, nothing. A few seeds any person will give, who cultivates flowers; they will flourish in almost any nook or corner if thought is given as to what will be the right plant for that particular spot.

In regard to designs for beds, attempt nothing elaborate or you'll be certain to meet with disappointment because of your lack of the knowledge of color effects. The professional

gardener has mastered this, because of his familiarity and study of plant life. The amateur should be satisfied with simple geometric figures. Next study the plat of ground to be used and its surroundings. A fan-shaped bed can be made to look most effective in this way: for the curved top a wide band of golden fever few; the next band, same width of centaurea, then bank back with coleus vers chafeltu. This will make a showy but inexpensive bed.

Save over a good sized coleus; in March cut it all up into cuttings; put them in earth, place your empty jelly glasses over the cuttings, stand in an east or south window. By so doing you may start a hundred nice plants or more. Five cents worth of fever few and thirty cents of centaurea is all one requires. This is all I ever attempt in the line of a show bed.

Some seasons it looks very pretty. The expense never exceeds fifty cents. Tuberous begonias are fine for bedding, and are very easily taken care of, not only while in bloom, but during the resting period, as the tubers are packed away for winter. They require partial shade the hottest part of the day, and delight in a good leaf mold such as we find in the woods. The colors are most brilliant and rich. The single flower is most preferable.

Keep the bed well mulched and give plenty of water. Their requirements are so simple that the amateur need not be afraid to give them a trial. The first expense is all. The tubers if properly cared for will last and increase in size year after year. The blossoms are exquisite for cutting and are quite lasting.

It matters not what varieties you may select nor the taste displayed in the arrangement of beds; they will not afford any pleasure or satisfaction to yourself nor any one else if they do not have constant care. The beds must be gone over carefully day after day. A most important part of the work is to keep them well trimmed. Do not be afraid of using the clippers. Above all things keep in mind cleanliness and neatness. If beds are to look their best do not leave dead leaves or clippings around. Without a love for plants do not try to grow

them. Flowers are not for neglect; they are to brighten and beautify.

Neither experiment with commercial fertilizers. The barn-yard fertilizer will keep the soil light and porous, as the commercial cannot. And, then, the gardener is in no danger of overdoing. Give plenty from the barn. Plants like people require plenty of good generous food.

Wood ashes are fine, especially for sweet peas. Be sure to plant a good hedge of these. They are most prolific in return. Cut them. When we have flowers let them be picked and our less favored friends enjoy their beauty and freshness. The more we cut and give the greater our return. If we cut every morning they will continue to blossom day after day. It is a most generous flower—so grateful for the little care bestowed—not like the selfish balsam that will bloom only once. Plant sweet peas in good garden soil—deep and early. Mulch the lines with the clippings from the lawn. This acts like a sponge, holds the moisture and when decayed is a benefit to the soil. It is better to prepare the beds in the fall for the next spring's work as far as possible.

Hardy annuals ought to be planted early, in fact some should be sown in the fall. Plant plenty of mignonette. It is a wealth of sweetness from early summer until the late fall frosts appear. Border a petunia bed with it.

If you should happen some fine morning, when picking your daily bouquet, to find stems with the leaves eaten off, you may be sure the green worm is at work. Make a weak solution of Paris green, say, a level teaspoonful to ten quarts of water. After the sun has dried the dew, give the bed a good sprinkling. Do this about twice during the season and you'll not be troubled in the least with the pests.

Perhaps there is some unsightly spot. Nasturtiums for this. For picking and decorating purposes we have nothing finer. Then, too, they are especially nice for the school-room window. When planting your seeds in the spring, put two or three in a flower pot or box, some of Lobb's climbing ones. Let them grow all the summer. By September they will be yards long. Take them to the school-room; twine them up and across the window. They will send forth their fragrant blossoms day

after day, and be a never ending source of pleasure to the wee lads and lassies. There it is—in one way or another ready for a delightful talk or object lesson.

Elysium, "little gem," and blue lobelia can be massed together in a very effective manner, making a beautiful bed. For yellow effects use California poppies, coreopsis, calendula galardia and orange marigolds. For early spring bloom make ready in the fall a pansy bed. They are such thrifty, hardy beauties. Do not forget to have a good border of the sweet old June pink, as also annual dianthus.

New compact corenia, which is very little known here, is fine for bedding. It is a compact, upright, little bush, completely covered with a mass of bloom all the season until checked by the frost. It is one of the tender annuals. The exquisite flowers are winged cup-shaped; the color, a clear lavender blue, spotted intense purple, with a white or yellow throat. Have a large bed of asters for September bloom.

The Stock gelly flower plant in beds of distinct colors. Leave only one single flowered plant for seed. Do not pull the single ones up, but cut them down clear to the ground. If you cannot have many flowers you can at least choose a favorite one. Have it for your emblem. Study and know its habits and requirements—cultivate it so as to bring out all its beauty. Cultivation with education will overcome almost all difficulties. Take any catalogue and you'll find just what you wish for the garden. But here let us throw in first a word of caution. In making out this list revise and cut down. Put it away for a few days, then repeat. Finally conclude to take only two or three varieties and give them care. If we have only one let it be the very best. I have only touched on the few of the many.

J. C. Plumb—These ladies who have read these interesting papers are practical florists. They are competent to be teachers. I wish more of our ladies had the practical knowledge these ladies possess. I think their papers will be valuable to our society and for our volume.

## MISSION OF FLOWERS.

Lucie A. Strong, Baraboo.

"Your voiceless lips, O flowers! are living preachers,  
 Each cup a pulpit, every leaf a book,  
 Supplying to my fancy numerous teachers  
 From loneliest nook.

Floral apostles! that in dewy splendor  
 "Weep without woes, and blush without a crime."  
 O, may I deeply learn, and ne'er surrender  
 Your lore sublime!

"Thou wert not, Solomon, in all thy glory  
 Arrayed," the lilies cry, "in robes like ours!  
 How vain your grandeur! ah, how transitory  
 Are human flowers!"

In the sweet-scented pictures, heavenly artist,  
 With which thou paintest Nature's wide-spread hall,  
 What a delightful lesson thou impartest  
 Of love to all!

Not useless are ye flowers! though made for pleasure;  
 Blooming o'er field and wave, by day and night,  
 From every source your sanction bids me treasure  
 Harmless delight."

Flowers! Is there a single person in this room who does not love them? No, I think not. There seems to be an in-born love for them in the heart of every man, woman and child, which makes itself manifest sometime in life. Flowers, of all things the most innocently simple, and most superbly complex! Flowers, that unceasingly expand to heaven their grateful, and to man their cheerful, look: partners of human joy, soothers of human sorrow.

Flowers are in the volume of Nature what "God is love" is to the volume of the Revelation. What a desolate place would be a world without a flower. Are not flowers the stars of the earth, and are not our stars the flowers of heaven, or as Longfellow beautifully expresses it, "the forget-me-nots of the

angels"? One can not look closely at the structure of one of them without loving it. They are emblems and manifestations of God's love to the creation, and the means and ministrations of man's love to his fellow creatures, for they first awaken in his mind a sense of the good and beautiful.

Flowers contain the language and sentiment of the heart. The lily is an image of innocence, modesty is shown in the violet, affectionate remembrance by the blue forget-me-not. Even the dispositions of the human soul are expressed by them. We see grief portrayed by the weeping willow. Thus Nature, by the flowers, seems to betoken her loving sympathy with us; and whom hath *she* not often more consoled than heartless and voiceless human beings are able to do?

As the welcome messenger of spring, the snow-drop claims our first attention, and countless are the lays in which the praises of this modest little flower are sung. The contrast it presents, of green and white, may be one reason why mankind agree in their admiration of its simple beauties, but a far more powerful reason is the delightful association by which it is connected with the idea of the returning spring: the thought that the vegetable world, through the long, tedious winter months, has not been dead, but sleeping, and that long nights, fearful storms and chilling blasts have a limitation and a bound assigned them, and must, in their appointed time, give place to the genial influence of spring. Perhaps we have murmured at the length and dreariness of the winter, but the snow will soon vanish and from beneath its white coverlet will peep the delicate snow-drops, so pure and pale, yet so true an emblem of hope, trust and confidence. Should it not teach us a lesson of hopefulness, courage and patience? The snow-drop also teaches another lesson. It marks out the progress of time. We cannot behold it without feeling that another spring has come; and immediately our thoughts turn back to the events which have transpired since last its petals opened. Memory is busy with the past until anticipation takes up the chain of thought and we conjure up, and at last shape out in characters of hope, a long succession of chances and changes to fill up the revolving seasons which



must come and go before that little flower shall burst forth again.

We should like to talk at length of all the dear flowers that brighten our path-way from early spring till autumn bleak, but as God has given so many we can linger and notice but a few in particular.

Of the English primrose 'tis said,

“When young Spring first questioned Winter’s sway,  
And dared the sturdy blusterer on the fight,  
Thee on this bank he threw  
To mark the victory”

Nature’s poet speaks so lovingly of the violet when he says,

“E’er russet fields their green resume,  
Sweet flower, I love in forest bare,  
To meet thee, when thy faint perfume  
Alone is in the virgin air.”

And further on he speaks of forgetting the low, modest violet, when, in May “the loftier flowers are flaunting nigh.” These are his words:

“So they who climb to wealth, forget  
The friends in darker fortunes tried.  
I copied them—but I regret  
That I should ape the ways of pride”

Even the busy tiller of the soil, whose mind and thoughts are pre-occupied with his prosaic labor, often stops to lament that the “wee, modest crimson-tipped flower” must be crushed in his path-way.

And there’s the stately white lily. Its mission is one of purity to our souls, else it would not be thought the most appropriate of emblems in the observation of Christ’s resurrection.

“I know not what the lilies were  
That grew in ancient times;  
When Jesus walked with children fair  
Through groves of eastern climes,  
And made each flower as he passed by it  
A type of faith, content and quiet.  
But they were not more pure and bright

Than those our gardens show;  
 Or those that shed their silver light  
 Where the dark waters flow;  
 Or those that hide in woodland alley,  
 The fragrant lilies of the valley.  
 And I, in each of them would see  
 Some lesson for my youth:  
 The loveliness of purity,  
 The stateliness of truth,  
 Whene'er I look upon the lustre  
 Of those that in the garden cluster."

And then the beautiful rose which we so much admire;  
 would it still be so lovely were its fragrance lacking? From  
 the rose our lesson should be that our lives be fragrant with  
 kindly words and kindly deeds.

And now, as we stroll through our garden, in solitude, just  
 "When the day is done; and slowly from the scene  
 The stooping sun upgathers his spent shafts  
 And puts them back in his golden quiver!"

We pause a space by the velvety pansy of which A. A. has  
 said, "Then there's pansies that's for thoughts." Search the  
 whole bed over and we cannot find two exactly alike. They  
 have as much individuality as men and women. This is why  
 we love them so much, I think. It gives them sort of a hu-  
 man interest and establishes a kind of kinship between us.  
 Let us study their faces. Here is a dark petalled one with  
 a world of pathos in its upturned face. It seems a flower with  
 a story to tell, a sad story with tears in it. Just beside it is  
 one with all the sunshine of summer showing in its happy,  
 jolly face. We look at it and catch ourselves smiling at and  
 with it, and we want to put our fingers under its chin, as we  
 would under a baby's and tell it of its charms. It wins its  
 way to our hearts with its bright, frank, light-hearted look,  
 and puts us in mind of the human faces we know that carry  
 sunshine with them. Next to it grows a flower that has a  
 thoughtful, serious look about it. Its face is full of grave  
 beauty, and we fancy it must be a pansy poet, thinking—over  
 what? Who can tell? But it really seems as if some of them  
 do have thoughts.

Have you ever noticed that some flowers affect us in the same way as do our moods? In certain moods we do not care to talk with any one, but prefer to be alone. We never think of telling a friend of them. They belong to us, individually, and others would not be likely to understand them. In our garden we have a flower growing that we never think of sharing with our friends. It seems our own special flower, and if a stranger were to ask for it we should feel almost as if he intruded on thoughts which the world had nothing to do with. It is a flower that fits our quiet moods, and unconsciously we have made it a symbol of them, and it has a sort of sacredness because of this association.

I once read a pretty story of a dear old colored "Auntie" who lived alone, her husband and children having died. On a wall in her tidy home hung a tiny shoe by the half worn string, a silent reminder of the one gone before. She was old, and in her second childhood was living those days over again, as we shall see. And whom, think you, were her children? They were her plants and flowers. With loving care she watched them, talking to them as to children, and when in the early morning or dewy eve, she worked out of doors, she said her plant children were crowding to the window to look at her, and she even imagined that the larger ones leaned far out ahead of the smaller to get a glimpse of mother. "Of course," said she, "I imagined it all, but it does my old heart so much good to think so; it's so nice to have something to talk to and think about." At night when her chores were done, she would lock the door, and lighting the lamp, would take her Bible and read to her children; then when bed-time came she would pull down the shade, saying to her plants: "Good night, children, God will take care of you." When asked if she had names for her children she replied, "Laws no, don't know one flower from another, but it's all the same. God sent them to cheer my lonely old heart." From this simple story shall we not learn that flowers have an influence not to be estimated, the gift of a few oftentimes bringing comfort and brightness to weary souls.

Very many are the lessons taught by the plant. From the time of the sprouting of the earliest seed, the putting forth

of the first green leaf, to the seed time and destruction of the plant by the frosts and snows of winter, the whole scale of human life and experience is shown and is felt by those susceptible to Nature's teachings. It does not require a cultivated intellect to know that the lessons of life are the same whether as shown by the flowers or by humanity. Did not the Great Teacher Himself take as illustration the sowing of the seed, and the reaping of the harvest? The beautiful flowers

"Teaching us by most persuasive reasons  
How akin they are to human things,"

in their life and death appeal most forcibly to both the outward and inward sensibilities, and touch a responsive cord in all hearts.

All flowers are beautiful, each in its way, and it pains me to hear God's children speak of any of them as "ugly" or "homely" flowers, and I am often reminded of the lines of Wordsworth:

"Thanks to the human heart by which we live,—  
Thanks to its tenderness, its joys and fears,  
To me the meanest flower that blows can give  
Thoughts that too often lie too deep for tears."

"God might have made the earth bring forth  
Enough for great and small,  
The oak-tree and the cedar-tree  
Without a flower at all.  
We might have had enough, enough,  
For every want of ours,  
For luxury, medicine and toil,  
And yet have had no flowers.

Then wherefore, wherefore were they made  
All dyed with rainbow light,  
All fashioned with supremest grace  
Upspringing day and night;—  
Springing in alleys green and low,  
And on the mountains high,  
And in the silent wilderness  
Where no man passes by?

Our outward life requires them not,—  
 Then wherefore had they birth?—  
 To minister delight to man,  
 To beautify the earth:  
 To comfort man,—to whisper hope,  
 Whene'er his faith is dim,  
 For who so careth for the flowers  
 Will care much more for him."

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### WHAT A WOMAN CAN DO MANAGING A FRUIT FARM.

Mrs. Lelia Robbins, Platteville.

The subject upon which I was requested to write was, "What a woman can do managing a fruit farm." Matthew Henry said Eve was made of a rib out of the side of Adam, not out of his head to top him, nor out of his feet to be trampled upon by him; but out of his side to be equal with him, under his arm to be protected, and near his heart to be beloved. While we may not all be protected and beloved, still we can equal man if we choose; and this is being demonstrated constantly. Have not women of this country proven themselves capable of filling positions which only men have been supposed to be able to fill?

I challenge anyone for a valid reason why a woman cannot personally oversee the workings of a fruit farm and direct its management as efficiently as a man. I do not mean to convey the idea that this is the sphere in which woman should move, for I always have thought, and still do think, that her ideal of happiness in this world is in a home surrounded by her loved ones, where she can leave the business cares to some one else and devote all her time in making her home pleasant and attractive. But there are those who, in the changing vicissitudes of life, are thrown from such a quiet retreat into the whirl of business life, and are compelled to brave the heavy waves of adversity for home and loved ones.

There is nothing in which profit, health and pleasure is so naturally combined as fruit raising; and nothing will yield

any better returns in the money invested than a fruit farm, if properly managed. And what is more conducive of good health than to be out in the pure, fresh air, laden with the breath of fruit and flowers?

While inexpedient for a woman to go into the field and wield the scepter of power before which the weeds so humbly bow—in other words, handle the hoe—yet she can direct the movements of these with a mind stored with the knowledge she has acquired from extensive and thorough research.

We have many sources from which we may learn how to raise fruit successfully, and by applying ourselves to the study of these books and papers and attending these horticultural meetings, we may enter into this occupation confident of success. I think a woman could handle ten acres of fruit very easily, and make an independent living for herself and enjoy it, too. I only wonder there are not more women engaged in the delightful occupation instead of crowding into the cities, where the air is so impure, or shutting themselves up in close schoolrooms, offices or work-shops. If they did, there would be fewer pale, sickly, irritable women, and more strong, healthy, cheerful ones.

It has been said, "It is worth one thousand pounds a year to have the habit of looking on the bright side of things." Let us surmount every obstacle that looms up before us, and with a cheerful perseverance look at the bright side of life. One cheerful face in a household will keep everything warm and light within. It may be a very plain face, but there is something in it we feel yet cannot express.

Ah, there is a world of magic in the plain, cheerful face, and we wouldn't exchange it for all the soulless beauty of the fairest form on earth. I think one way to succeed in business is to be always cheerful and have a loving word for all.

#### Loving Words.

Do you count them only trifles—  
 What on earth are sun and rain?  
 Never was a kind word wasted,  
 Never one was said in vain.

So in our business, or wherever we are, we can succeed a great deal better by being cheerful and even in adversity find some kind word to say to some one less fortunate than we are. Women are too often thought to be verdant in everything except womanish affairs. Many a home has been saved from financial ruin and many a fortune retrieved by the advice and help of a woman. I am an amateur as yet in the art of fruit-raising, and among so many experienced horticulturists I feel as though I had nothing to say that you do not already know, and I confess I came here to learn rather than to instruct, and I expect to go home with new ideas and a greater knowledge of fruit-raising than I had when I came.

I suppose we raise fruit in about the same manner that others do, although I do not suppose that there are any two that have exactly the same method, yet all are striving to reach the same end. It is well to exchange ideas and thus keep advancing and finding better methods. We must be alive to the improvements that are constantly being made in this direction if we would succeed.

In setting strawberries we set only the varieties that have been thoroughly tested. We think the Warfield is the best strawberry we have ever grown, both for shipping and home market. We use Bederwood, Jessie, Parker Earle, and others, for fertilizers, and if the Van Deman were as cheap we would use that largely. The Haviland has made a wonderful growth this year in spite of the dry season. In preparing the ground we pulverize it thoroughly, and with a marker which we made ourselves, mark the rows three and one-half feet apart. This marker marks three rows at a time and is weighted down so that the marks are deep enough for the plants which are dropped in and set very rapidly. We find this the best method we have ever tried—better than spade or trowel, and better than plow.

Out of a two-acre piece we set this spring we lost but two plants, and I believe those we set late in the spring would look quite as well had it not been so excessively dry. Care is taken to set the plants so that the crown is even with the ground and the roots spread out. All blossoms are cut off the first year. Every third row is one for fertilizing. We culti-

vate thoroughly, and in the fall when the ground is frozen we cover them with straw. In the spring we rake the covering partly off into the space between the rows and spray the vines with the Bordeaux mixture. Then, by having boxes and crates made, pickers engaged and markets looked up, we expect a good crop and have no trouble in disposing of it. Of course we are dependent on the weather, but this is one thing we receive direct from God and we have no right to complain if rain does not come when we think it ought to. The strawberry crop has been very light in our part of the state on account of the dry season this year and also last. The Ancient Briton is our principal blackberry and we think it is the best blackberry grown.

We also have a few Snyders for early market. The rust is an enemy of the blackberry, but I think by spraying the bushes with the Bordeaux mixture it can be kept from gaining a foothold.

I also think the future fruit-grower will have to provide some means by which his farm can be irrigated. Blackberries need winter protection with us. We bend the bushes to the ground and keep them in place by placing a little earth on the tips. After all are laid down we plow on each side of the row, thus throwing the earth over the bushes, nearly covering them, then with a shovel the work of covering is soon accomplished.

In the spring we again plow on each side of the row, throwing the earth away from the bushes and finish with a fork. We then level the ground, tie the bushes up and spray with Bordeaux mixture. For red raspberries we like the Cuthbert, and for black, the Gregg.

I have found it is more profitable to ship to near markets than to cities of large size. As the knowledge of the healthfulness of fruit increases the demand also increases, and I think there is no need in joining Coxey's army so long as an acre of land can be found on which to raise fruit.



## DISCUSSION.

Mrs. Campbell moved that the ladies, who had read papers, be elected honorary members of the society for one year. Carried.

A. L. Hatch—How long have you practiced spraying blackberries, and for what particular trouble?

Mrs. Robbins—We have only practiced this spring and for the purpose of preventing rust.

A. L. Hatch—There is one particular trouble about the berries drying up while green. Do you think you made any improvement in the plants by spraying?

A.—Yes, sir; we think so.

A. L. Hatch—There is a lady at Ripon who persuaded her father to sell his place, reserving seven acres, he did so and she had it put in to small fruit and sold fifteen hundred dollars worth from it. Her father told of it at the farmers' institutes and said he knew it because he had one thousand dollars left after paying all expenses.

I believe women have the tact to manage such things, and if there is any encouragement to be gained it is by bringing such papers to the front.

Chas. Hirschinger—I am quite surprised at what Mr. Hatch has just said. It is usually said that a Dutchman gets the women to work, but Mr. Hatch is not a Dutchman by any means. My wife says there is nothing so hard as picking strawberries, and I think women can do something that is easier.

B. S. Hoxie—I think Mr. Hatch is capable of taking care of himself, but I want to say that I do not think these women pick all of their berries. Any one would know that Mr. Hirschinger did not like to pick berries. Mrs. Robbins, or the lady Mr. Hatch spoke of, probably did not pick their berries, they simply managed the business and made a success of it, I build houses but I do not do all of the work.

Geo. J. Kellogg—Several years ago I had very satisfactory dealings with the Platteville fruit farm, which Mrs. Robbins is now managing. I know that she has given us practical

knowledge. I am glad that she did not give up the business and I am also glad that she has been made an honorary member of our society.

Jonathan Periam—I am always ready to talk if I have anything to say. I always like to come and meet with you because I get a good many ideas. I like especially to attend the evening meetings for I am always sure to hear something of especial interest. To say anything in praise of these papers would be like attempting to gild refined gold, but I want to say something about one thing that was mentioned, that of moisture. One reason why there are so many failures is, whenever there is a warm, dry air, when anything that has moisture in it touches that dry air it instantly gives up its moisture to it. The reason florists can grow plants so successfully is because they can furnish that moisture. In order to be successful with any kind of plant raising in the winter you must supply plenty of moisture.

It is an old Scotch adage that there is no place where plants are so successfully and well grown as in the kitchen, and it is so because there is plenty of moisture in the atmosphere.

God has given the leaf to the plant in order that it may give out oxygen constantly. Everything that breathes takes in oxygen and throws out carbonic acid gas.

There is this peculiarity that you will find in nature wherever you go, one thing uses what it wants and something else uses that particular thing the other does not want or use.

Adjourned to meet at 7:30 a. m., Friday, to visit the experimental farm.

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#### Friday Morning.

In response to a cordial invitation to visit the experimental farm at the university, all in attendance at the convention availed themselves of the opportunity of seeing for themselves the interesting experiments carried on there. Professors Goff and Henry, with Superintendent Adams, conducted us about the farm and made the visit a profitable one. We saw the

practical illustration of the effects of thorough cultivation, and the lack of it, as well as the advantages to be derived from irrigation. The system of irrigation as applied to the strawberry plat was so simple that every farmer can avail himself of the method with very little expense. To the fruit-grower it would save many dollars by giving better berries and by prolonging the picking season. Beside the long rows of irrigated plants loaded with fruit of fine size and appearance were those that had not received any moisture by artificial means; poor, half-starved looking plants, with a few berries of small size.

The experiments being conducted by Professors Goff and Henry are of incalculable value to the state. The system of sub-irrigation is being thoroughly tested.

The morning hours passed very quickly where there were so many objects of interest, and few there were who did not receive an incentive to go home and do more thorough work than he had ever done before.

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Friday A. M., June 22, Senate Chamber

## ORCHARDING AS COMPARED WITH OTHER FARMING.

Chas. Hirschinger, Baraboo.

In comparing orcharding with farming you must take into consideration the fact that it requires a long period of time before you commence to get any returns from your orchard. In this talk I am going to give you something from my account book, it is an account of an acre of land, or a piece of land that is just thirteen by sixteen rods. That acre has a history. In 1866 I raised sixty-two bushels of corn on it with fifty-two cents per bushel. In 1867 I sowed it to wheat and got one dollar and ten cents a bushel for it. In 1868 I planted it to corn and hops. I set the hops eight feet apart each way. I made the corn area smaller and only raised forty-two bushels.

I manured and fertilized the land and it was in good condition. The hops grew nicely, there wasn't a missing hill. I afterwards took out the hops and planted a nursery. In 1872, October 11, I sold part of the stock, to the amount of 520 dollars, and in the spring I sold the remainder of the nursery stock.

It takes some time for an orchard to grow until the trees come into bearing. In 1888 I did not have the best kind of a crop. I had Fameuse, Pewaukee and Haas; the number of barrels sold footed up three hundred and thirty-nine dollars and seventy cents. We had a good many windfalls, culls and two and one-half barrels of early Junes, which I think would about pay for my time that I spent in picking and sorting. That was not the best crop that I have raised on that acre I think this year's crop will be a better one.

There are so many things that we, as horticulturists, must contend with, soil, location and many other things, if I was to make them general I might get on debatable ground. From the time I was a small boy of ten years of age I have been interested and engaged in the work. I have also been farming and raising blooded stock and, as the Yankee said, "I have been all around the sap bush," but in the profit of raising apples as compared with other crops there was one thing that bothered me and that was the spraying business. I had said I would not have anything to do with it, I would trust to the Lord, but this spring I concluded I would try spraying. The trees in the orchard I describe were twenty-four feet apart and twelve feet apart in the rows.

I bought a pump and another man and I did the spraying. The expense of spraying that orchard was not over ninety-six cents, not including the team and my help. I let the sprouts grow up around my trees. I knew they ought to be off, but I did not have time to attend to them. I thought they would catch the sap suckers, but I found the sap suckers wouldn't touch them, they are a dreadful nuisance, I wish we might find some way to get rid of them.

## REPORT OF COMMITTEE ON AWARDS.

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

Your committee on awarding premiums for strawberries, plants and flowers respectfully submit the following report:

Best display of strawberries:

Geo. J. Kellogg, Janesville, first premium.....	\$4 00
Thayer Fruit Farm, Sparta, second.....	2 00

Best new seedling strawberry:

Geo. J. Kellogg, Janesville, first premium, Crosby, 91.....	2 00
L. G. Kellogg, Ripon, second, Quick.....	1 00

Best quart for general cultivation:

Geo. J. Kellogg, Janesville, first premium, Earle.....	1 00
Thayer Fruit Farm, Sparta, second, Earle.....	50

Best early variety:

Geo. J. Kellogg, Janesville, first premium, Haverland.....	1 00
Thayer Fruit Farm, Sparta, second, Van Deman.....	50

Best quart late variety:

Thayer Fruit Farm, Sparta, first premium.....	1 00
Geo. J. Kellogg, Janesville, second.....	50

Best three varieties for farmer:

Geo. J. Kellogg, Janesville, first premium.....	1 00
R. D. Mason and Son, second.....	50

First premium awarded on Earle, Warfield and Haverland.

Second premium awarded on Warfield and Haverland.

Best quart Warfield:

L. G. Kellogg, Ripon, first premium.....	1 00
A. D. Barnes, Waupaca, second.....	50

Best quart Jessie:

Geo. J. Kellogg, Janesville, first premium.....	1 00
A. D. Barnes, Waupaca, second.....	50

Best quart Haverland:

L. G. Kellogg, Ripon, first premium.....	1 00
R. D. Mason and Son, second.....	50

Best quart Bubach:

R. D. Mason and Son, first premium.....	1 00
Geo. J. Kellogg, Janesville, second.....	50

Best quart Van Deman.

L. G. Kellogg, Ripon, first premium.....	1 00
Thayer Fruit Farm, Sparta, second.....	50

Best quart Enhance:

L. G. Kellogg, Ripon, first premium.....	1 00
Geo. J. Kellogg, Janesville, second.....	50

<b>Best quart Crescent:</b>	
L. G. Kellogg, Ripon, first premium.....	\$1 00
Thayer Fruit Farm, Sparta, second.....	50
<b>Best quart Wood:</b>	
Thayer Fruit Farm, Sparta, first premium.....	1 00
Geo. J. Kellogg, Janesville, second.....	50
<b>Best quart Earle:</b>	
R. D. Mason and Son, first premium.....	1 00
L. G. Kellogg, Ripon, second.....	50
<b>Best quart Eureka:</b>	
Geo. J. Kellogg, Janesville, first premium .....	1 00
Thayer Fruit Farm, Sparta, second.....	50
<b>Best quart Great Pacific:</b>	
R. D. Mason and Son, first premium.....	1 00
Thayer Fruit Farm, Sparta, second.....	50

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#### BEST COLLECTION HOUSE PLANTS.

<b>Best collection, not less than ten varieties:</b>	
F. W. Bresee, Madison, first premium.....	\$3 00
<b>Best show moss roses:</b>	
Geo. J. Kellogg, Janesville, first premium.....	1 00
<b>Best collection roses in variety:</b>	
Geo. J. Kellogg, Janesville, first premium.....	2 00
F. W. Bresee, Madison, second .....	1 00
<b>Best table bouquet roses:</b>	
Geo. J. Kellogg, Janesville, first premium.....	1 00
F. W. Bresee, Madison, second.....	50
<b>Best bouquet white roses:</b>	
Geo. J. Kellogg, Janesville, first premium.....	1 00
F. W. Bresee, Madison, second.....	50
<b>Best bouquet of roses, other than white:</b>	
George J. Kellogg, Janesville, first premium.....	1 00
F. W. Bresee, Madison, second .....	50
<b>Best display cut flowers:</b>	
Mrs. Downing, Madison, first premium .....	3 00
F. W. Bresee, Madison, second .....	2 00
<b>Best collection foliage plants:</b>	
F. W. Bresee, Madison, first premium .....	2 00
<b>Best floral design:</b>	
F. W. Bresee, Madison, first premium .....	3 00
F. W. Bresee, Madison, second .....	2 00
<b>Best quart Early Richmond cherries:</b>	
A. L. Hatch, Ithaca, first premium.....	1 00

The committee regrets that Lewis Post, Madison, did not enter his Jessie strawberries for competition, as they excelled all others of the same variety shown.

The largest assortment of strawberries was shown by the Wisconsin experimental station. There were forty-five varieties on exhibition but they were not entered for competition.

The fruit and flower display was increased by the following:

Bush of red raspberries, the Loudon, which is reported as very promising.

Mrs. H. M. Hein, city water works, exhibited seventeen Duchess apples on a thirty-inch branch, growth of 1894. Estimated quantity on the tree, five and one-fourth bushels. Mrs. Hein also exhibited Catalpa blossoms.

Mrs. Charles Wyber, Madison, exhibited three varieties of Canterbury Bells.

H. A. Senger exhibited one variety of orchid.

D. C. Converse, Ft. Atkinson.

A. L. Hatch, Ithaca.

Chas. Hirschinger, Baraboo.

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#### SMALL FRUIT OUTLOOK FOR 1894.

C. E. Tobey, Sparta.

You requested me to speak of the Small Fruit Outlook for 1894. I shall devote my time to the outlook at Sparta where, in the past six years, the small fruit industry has made the most rapid strides of any point in our state.

A grand spring, plenty of rain, not too much for our sandy soil, nice weather for setting new plantations, strawberry plants, not too good, on account of last summer's drouth, but, if planted early, were good enough for this wet spring. Raspberry plants, both red and black, were nice, and blackberry plants never better. With such weather soil saturated, and new settings of plants all growing, the prospects on the

10th of May for a prosperous season were the best we had ever known. The season was at least two weeks in advance of any we have ever had. Blossoms were on all varieties of strawberries on our farms, except Gandy and Eureka. Michel had been in blossom since April 30th, Van Deman about the same time. Warfield, Wilson, Beder Wood and Haviland, on the 5th, this being fully two weeks earlier than last season. The 15th of May the thermometer registered 85 degrees and another soaking rain pushed every thing, so that on the 16th we pinched back our new growth of Britons and the early black caps. This was fifteen days earlier than our first pinching last year.

The 18th of May the thermometer indicated 32 degrees, but no harm was done; the 28th, the thermometer indicated 31 degrees, ice formed on pails of water, the leaves of strawberry plants were frozen crisp, but there was a heavy fog and no damage was done.

Prospects the first of June were never better and we picked the first ripe strawberry on our fifteen-acre field, which, by the way, was the Michel. The 2d day of June we picked two quarts of Michel.

Well, we must come to the 6th of June, in fact we did come to it, and it came to us with a temperature of 30 degrees. After a careful examination the effects could be easily seen, and we concluded that from sixty to seventy-five per cent. of the early blackcaps were beyond redemption for this season, and thirty-five to sixty per cent. of blackberries were also frozen and killed. Strawberries escaped all harm, late blossoms not even black-eyed to any considerable extent.

June 25th we commenced picking strawberries for market. We had been feeling the need of rain to keep the berries sizable, especially did we need it about the tenth of June. We thanked our lucky star, if we have one, that we had mulched heavily between the strawberry rows. Some growers on sand commenced to stop picking the 12th; on the 13th several growers gave up, but on our twelve acres we picked about 175 cases (sixteen quarts to a case), Warfields, and forty-five cases Michel and Van Deman. On the 14th, with the thermometer at 96 degrees, (a point it had also reached the 11th



and 12th), the drouth continued until the 16th. Strawberries were lessened in size and made inferior in quality by the extreme heat.

As regards prospects for the remainder of 1894, we think early blackcaps are damaged seventy-five per cent.; Gregg, fifty per cent.; Nemaha, about thirty-three and one third per cent.; Marlboro, twenty-five per cent.; Cuthbert, ten per cent.; Snyder blackberries, fifty per cent., and Briton, forty per cent.

Plums and grapes are looking splendid, especially the De Soto plum and Moore's Early and Worden grapes.

The prospect for a good stand of strawberries, raspberries and blackberry plants is good if plants were set early. By "early" I mean before May 1st.

I think we all neglect our new settings in the rush of spring work, that is, we don't get them in as early as it is possible to do so. Our rule this season was to prepare our ground as soon as we could work it and set as soon as team, men and tools could be placed in the field. There is some work that is necessarily neglected but new settings, and resettings of the plantation that failed in places is the most important work on the farm in April.

The prospects for a good growth and early ripening of the new cane are the best and this will allow us to commence laying down for winter earlier than usual, remembering that two weeks early in spring may mean two weeks early in fall, and once frozen up without winter protection, which we in Sparta must give, means a year's loss of crops.

You will say, after hearing of the numerous frosts to raspberries and blackberries, and the damaging drouth to strawberries, "you people in Sparta must be discouraged." We fling back the insinuation and say to you, one and all, that we are badgers, used to discouraging outlooks, but we know that Wisconsin today is the best state for fruit in the union, and Sparta is the Garden of Eden for small fruits of the western hemisphere. We defy the eastern, southern, northern and western growers of fruit to equal the yields of Sparta per acre, of strawberries, raspberries and blackberries. Does this defy answering the question as to the prospects for small fruit for 1894-5-6-7 or 1900?

A word about varieties—First of all among strawberries, Warfield stands as Abraham Lincoln did among our men, the one to shine above all. Last year it did not show its worth as in years before, and as it did this year, but where is the pistillate that did? This year it has again renewed its youth and promise, and is first all the time. You are asking yourselves, what staminate can he speak of so highly? And my reply will be, "None." There never will be a staminate equal to a pistillate. I say this with the expectation that older members will dispute me, but I doubt if any staminate has the stamina to grow, make plants, furnish pollen, and furnish a shipping berry like a pistillate or like the Warfield.

The Michel, plants of which were offered as a gift to those who would go and dig them from an old and reliable grower, a friend of mine, that berry which has been trampled upon, abused, discarded, sworn about and lied about, came nobly to the front this year. It was set one row to three of Warfield and has furnished us lots of berries and furnished us perfect-shaped Warfields for three rows on each side. What more can you ask?

We can ask more, and we think we have received it in the Van Deman; this grand berry has proven a success with us, not only as a fertilizer for Warfield, but as an early shipper and a healthy and vigorous plant maker; it can be picked and shipped with Warfield, which it resembles in color and firmness.

The prospects for the Nemeha proving the most profitable of all black caps are better than ever, the foliage is grand, and the growth of cane wonderful. The berry is the most beautiful of all, and very firm.

We have never said one-half enough in praise of the Marlboro, and can only echo Mr. Thayer's words, "The best market red in existence."

The Briton blackberry—is it necessary to say anything to this assemblage as to its merits? It should be renamed the Wisconsin, as it is now world renowned as, "that great Wisconsin berry."

It is a wonderful producer, larger in size and a wonderful shipper, and, strange as it may seem, a berry that, after being

these three is the best of all in quality and flavor; this last is a merit that few fruits handsome in appearance and large in size ever possess, but our Wisconsin blackberry has all of these and we are proud of this king, or emperor of the blackberries.

I may be devoting too much of this paper to the market sorts, but the growers are mostly interested in them.

A few words about varieties for the farmer and home gardener:

For strawberries, plant Warfield, Van Deman, Michel, Crescent and Haverland. For red raspberries, plant Marlboro and Cuthbert. For black raspberries, plant Palmer, Ohio, Older and Nemeha.

For yellow raspberries, plant Golden Queen. For purple, plant Shaffer, it is a grand berry for canning and for the table.

For blackberries, plant one-fourth of your ground to Snyder and three-fourths to Briton.

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## THE CUMULATIVE EFFECTS OF SPRAYING.

Prof. E. S. Goff, Madison.

The value of spraying as a means of preventing the ravages of insects and fungi in many plants, and especially in our orchards, is now generally conceded. Scarcely more than a decade has passed since the first orchard was sprayed in western New York, and yet we may now say that spraying is regarded as a necessary adjunct to successful apple culture by all thorough orchardists, and the results of most carefully conducted spraying experiments give abundant proof of its value in increasing the quantity and improving the quality of the fruit crop.

I wish to call your attention, briefly, to some of the indirect results of spraying which add emphasis to the importance of carrying on the work thoroughly and persistently. Suppose that by spraying our apple orchard four times the current season,

we increase the market value of our apple crop ten to twenty per cent. Is this the only reward that we receive? The question may be new to some of us, and yet a little thought will enable us to answer it surely in the negative. My attention was first called to this fact by observing some trees in Mr. Hatch's orchard that had been well sprayed with Bordeaux mixture the year previous. Their trunks and branches were so clean and fresh in appearance as to make them conspicuous among their neighbors of the same variety that had not been sprayed. Examination showed that the fungi that usually infest the bark of old apple trees had been entirely destroyed, leaving the bark clean and healthy, and furnishing a valuable object lesson which, however, told but a part of the truth. The preceding season's foliage and fruit had testified that the scab fungus had also been largely prevented from working its damage to these organs. We know that the leaves are the plant's organs of assimilation and that in proportion as these are maintained in a state of health can normal nutrition proceed. We have all observed that in the grape, the maturity of fruit and wood are always retarded by mildew, and we know full well that hardiness to endure cold is largely dependent upon wood maturity. It is not too much to claim, therefore, that the thorough and persistent spraying of our apple trees, grape vines and certain other plants, will not only repay us in increased crops of improved quality the current season, but it will certainly increase the hardiness of the plants and render them better able to endure the vicissitudes of this trying climate. Experiments already offer hope that we may be able, through intelligent spraying, to successfully grow the European grape and English gooseberry in parts of our country where their culture is now rendered impossible by their liability to fungus diseases.

The prevention of insect ravages by spraying may be expected to work out the same indirect benefits as that of fungus diseases. We may also hope to lessen the virulence of future attacks of both insects and fungi by thorough present applications, just as we lessen the number of noxious weeds in future years by preventing present seedage. It has been found that

the attacks of the codling moth have become less serious than formerly in orchards that have been sprayed for several consecutive seasons.

If, as sometimes happens, our work of spraying fails to work all the immediate benefits we have hoped for, we may gain some consolation by the reflection that a part of the benefit may be realized the following year.

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## FLOWERING AND FERTILIZATION OF THE NATIVE PLUM.

Prof. E. S. Goff, Madison.

The uncertainty of fruitage in our native plums is well known by all who have attempted their culture. With most other fruits, a full bloom is usually followed by at least a fair setting of fruit. But with the native plums (I use the plural number because there are several species), bloom on the average tree is no certain indication that any fruit will form. We all know that many contingencies lie between a crop of well-fertilized ovaries on the plum tree and the delicious, mature fruit that attracts the eye and tempts the palate, but it is not my present purpose to speak of these, but rather to confine myself to contingencies that lie between the opening of the petals and the fertilization of the ovary. In this work I shall consider some of the reasons for the frequent failures in fertilization that have been suggested by others, supplemented so far as possible, by personal observation upon our own plum trees.

First, I may mention that in the varieties of plum of which I have examined the flowers, thirty-four in number, those belonging to our native species have decidedly more slender styles and smaller stigmas than those of the European plum, *Prunus domestica*, and I have observed this season that the

slender styles of our native varieties were more often broken or bent by driving rain than those of the domestica varieties. I should add, however, that I have examined but few of the domestica varieties in this particular. I infer that a severe rain storm during full bloom would work much greater harm to our native than to the European varieties.

A lack of pollen has sometimes been ascribed as a reason for infertility in our native plums. I cannot say that this never occurs, but all of the varieties growing at our experiment station, that bloomed this season, appeared to produce abundant pollen. When we consider that all of the anthers in the same flower rarely mature at the same time, and that the flowers on a given tree usually have a range of some days in their time of opening, it hardly seems probable that, where abundant pollen is produced, a total failure in pollination could result, even in unfavorable weather. I suspect that a rain storm occurring at full bloom, if not sufficiently severe to destroy the styles, would promote self pollination, for, as I have observed, rain tends to discolor the stamens, and often brings the anthers directly in contact with the stigma.

Imperfect pistils or an absence of pistils, has also been offered as a reason for infertility in native plums. Unquestionably this defect sometimes occurs. Prof. Bailey mentions \* a wild plum tree of his acquaintance that bears flowers without pistils, also that in the season of 1892, but about one flower in twelve of the Newman plum at Cornell university had a perfect pistil. I have made careful observation on this point in our own plum trees the present season and find a conspicuous difference in varieties as to the percentage of perfect pistils. I have tabulated the results of my observations, as follows:

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\* Bull. Cornell University Experiment Station.

Variety.	Number of flowers examined.	Number of perfect pistils.	Number of flowers without pistils.	Number of abortive pistils.	Number of pistils that had been destroyed.	Per cent of perfect pistils.
De Soto .....	116	107	1	3	5	92.
Forest Garden .....	109	106	0	0	3	97.
Forest Rose .....	113	108	0	2	3	95.
Homestead .....	59	49	9	1	0	81.
Le Duc .....	116	87	5	12	12	75.
Maquoketa .....	134	127	2	1	4	95.
Mariana .....	247	154	62	20	11	62.
Miner .....	105	101	1	0	3	96.
Moore's Arctic .....	127	121	3	1	2	95.
Moreman .....	104	30	78	1	0	29.
Ocheda .....	113	104	3	4	2	92.
Pottawattamie .....	104	100	0	3	1	96.
Quaker .....	106	100	2	3	1	94.
Robinson .....	104	65	37	1	1	62.5
Seedling from German prune .....	101	84	1	8	8	83.
Seedling No. 3—Gale .....	105	87	8	9	1	83.
Seedling from Sparta .....	106	72	4	18	12	68.
Smith's Red .....	122	112	3	3	4	92.
White Nicholas .....	100	100	0	0	0	100.
Wild Goose .....	123	76	35	.....	12	62.
Wolf .....	108	98	10	0	0	91.
Wyant .....	115	97	15	3	0	84.

I endeavored to ascertain if the proportion of the flowers that formed fruits in the different varieties corresponds with the percentage of perfect flowers. At first, I concluded that there was such a correspondence. The number of embryo fruits that appeared after the falling of the petals was unquestionably greater as compared with the number of blossoms, on the trees that had a high percentage of perfect flowers than on those in which the percentage of perfect flowers was low. But a new factor entered here that I do not understand. After the miniature plums had attained the size of an apple seed, or a little larger, a large proportion of them dropped from some of the trees that had shown a high percentage of perfect flowers. This shows that another influence affected the fertilization beside the question of perfect pistils. We had a cold period about this time, and it is possible, as Mr. R. P. Speer has suggested, \* that the low temperature pre-

\*Bull. No. 4, Iowa Agricultural Experiment Station.

vented the formation of the pollen tube. I observed also, that the after failure of the fruits was sometimes most marked in varieties that apparently possessed the most robust pistils. The White Nicholas variety, a Russian plum of the domestica species was the only variety I examined that showed 100 per cent. of perfect pistils, and I noted that the styles and stigmas of this variety were especially large, yet the number of fruits on this tree at the present time is very small, and the trouble is not from curculio. The miniature fruits turned yellow and dropped when about the size of an apple seed.

It is of interest, that of the varieties that I have examined, the four showing the smallest percentage of perfect flowers, viz., Moreman, Wild Goose, Robinson and Mariana, are all of some other species than *Prunus Americana*, also, that the varieties of the European plum that I have examined have all shown a high percentage of perfect flowers. We have several varieties of the latter species that failed to bloom this year, possibly because their flower buds were destroyed by cold.

From the testimony of others, I conclude that the percentage of imperfect flowers in a given variety often varies in different seasons. Prof. Bailey, in the bulletin above cited, says, "Imperfect flowers are occasionally observed, but they are apparently peculiarities of individual trees or particular seasons. The observations of Mr. O. M. Lord, of Minnesota City, Minn., are especially valuable on this point. Mr. Lord wrote me under date of May 24, 1894, "I began to study plum blossoms a few years ago, to see if I could get any light on the non-bearing habits of some varieties, and also to see if sufficient data could be gathered to show that any varieties are practically dioecious. \* \* \* I have found some groups entirely without pistils for a series of years, and last year I was surprised to find no pistils on my Gaylord trees that had never refused to bear before. They are loaded again this year." In the last report of the Minnesota Horticultural Society, Mr. Lord observes further, "Nearly all native plums produce an abundance of pollen, but some varieties are more or less deficient in stigmas every year, and some years are entirely deficient. This



habit is, I believe, peculiar to some varieties, not only when indigenous or growing wild, but when transferred to other localities, the habit is intensified so as to produce imperfect stigmas, or perhaps none at all. \* \* \* I have a group of trees that blossom profusely every year that never has produced any fruit, growing within a few rods of another group that has borne nearly every year for forty years. The blossoms of the first named group bear no stigmas, many of the blossoms not even having the rudiments of one. But I was greatly surprised this year to find no stigmas in the blossoms of some kinds that have borne fruit for several years in succession until this year, from which I conclude that there is a wide field in this direction for experiment and investigation."

Certain varieties, as the Wild Goose and Mariana, that are productive farther south, are rarely fertile in Wisconsin, and these showed a low percentage of perfect flowers in our plum orchard. This suggests that the failure of pistils may be due, at least in some varieties, to severity of climate.

I think it possible that poverty of the soil and over-bearing may, in some cases, cause sterility in plum blossoms. Mr. Waite, in his investigation of the fertilization of pear flowers, came to the conclusion that this is true in the pear. It is also possible that partial destruction of the foliage by insects or fungi during the growing season, may sometimes cause sterility of the flowers, for while a checking of growth in a moderate degree doubtless tends to the production of flower buds, an excessive check might so impoverish the tree that there would not be sufficient stored food to develop fruit.

In conclusion, I wish to call your attention to the advantages that are likely to result from hybrids between the hardier varieties of the European plum, and the more prolific varieties of *Prunus Americana*. If we can combine the robust pistils of the former species with the cold-enduring qualities of the latter, we may hope for annual crops. Of the European varieties in our own plum orchard, Moore's Arctic appears to be the hardiest, and of the *Americana* sorts, Forest Garden is now carrying the largest crop.

## DISCUSSION.

Warren Gray—Have you in that list, you mentioned, the Miner plum?

Prof. Goff—I had, and it is a shy bearing tree.

W. T. Cass—I have forty or fifty De Soto plum trees that have been blooming profusely for three or four years and they failed to fruit. I had intended to try spraying but did not do it. This year they are loaded with fruit.

Secretary—I have taken some notes from Iowa and Minnesota meetings. Each society had quite an interesting discussion at its meetings on this question. One man claimed that heavy, washing rains prevented pollenization.

Prof. Goff—I am inclined to think it is not so. There is a great deal of pollen in the blossoms and it would take a great deal of rain to wash it all out. In New York we set trees fifteen feet apart.

Geo. J. Kellogg—I think the plum crop this year is owing to the very favorable weather at the time of blooming.

A. S. Crooker—I sprayed my plum trees last year and destroyed the aphis, and the result was a good crop.

Prof. Goff—You were extremely successful if you destroyed the aphis with one spraying.

Geo. J. Kellogg—If we can simplify the spraying apparatus and the formula so the farmer can use it, we will do a good thing.

Prof. Goff—I only recommended the testing of the formula because you might get an excess of lime which would clog your spraying apparatus. If we make the test we will get rid of the excess of lime.

Geo. J. Kellogg—What proportion of the drugs do you have in the mixture, and how much do you stir it up?

A. L. Hatch—I have had a good deal of experience along the line you have been talking about. I use this formula: Four pounds blue vitriol, three pounds lime, fifty gallons water. Milwaukee lime will dissolve into a perfect paste, but the lime obtained from the southwestern part of the state will not; consequently it will pay you to get Milwaukee lime.

If you want to make a good Bordeaux mixture, put copper sulphate in the barrel first. Have the lime dissolved and stir it in and do not stop agitating until it is all sprayed out. If you add Paris green, add it last, just before you begin to spray. The stirring is very important; if you do not stir it will become sticky. It is absolutely necessary to use the milk of lime. Paris green settles very rapidly on account of its great specific gravity. When I spray I have a driver and I attend to the spraying apparatus. Before I begin to spray I turn the nozzle into the mixture so that it will be thoroughly mixed. I attach my hose to an eight foot fish pole. I get a pressure of fifty to seventy-five pounds to the inch.

Q.—Do you use hot or cold water in slacking your lime?

A. L. Hatch—If you use good lime you will not need hot water to slack it.

Prof. Goff—It is absolutely necessary for the ingredients to be put together cold because it will make an entirely different mixture if you do not.

A. L. Hatch—There are reasons why you should not spray in full bloom. You cannot accomplish the objects desired. I would wait until the calyx is formed. You can spray for scab before growth has commenced. I have sprayed before there was any growth whatever. Prof. Goff had no difficulty in finding, under the microscope, the spores of apple fungus. Spraying is preventive and not remedial. For the apple aphid you will need to begin before there is much growth, because if you wait until they get under the scale you will not reach them.

Adjourned.

Friday P. M.

Meeting held in fruit room.

## ADORNMENT OF HOME GROUNDS.

Fred Cranefield, Madison.

A few years ago a majority of the home grounds of farmers and fruit growers were adorned throughout the season by a great variety of native ornamentals, such as pig-weed, dandelion, etc. The trees and shrubs most commonly grown were wild crab apples, plums and flowering currants.

The height of improvement was thought to be reached if sufficient space was kept clear for a couple of flower beds in which grew a few of the old-time annuals. Lawn mowers were unknown or else thought to be luxuries to be indulged in only by city folks.

The situation has changed somewhat of late, and the more progressive men now realize that it pays to take care of the front yard, as well as the barn-yard and the remainder of the farm. There is still a wide field for improvement. Fully ninety per cent. of the home grounds in this state are still sadly neglected. Their owners are interested in such problems as, How to produce the greatest amount of fat from the least amount of grain or hay. If fruit growers, they are on a mad chase after the latest variety of strawberry—ten for a quart—or else on a still hunt for that elusive, delusive, iron-clad that is still hidden away in some far corner of Siberia. Amidst all this excitement trees and shrubs and flowering plants are forgotten. Nevertheless, it pays to stop for a moment and view the general appearance of things from the road.

I direct these few remarks to the owners of grounds in the country and villages. I will not attempt in so short a time to give all the details of planting or tell how every flowering plant may be grown, but only to mention a few things that may be done at the expense of a small amount of time and money.

I will suppose that the grounds have received little or no care for many seasons past. Do not wait until next spring to begin, but begin at once. Begin in the middle of the road. Take along a scythe and cut the weeds and tall grass that I am

sure are growing there. Next compute the cost of removing the more or less delapidated fence, and, if you *must have* a fence, of replacing it with one of light wire, other than barbed wire.

Next look long and critically at the grounds, and determine what improvements may be made by planting, or removing something already planted. To aid in this permit me to offer a few suggestions. Landscape gardening is an art, and a natural gift for the work and long practice are necessary in order to become skillful. Yet in this as in every art there are a few general principles, or rules, that may not be overlooked. From many I select two important rules:

First: "Preserve in one or more places, according to the size and form of the grounds, the greatest length of unbroken lawn that the space will admit of." In other words, arrange the trees and shrubs in groups, leaving many open spaces, rather than plant indiscriminately wherever there may be an open space. By the latter method you will succeed, in a few years, in growing an excellent forest, exactly the thing you do not desire.

Second: "Plant between radiating lines from the house to the outside of the lot, so as to open lines of view from the house to the street, and from the street to the house and to points of interest beyond." In fewer words, arrange all with reference to surrounding objects. This fact is almost always overlooked by the planter. He buys a tree or shrub and plants it where he thinks it will do the most good, generally in the exact center of the largest open space—the identical place that should be left clear to give a view of the house or other objects. The tree that you plant may become a beautiful object but it will not be viewed alone, but is a part of the whole and in connection with others. Plant it, then, with reference to them. It is generally possible to make it serve a double purpose.

Consider the trees and shrubs as individuals. Learn the habit of growth and size at maturity of each, and enquire what space each will occupy, not as they come from the nursery, but twenty or forty years from then. Remember that one full

grown oak, elm or maple will cover with its branches over 4,000 square feet. Do not over-plant. Last, but not least, arrange for flower beds, but consider them as adjuncts to the work rather than a necessary part. Consider them as ornaments, as jewels, used to brighten and set off the whole. Do not, however, make a flower garden of the front yard. There is another and a better place for that. It may seem strange to you that one who is a grower of flowers should argue their limited use in the adornment of your grounds, yet my observations in this respect have convinced me that it is best not to attempt too much in this line for display. Often the proper location for the beds is lacking. Flowers require sunshine and moisture for their proper development—two things that are apt to be lacking among trees.

If you have straight drives and walks the flower beds may be laid out as squares or parallelograms. If the lines of both are curved, lay out ovals, circles or other forms with curved outlines. Dig deep and remove the soil if poor, and replace with compost and garden soil mixed with sand.

These are a few words about how to arrange and plant. I cannot at this time give a list of what is desirable to plant. It is at best a matter of individual choice.

In any nurseryman's catalogue will be found all the information desired. I will give as my own opinion the following: If you can add but one tree let it be a cut leaf weeping birch, if but one shrub, Van Houten's spirea, if but one bed of flowers, plant dwarf French cannas. The birch will be conspicuous both winter and summer. The spirea will be a mass of white bloom for weeks in the spring, and the cannas, if started early, will bloom from June to November. The bulbs may then be lifted, dried and preserved for another year.

Hybrid perpetual roses, although requiring more attention than many other plants, will be beautiful in June, and if cut back carefully after blooming will give another crop in August or September.

I repeat, begin at once. Begin by keeping down the weeds and grass and the yard clear of sticks, etc. Trim up ill-shapen trees, and remove others if necessary. Next Septem-

ber prepare the flower beds as advised, and plant in them Holland bulbs, tulips, hyacinths, or crocus. Good tulip bulbs may be purchased for \$2.50 per hundred. Plant the bulbs four inches deep, and before hard frost comes protect with a heavy covering of straw or manure. Uncover gradually in the spring, and as a result you will have a splendid show of flowers for weeks before the time arrives to plant the summer bloomers.

Before winter begins you may have planned for planting. Then is an excellent time to gain the desired information about varieties and prices. During the latter days of winter and early days of spring, the voluble, gentle-mannered nursery agent may call on you. Treat him gently, and if he seems hungry give him his dinner and send him on. You will be able to purchase your stock cheaper direct from the grower.

To conclude: I urge you to improve and ornament your home. It will pay you to do so. Fifty dollars at six per cent. will yield in five years fifteen dollars interest. The same amount invested in the improvement of your front yard will, in an equal time, increase the value of your place not tens, but hundreds, of dollars.

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#### DISCUSSION.

A. L. Hatch—I want to commend what was said about the cut leaf birch and in fact everything in the paper. There is an impression that when a man gives a road through his farm he gives that land to the public, and that if anything in the line of improvement is made it must be done by the public. I think if the man who owns the land will cultivate up to the track, and remove the fence if possible, he will find that the improvement will pay him well. I have annually cut from two to three loads of hay from the side of the road, and the public has had a better road besides. I was recently in a city of two to three thousand inhabitants. I saw a man who had put out

a large number of shade trees inside of his enclosure. I asked him why he did not put them outside, and he replied that he had never thought of it, but it would have been a great improvement to the street and also to his premises. Prof. Goff says, "Along the north side of this city they have made considerable improvement in the way of putting out shrubbery along the side of the street and they have made it very inviting, with their grass plats clear up to the street, and they do not put up signs which say, 'Keep out.'" When you go through the streets of a city you see a long line of wall, or a fence, and it looks as if you were shut out; it does not look as if you were welcome. Now let us lend our influence as a Society to bring about a change, and instead of fenced streets bordered with unsightly weeds and a place to pile up the brush and old rubbish, let us have nice, well-kept boulevards and shady streets bordered with grass.

Geo. J. Kellogg—I wish the gentleman had gone a little further and recommended a list of roses and shrubs.

Fred Cranefield—It was suggested that I make my paper brief. I had thought of making a list to present to you, and then I afterwards thought it would be only my list and only suitable for this locality. I will now add to the shrubs I mentioned in my paper, the Hydrangea; any of the Altheas are desirable.

Secretary—It is well known that I am a crank on apple trees. I have been putting out apple trees along the road. I put up a barb wire to protect them for I have found that horses respect a wire fence if it has barbs on it. Mr. Hoxie wanted a tree for his front yard and I told him to put out a Florence crab; it is a handsome tree. Many are putting out fruit trees along the road side. Mr. Barnes has put out Whitney's No. 20 crabs and many others are doing the same.

Fred Cranefield—I would say, plant something that will stay. Apple trees may die out and you will have nothing left, while if you plant elm or birch you will have something beautiful that will stand. When we plant a tree for the lawn we want something that is ornamental and long-lived as well.



## THEORY AND PRACTICE IN HORTICULTURE.

O. M. Taylor, Madison.

Go where we will, among all classes, in every occupation, we find the potent factors "theory" and "practice" more or less developed. The one may be in its elementary state, the other far in advance of its companion.

These children "how" and "why" are sometimes abused and even separated when the very foundation of success often lies in their union; each responds to the other and when carefully nurtured they bring much profit to their owner.

With a desire to encourage those already working along these lines in horticulture and perhaps interest some hitherto indifferent, I give my brief experience, knowing that scores of Wisconsin youth are in the harness pressing forward as they never did before, seeing the possibilities and advantages which their state offers.

Coming 800 miles from an eastern state with a population of nearly 6,000,000, where the natural advantages for horticulture are, perhaps, superior, I can see no reason why this state should not successfully compete with her sisters. While the climatic condition of Wisconsin requires greater care to bring fruit to maturity, the small amount of competition and nearness to profitable markets offer great inducements to the intelligent, industrious fruit grower, and the time is now ripe for the ambitious Wisconsin boy to study the situation and to place himself in touch with horticultural interests.

A proper equipment is the first requisite; and what is better than a combination of theory and practice? The former and much of the latter can now be learned in the short course in agriculture at our state university.

Through the kindness of the legislature, a new horticultural building has been erected at a cost of about \$25,000, equalled in equipment by few, if any, states. The important factors of soil characteristics, moisture, heat, plant growth and decay, these and many others are there discussed. The lecture is given to the class who pass at once to laboratory, garden or

green house, applying in a practical way the principles just laid down. I trust that every member of this Society, who has not done so, will, before leaving Madison, avail himself of the opportunity to visit this building and carry away a new inspiration and love for the work.

After the first winter's term in this school, I would suggest a position for the summer on the farm of some thoroughly practical horticulturist. It was my pleasure to do this on one of the best conducted and most successful fruit farms in Wisconsin. It afforded an opportunity to study details which are so necessary to bring theories to perfection.

There are many little things which cannot be learned in any school; no amount of book study will bring this knowledge. On such a farm all theories were working theories, accomplishing the most in the best and quickest way.

It is a good plan to carry a note book every day and to write down the progress of the work, condition of the fruit, together with any doubtful points to be brought up for discussion during the next winter's study in the short course. This is invaluable, for the student is on vantage ground and can consider the past season's work, discover how it was in keeping with requirements of plant life, and perhaps learn where a different plan should have been followed.

Returning to the same farm for the second season's work, the student is ready to suggest, as well as to continue, study and at the close of two years he should be fitted to begin his own business in a small way. No longer can the thoughtless, indifferent worker keep pace with present progress. Brains have always brought a premium and will always lead the van.

No one can afford to engage in this business without preparation. Years are spent in the study of law and science before one is competent to stand before the world prepared for the work of life. Why should a two years' course in the theory and practice of horticulture be too long, or not necessary? Mistakes avoided mean many dollars on the credit side. Experience is a dear teacher but not to him who is able to learn the lesson from others.

Horticulture is at the front, calling for young men to come over and help with brain and muscle, but she looks with dis-

trust on those unwilling or too careless to feed her children "how" and "why." Yet they are beginning to rally. You need but enter the horticultural department of our agricultural college next winter to see scores of eager faces applying themselves to their work with an interest never to be forgotten, while in many parts of the state, in the papers, at agricultural gatherings, are seen those who have already received the benefits of the union of theory and practice, and who are ready to tell how much they have been helped and to urge others to drink of the same fountain.

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Geo. J. Kellogg introduced the following resolution:

*Resolved*, That the secretary of this Society be authorized to visit new fruits from time to time and report to the Society at an expense not to exceed fifty dollars per year.

Secretary—I think we ought to launch out and do missionary work of this kind. We do certainly need to take some steps to work up an interest in our state. Minnesota has been wide awake and has increased her membership largely; the society pays Mr. Dartt for conducting a tree station 800 dollars, its secretary 600 dollars, and furnishes him with all the help he needs.

Resolution adopted without discussion.

B. F. Adams was called for and said: "I am not prepared to make any extended remarks to you this afternoon, but I think I can say to you that we have made some progress in the last fifty years. Forty-eight years ago I came into the state; there are some of our members who preceded me. Of the disappointments and the success you all know. We have demonstrated that we can raise small fruit successfully and abundantly. We can also raise that king of fruits, the apple, and we have men who have put out apple trees for a commercial purpose who are making money, while on the other hand there has been, I should say, about \$50,000 worth of trees put out in this county that will never amount to anything. The time will come when we shall have apples abundantly."

A. L. Hatch—Mr. Adams, what, in your opinion from your long years of experience, are the apples that would be profitable in Dane county for commercial purposes?

B. F. Adams—I would say the Fameuse. The Tallman Sweet is still being fruited in this county; it does not bear every year. I have never noticed much blight among our apples in this county. The McMahon is promising, as is also the Wealthy and the Northwestern Greening. I have never turned my attention to orcharding. I have raised small fruits. Quite a variety of grapes are grown with protection—Worden, Concord, Moore's Early, Moore's Diamond and Delaware. The low price is a drawback to grape growing. When dealers ship in grapes by the carload and sell them for four and five cents per pound, it discourages people from planting very largely. If we would progress as a Society we must endeavor to find out those varieties of raspberries and blackberries that can be successfully grown without protection. I think I have found it in the raspberry, the Marlborough. I have never found a blackberry except one of the wild variety; I think Mr. Hatch sent it to me. I have three rows of it; it is perfectly hardy and the only one that will stand for a period of ten years or more. It is small and that might hurt it for a market berry. I call it the Hatch berry.

Geo. J. Kellogg—Mr. President, I call for the report of the action taken by the committee, on trial stations, that held a special meeting at the beginning of this session.

The following report was read and adopted:

#### MEETING OF COMMITTEE ON TRIAL STATIONS.

Prof. E. S. Goff—I have been convinced, for more than a year, that we ought to do more work on trial stations, or less. We are not doing what we ought to do. A proposition has been made for a new station and that is one of the questions for us to decide.

A. D. Barnes—I believe we need more stations. There is a portion of the state, in the northern part, that needs a sta-

tion or stations. I have had correspondence with people living in Lincoln, Marathon and some of the northern counties, and I think a station up there would do considerable good. I believe we might discontinue one of our stations and establish one there that would be of benefit to the whole state.

Geo. J. Kellogg—I believe we have individuals that are pushing the work in different portions of the state that will do more for us than a station can. I believe some of these men are far ahead of our stations now, and I believe we do not want that experimental station in the northern part of the state.

A. D. Barnes—I believe Mr. Kellogg's points are well taken, but I believe there are men who need the help the station would give them; they need encouragement; they need some lessons, something to go by.

B. S. Hoxie—I believe there is a mistaken notion among the people with regard to these stations. I think most of the people, or some of them, at least, think our stations are experiment stations while they are only trial stations. We call the one at Madison an experimental station; the others are merely for trial. Now, what have we published as the result of our stations that are of benefit to the farmers or to any one who wishes to grow berries? The question is, Do we want more, or less, trial stations? Unless we can manage to get reports of these trial stations before the people so they will be benefited by them, it is of no use to have more than one station. I am glad these questions have come up in full committee. If it is found that a certain variety is worthless in some localities, pull it up and try another. Let us keep on trying until we do find a worthy variety and not continue trying those varieties that do not succeed.

A. D. Barnes—I have been benefited by trial stations, by the report from Mr. Hatch.

B. S. Hoxie—Those reports you speak of were from Mr. Hatch's own farm and were carried on for the benefit of the department at Washington.

Prof. E. S. Goff—So far as the large fruits are concerned we have not had time to test them and to learn about them,

and so far as the small fruits are concerned I am less and less in favor of trial stations for small fruits. There is a man living near this city, Mr. Post, who is growing the Jessie strawberry; he is successful with that variety. On the university farm the Jessie is a failure, in one mile from here it is a success. We fertilize highly; he none, or scarcely none, at all.

R. J. Coe—My impression is, it would be a good thing to drop the work in trial stations on small fruits, but I am in favor of continuing the work so far as a trial of trees is concerned.

A. D. Barnes—I move that we discontinue the experiments with small fruits at our trial stations but continue the work with relation to trees.

Geo. J. Kellogg—I had hoped and believed that the best work could be done in the stations with small fruits and that it would be a work that would be of great advantage to the state. I do not believe any good can be done with experiments on trees at the station at Sparta, and I would move as a substitute to Mr. Barnes' motion, that we discontinue our trial stations.

A. L. Hatch—With regard to the work done at the station on my place it could not be done under my personal supervision but must be delegated to others. I could not describe to you the forty kinds of strawberries growing there. I believe the people will look to such men as Mr. Coe and will rely on what they tell them, instead of us at the trial stations, but we can save the trees and can show the results. With the berries it is only a matter of soil and location and "get there if you can." For my part, I would be glad to have all of the small fruits swept off. I do not really believe I would want it so sweeping either as to say "all small fruits," because there is the gooseberry that is showing us there is some legitimate work for us to do; the English say, "Shade is beneficial to the successful growing of the gooseberry." Spraying is proving some things to us, therefore I think we ought to retain some of the small fruits. We have, in Wisconsin, a variety of climates; we must consider climatic conditions. While we had apples here an inch in diameter, they were only in

blossom at Sturgeon Bay, and that shows us that we ought not to try to raise winter apples in Richland county. We raise nice early apples there. It is possible that some of the old varieties have been neglected. We might, profitably, perhaps, take some of the old varieties and experiment with them. One thing we must remember, we must study and understand our climate better.

R. J. Coe—There is a work in the gooseberry line that the general grower will not take up. We have been experimenting with some gooseberries that are wonderful. I think we, as horticulturists, have something to do along that line.

A. D. Barnes—I think gooseberries and currants can be experimented with profitably to the state, and I think we need more stations.

Motion to discontinue the trial of strawberries, raspberries and blackberries was carried. Prof. Goff read a resolution, that was pending from the annual meeting, on forming a new trial station. Geo. J. Kellogg moved its adoption; amended by B. S. Hoxie that it shall be under the entire control of the State Society as are the other stations. Carried as amended.

B. S. Hoxie moved the expense of the station be left for the committee on trial stations to determine. Carried.

Prof. E. S. Goff—Trial station No. — has not followed the contract made with our trial stations in one respect. The contract specifies that no manager of a station shall use any of the plants for himself, and I am informed that this has been done and the contract been violated. What shall be the penalty for such violation?

A. D. Barnes—I move that on account of a violation of the contract station No. — be discontinued.

B. S. Hoxie—It would be a very rash proceeding on our part to discontinue this station which is for the benefit of the state and not for individual benefit. I am not in favor of such action.

Geo. J. Kellogg—I am in favor of discontinuing that station. The small fruits are the varieties that have been disseminated. We have voted to discontinue small fruits and

I am in favor of discontinuing the station on general principles. I would like to have the clause on violation stricken out.

A. L. Hatch—If we discontinue a station we lose the negative demonstration. We would have to remove the trees and therefore we would lose the benefit of the experiment on apples.

Prof. E. S. Goff—I learned one of the best lessons I ever had on apples at the Sparta station.

The vote was taken, and the motion to discontinue station No. — was lost.

B. S. Hoxie—I move that for a violation of the contract for trial stations that the services of the manager and use of the land be forfeited for the year in which such violation is made. Carried.

Q.—Shall we establish trial stations on the grounds of nurserymen?

R. J. Coe—I think nurserymen would be closer observers and would make trials that would be of more value to the state than others would.

B. S. Hoxie—I move that this subject be left with the committee for future action, for this reason, there are nurserymen who would work for the interest of the state and who would also work for the benefit of the state. We have honest nurserymen who could take the work. Carried.

Prof. E. S. Goff—How shall we decide what to plant?

A. L. Hatch—I have had some difficulty in determining in my station and I think the matter should be left entirely with you.

Prof. E. S. Goff—I make a list of the varieties we shall grow at Madison; there are reasons why it is not just what is needed for the stations. I cannot do much towards making out a list until the catalogues are out. The different growers know of a list they would like to have tried in the state and I would like to have their help.

B. S. Hoxie—I think we have got along nicely, so far, with the list as Prof. Goff has recommended, and I think we are satisfied to have it left with him. I move that each member



of the committee make out a list of such varieties as he thinks desirable for trial and send it to Prof. Goff. Carried.

Committee arose.

Prof. Goff visited Weyauwega trial station and reported as follows:

Visited Weyauwega trial station June 9th. Found the crop of small fruits nearly a failure from drouth last season and this spring.

The orchard trees had been pruned this spring, but the pruning was not in all cases as thorough as I should have done it. Of the apples on the trial ground, Wealthy, Palmer, Yellow Transparent, Duchess, Baraboo, Gold Drop, Longfield, Arabian and Good Peasant gave promise of a good crop. Fall Pippin, Newell, McMahan, Duchess No. 2 (Smith's), Glass Green, Barloff, Fameuse, Noble's Winter, Hartshorn and Duchess No. 6 (Patten) had more or less fruit.

Of the plums, Mariana and Green Gage promised a full crop, and showed little injury from the curculio; the Rockford promised some fruit; the crop of the Cheney was totally destroyed by the disease known as "plum pockets," and the Wild Goose, although it bloomed full, bore very little fruit. Mr. Harden called my attention to the fact that the trees surrounded with straw bore less fruit than those of the same variety not thus protected. This was true in the great majority of cases. He also stated that the protected trees did not blossom as a rule, and that this fact was noticeable in looking over the orchard.

## REPORT OF COMMITTEE ON RESOLUTIONS.

*Whereas*, One of the former members of our Society and one of the pioneer horticulturists of the state has been removed by death,

*Resolved*, That we as a Society realize that in the death of O. C. Cook, of Oconto, we have lost a useful and valuable member, and we hereby extend to his family our heartfelt sympathy in their great bereavement.

*Resolved*, That this Society wishing to do all in its power to advance the interests of horticulture in this state, and seeing the need of more trial stations for the purpose of testing varieties and methods, we do hereby agree to the following:

If any county or local horticultural society will unite with us in establishing a trial station in their community, we will pay one-half of the said station's annual expenses, providing, said one-half shall not exceed the sum of thirty-five dollars for any station in any one year; said station to be under the entire control of the State Society.

*Resolved*, That the thanks of this Society be given to the press of Madison for timely notices of our meetings and good reports of our proceedings.

*Resolved*, That we also tender our thanks to the superintendent of public property for the use of the senate and assembly chambers and the room for the fruits and flowers exhibited at this meeting.

Vie H. Campbell,

D. C. Converse,

A. L. Hatch,

*Committee on Resolutions.*

Adopted.

Convention adjourned sine die.

REPORT  
OF THE  
TRANSACTIONS OF 25TH ANNUAL MEETING  
OF THE  
*WISCONSIN STATE HORTICULTURAL SOCIETY*

Held in Madison, February 5, 6, 7, 8, 1895.

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Convention called to order by President L. G. Kellogg, and the following committees were appointed:

*Program.*—D. C. Converse, Geo. J. Kellogg, R. J. Coe.

*Awards.*—J. C. Plumb, A. D. Barnes, C. E. Tobey.

President—I am pleased to see so many of our members present on the first morning of our convention. The attendance speaks well for your interest in horticulture. I hope we shall have a pleasant and profitable session.

The credentials of A. L. Collman, ex-president of Iowa Horticultural Society; Elmer M. Reeves, Iowa; M. Pierce, Minnesota State Horticultural Society, were presented; they were introduced to the convention and were made members for one year.

## REPORT OF COMMITTEE ON OBSERVATION.

OBSERVATIONS FOR EAU CLAIRE AND VICINITY FOR  
1894.

J. F. Case, Eau Claire.

It has been an unusual and strange season, as well as a very hard one, for fruit growers in our vicinity. The spring opened very encouragingly but we had some very hard frosts that damaged strawberries and early vegetables. I find by my memoranda that on the first day of May the mercury was up to 72 degrees and cloudy; the ninth was cold and clear, with mercury down to 35 degrees. Found first strawberry blossom the seventh on the Michel. Then we had another change and the weather was very warm and wet to the 18th, then a heavy frost which damaged us very much; from the 18th to the 20th it was very warm. June 1st picked the first strawberry. On June 23d came the first picking of raspberries, the Marlboro. The frost seemed to be in spots; in some places everything would be killed and perhaps ten rods from there nothing would be touched. I saw hills of beans that every stalk in the hill, except one, would be killed, and the next hill would show only one killed.

In some patches the strawberries were nearly all killed, and in others they were not damaged much. I noticed that in those patches where the covering remained they were damaged the most; where the ground sloped toward the south and east the berries fared the best. I think it was due to the fact that the ground received the direct rays of the sun and became so warm that it resisted and overcame the cold to such a degree that the frost could not form. The frost did not damage raspberries, blackberries, grapes nor plums.

Strawberries seemed to be barren. I noticed in my Bubach No. 5, in a space of ten or twelve feet, there would be no peduncles and of course no blossoms nor berries, while the plants were as large and healthy as any I ever saw. Then,

again, for perhaps the same space there would be quantities of nice, large fruit. Some of the other varieties were in the same condition—the Eureka, the Jersey Queen.

Our worst trouble was the extreme heat of the sun. I saw strawberries cooked on the vines when the ground under them was wet. I have waterworks and I kept the ground wet but it did not prevent the fruit from cooking on the vines; raspberries were also cooked.

The drouth began the first of August and we had no rain to do any good until in October. We had very hot weather; for a number of days the mercury ranged from 96 degrees to 106 degrees in the shade. Everything was damaged, while some were ruined entirely.

Irrigation seemed to benefit some things while it was not a benefit to others. It did not help cabbages, or such vegetables much. I saw a patch of cabbages that were kept irrigated right through the drouth, but it did not pay for the extra labor; the water was run between the rows in ditches; the ground was kept wet but the cabbages did not head much, they became wormy and lousy and when the rain came the heads began to grow again; then they burned so they were good for nothing but kraut and they were not worth much for that. Perhaps if they had been sprayed once a week they would have been better. Irrigation helped the small fruit, shrubbery and fruit trees, while those not irrigated were found to be dead in large numbers when the drouth was over. A few put out new leaves and made a new growth.

Some strawberry patches that were in good condition when picking was finished, died out; this was more especially where they were not thoroughly cultivated. Some new patches that were set last spring are also dead.

Slip-shod work did not amount to much last season.

Plums and grapes ripened prematurely. Concord grapes ripened at the same time of the Janesville.

The best strawberries to stand the drouth were Lady Rusk, Bell, Greenville, Jersey Queen; the poorest was the Warfield; it will wilt any time in twenty-four hours of sunny weather.

I do not see any reason to be discouraged. It looks now as if we might have a pretty good crop of fruit next season. If

our crop is small there is a greater demand for it and we get better prices, so it comes out all right in the end. The past season has taught good lessons to a great many fruit growers; it has shown the necessity of thorough cultivation, and that it is necessary to keep the cultivator running in dry weather. It is to be hoped they will profit by it. The fall has been so favorable and prospects are so good now, I think, if they continue as good, we may have a better crop of fruit next season than we had last season.

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### OBSERVATIONS AT WEYAUWEGA.

Fred Hardin.

We have to report again another season of severe drouth in Waupaca county.

The spring opened early with cold and wet weather and continued so until about May 18th and 19th, when we had frosts and a cold week followed; then it grew warmer and vegetation looked promising; vegetable and flower gardens were planted and soon made a fine appearance. On June 6th there came a heavy frost which destroyed nearly everything and some places reported ice frozen to thickness of a window pane. As the strawberries had set fruit the frost did not seem to hurt them, but the hot and dry weather that followed this, and which continued through the rest of June and July, nearly ruined the small fruit crop. Some strawberry plantations on light soil were hardly worth picking. Raspberries were about one-half crop. Currants were very light. Blackberries we did not try to pick.

Cherries were also a light crop. Varieties are mostly Early Richmond and English Morello.

Apples were about one-fourth crop.

At the Waupaca county fair held at Weyauwega last September, about two hundred entries were made in the horticultural department and it was the finest show we ever had, of both standard and seedling apples and crabs.

The leading varieties of fruits are as follows:

Apples: Duchess, Haas, Talman Sweet, Walbridge, Wolf River, Snow, Tetofski and Wealthy.

Crabs: Transcendent, Hyslop and Whitney No. 20.

Cherries: Early Richmond, and English Morrello.

Currants: Victory and Long Bunch Holland.

Strawberries: Wilson, Crescent, Warfield and Michels Early.

Raspberries: Gregg, for black, Cuthbert and Marlboro, for red.

Blackberries: Ancient Briton.

Prices were good all through the berry season.

Strawberries sold from eight to twelve and one-half cents. Raspberries sold for ten cents per quart; currants and cherries sold for ten cents per quart; apples sold for from forty cents to \$1.25 per bushel; crabs, from twenty-five to seventy-five cents.

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## OBSERVATIONS AT FORT ATKINSON.

Ad Interim Report by D. C. Converse.

The winter of '93 and '94 was characterized by severe weather in the fore part and the very early opening of spring.

Commencing with February 25th, it continued getting warmer until March 3d, when frost was out sufficiently to admit of digging raspberry plants. Weather continued warm and every one thought that spring had come to stay. But March 24th we awoke to find the thermometer 10 degrees below zero.

The weather remained cold till March 28th, when we were visited by a hard snow storm. After two or three days the weather again moderated.

April 2d we commenced setting strawberries and pushed the work along as rapidly as possible.

The fine, wide rows, resulting from the early setting, show that the earlier the strawberry beds are set, the better, espe-

cially as dry weather is apt to follow, along the latter part of April and the first of May.

April 9th, a heavy rain and ice storm came, covering everything with a coating of ice and doing much damage by breaking limbs from trees. A great many attribute the partial failure of fruit to this storm.

On May 9th currant worms had put in an appearance and poisoning became necessary. One of our neighbors used hellebore and applied with a sprayer, but was obliged to go over the field several times.

We used Paris Green in solution and applied it with a sprinkler, going over the bushes but once.

Probably the method of applying had nothing to do with the difference in results, but my observation has been that Paris green is no more dangerous and at the same time is much more effectual than hellebore.

May 19th, 20th and 21st, we had very strong, cold winds, and new growth of currants and gooseberries were much injured.

Commenced picking strawberries June 5th, which was from a week to ten days earlier than usual. June 6th, a heavy frost did great damage to strawberries, potatoes, beans, corn and raspberries. The greatest damage was done to the last, the berries seeming to be in just the right stage and position to receive the effects.

Fully from 50 to 75 per cent. of the crop was cut off—some portions of the fields being swept clean.

Following the hard freeze came several days of dry weather, accompanied with cold winds, then as if to complete the ruin of the crop, dry weather with hot winds.

On June 12th and several days following, the mercury stood at 99 degrees in the shade.

This excessively hot and dry weather hastened the ripening of the strawberry crop and berries reached the lowest price of the season at 10 cents.

Leaf rollers came on now and helped to complete the work.

June 16th and 17th brought us a light rain and vegetation revived a little.



Had first raspberry picking June 25th, which was some nine days earlier than usual.

Finished strawberry picking June 28th.

From this time till July 31st, weather was very dry, hot and smoky. Even currants became badly shriveled and scalded.

July 21st saw last picking of raspberries. The blackberry crop was nearly a complete failure on account of drouth.

Grapes produced a fair crop but not as large as was hoped for.

The apple crop in our section was the largest in years, and those who sprayed were rewarded with much nice, perfect fruit. Indeed one grower stated that his apples were better than any he saw shipped in from Michigan and New York.

Newly set strawberry beds where well tended, managed to nearly hold their own till the continuous fall rains came, when they made a fine growth.

As some are planting dwarf juneberries it may be well to speak of them. Last season the bushes were heavily loaded and a fine crop was harvested where completely covered with mosquito netting. Without this protection the robins get the crop.

This berry is not well enough known to make it a profitable market berry.

Although the various kinds of fruit were cut short, the prices were better than if a full crop had been harvested, and thus the deficiency was partially made up.

The indications for 1895 are favorable for a good fruit crop, as the moist, late fall allowed time for fruit buds to mature and wood to ripen.

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#### OBSERVATIONS IN MONROE COUNTY.

J. J. Menn, Norwalk.

The past season has been the most unfavorable one that we have ever experienced in the south part of the county. March was very warm. Flowers were in bloom on the south side of

hills, those that are called "Easter flowers;" fruit buds swelled and all prospects were for an early spring, but April was colder than March.

Fruit trees were not damaged by mice nor rabbits during the winter and the prospect was good for a full crop of apples. Small fruit wintered splendidly. We uncovered blackberries and raspberries April 24th, one week earlier than in 1893. Fruit trees bloomed earlier than they did in '93. The fore part of May was very favorable for small fruit and the orchard; the latter part of the month, cold nights with frost set in, and strawberries that were in full bloom the last week in May had to be covered with hay to save them. Of the Warfield and Michel that were not covered, the latter nearly all froze; the Warfields by the side of them were seventy-five per cent. better.

Blackberries and raspberries were not injured by the frost, but the apple crop was. At first I thought it was not the frost, but later I found that it was.

The prospect was good for the small fruit crop, but the drouth set in in June and continued through the summer unbroken with the exception of two showers; the ground had become so dry that they only revived vegetation for a short time.

Strawberries promised a large crop, the first pickings were of good size and found ready sale at \$1.60 per crate of sixteen quarts. After five or six days' picking they all dried up, and the foliage looked as if it had been scorched, and in fact it had, by the hot sun and winds.

The new settings were badly injured through the summer, except where they were on very low land and had moisture, there they did well. When winter set in they looked poorly and the prospects are not very bright for the crop of 1895.

Red raspberries did better than we expected. Where they were heavily mulched after having been uncovered in the spring they gave a fair yield of medium sized berries which brought \$1.60 per case, and the home demand was good at that price. Blackberries were nearly a total failure; the canes were loaded with fruit, but could not obtain moisture enough

to develop it, and it dried before ripening. New canes made a good growth in the fall and we may expect a good crop this year.

Plums, both cultivated and wild, were a good crop. Cherries were a light crop. Grapes poor. The apple crop was better than we anticipated in the spring. My crop was of a better quality than in 1893. I had no insects, but the fruit did not seem to keep as well as in former years. Some orchards had to be sprayed to save the crop. Early apples sold at fifty to seventy-five cents per bushel; fall and winter apples at one dollar, with a good demand at that price. Many newly planted trees died, even some that were mulched; where the soil was kept loose and mellow they lived through, but made very little growth. Trees grew late in the season. How they will come through the winter is hard to tell.

The ground is very dry and is frozen very deep, but fortunately the weather was not very cold up to January 15th; at the present writing, January 28th, it was 30 degrees below zero.

A good many of the new Russian varieties have been planted, also the Northwestern Greening. Farmers are learning that it is cheaper to raise the fruit than to buy it, and are taking more interest in tree planting. Blight affected trees more or less during the summer.

I have noticed that those orchards that have been kept clean from weeds and June grass, and have been given a good top dressing of barn-yard manure bore the best fruit, and will as long as they are taken care of in this way. While, on the other hand, those orchards that were sod-bound with June grass so it would shed water under the trees, like the roof of a house, looked very poorly, and more so in a dry season, the fruit was small and wormy, and the trees had a sickly appearance.

The highest temperature observed by me was 107 degrees in the shade, with hot winds from the south as if coming from a furnace.

In this locality we had frost every month of the year, not very heavy in July, but heavy enough so that grass turned white on low ground.

## REPORT OF F. J. WELLS, MILTON, ROCK COUNTY.

Plants, shrubs and trees received very little injury during the winter.

March 17th gave us a May day with temperature at 75 degrees above zero.

March 18th we set raspberries. Before night a good summer rain threatened to start fruit buds and get them killed by later freezes. A cold spell set in the 24th followed by varied freezing and snow.

April 4th seeding began.

May 1st strawberries began to bloom.

May 3d onions, parsnip and potatoes up.

May 11th corn, melons, etc., planted.

May 17th potato beetles very plentiful.

May 18th gave us a lively snow storm from the north. The next day was clear, wind north, and mercury at 32 degrees above zero.

May 25 melons were replanted, having been killed by the storm and cold.

May 31st showed a white frost. Little injury.

June 6th a hard frost (mercury at 31 degrees above zero), killed three-fourths of our Ohios and grapes. The Greggs, being later, escaped; also the red raspberries, currants, gooseberries, and cherries. Apples were in full bloom and were not injured. Strawberry prospect half destroyed. Potatoes in bud frozen half down. Somestrips escaped.

June 8th first picking of strawberries on our prairie. The last picking was July 5th, with raspberries right after them, and a drouth on their neck, reducing the crop one-third. July 19th encouraged us with a good rain, after twenty-five days of shine. Then followed another drouth which ruined the blackberries and reduced growing crops very much.

August 20th gave the first ripe melons.

September helped us out with abundant showers. The first killing fall frost visited us September 15th. November 11th

snow fell, starting the sleighs. This did not last long. Some plowing was done between December 20th and 25th.

There were nearly twenty acres of strawberries about Milton. They yielded one-third of a crop, and wholesaled at from seven to ten cents per quart.

For lots of good, handsome berries, plant Warfield, Crescent and Haverland, fertilize with Beder Wood, Lovett, Wolverton, Saunders, Enhance and Parker Earle.

Wolverton showed an immense number of blossoms and berries when the frost spoiled our fun and report. Lovett and Saunders gave us some large, very satisfactory berries. Enhance did well in size and yield of fruit.

Greenville promises a good supply of berries. Timbrell plants set early this spring were very large and thrifty, but the number of blossoms they bore indicated moderate productivity.

Leader has a good-sized berry but small vines. Beverly has better foliage.

Smith's Seedling is a moderate bearer, with us; has extra, high flavor; colors unevenly; often spoils on one side before it is red on the other. Not a market berry. Muskingum is productive, large, round, soft, and tame flavored, with a weak vine. Edgar Queen is too soft.

Michels is good for a sell in the plants. It gave us a few good early, small berries. Don't get too cheap plants; they may be small, run out stock, mixed, or "I don't know what they are."

Don't pay \$2.00 per hundred for plants in general cultivation.

The best varieties can be had at from fifty cents to one dollar per hundred and often less.

New varieties ought to be tested at our trial stations before we give them the credit of our patronage.

It would save many misspent dollars, but the pleasures of anticipation are so great that we are almost compelled to indulge in some which have the most credible, or incredible recommendation. Unless you expect to sell plants, go slow. For profits in the sale of fruit, get those varieties which do best in your locality; plant early, keep clean.

We sprayed our apples, grapes, currants and potatoes with Bordeaux mixture, adding six ounces of Paris green to fifty gallons of mixture.

The Transparent, Wealthy and Duchess gave us a large yield of beautiful fruit.

The currant worms struck and we picked the handsome Fays.

Potatoes that were sprayed the heaviest remained green ten days longer than the rest.

When potatoes six or more inches high are frozen half down they might as well be plowed under.

The yield this season was from one-fourth to one-half a crop, and sold at from sixty to eighty cents per bushel.

The earliest apples sold at about one dollar per bushel, but harvest and fall apples sold largely at fifty cents per bushel.

The crop was large; early apples under size and difficult to keep. Some trees perished in maturing their load of fruit.

Winter apples were a short crop and were shipped in and sold at \$2.75 per barrel.

Oh! that agent was around with a smooth story, and exaggerating plates to sell us trees in general cultivation at seventy-five cents each. We heard him through, then showed him specimens of the same varieties in the garden that cost twenty-five cents apiece, splendid trees.

Deal with somebody known to be reliable and responsible living near by.

Get mostly those varieties that do well generally, or are successful in your locality.

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## OBSERVATIONS IN OUTAGAMIE COUNTY.

Mrs. D. Huntley, Appleton.

The season of 1894 was a disappointment to many fruit growers in this section. The spring opened with most delightful weather. March was mild and pleasant and gave every

promise of an early season, but April was much colder with frequent rains and only a few farmers sowed oats or barley in that month. May was still more unfavorable; continuous rains kept the ground saturated with water to such an extent that grain could not be sown till after the 10th of May. There were a few bright days following that date, then very heavy rains fell on 14th, 15th, 16th and 17th, and no gardens were plowed till the last of the month.

In the mean time grass improved rapidly and by the middle of May all vegetation was as forward as usual. Plum trees blossomed the first week in May. Apple trees were covered with blossoms on the 10th and promised a bountiful crop.

The weather continued warm and pleasant till the 18th, when there was a severe frost, ice formed in low places, and for four nights in succession there was white frost in many places.

Frequent rains kept the ground in bad condition, very little corn was planted and but few gardens made before the first of June. The frosts in May followed by heavy rains, injured all fruits in this locality.

Strawberries did not meet the expectations of growers; beds that looked well, and bloomed well, did not mature a full crop of fruit; frost and rain destroyed many blossoms. Best varieties, Wilson, Crescent and Warfield No. 2.

Raspberries were injured by the same cause, and some fields were affected by blight. The Marlboro and Cuthbert are grown here in preference to other varieties.

Red raspberries are grown more than black ones.

The apple crop was much injured by the frost in May. At first it was not apparent, and we still hoped for the bountiful crop which the abundant bloom had promised, but as the season advanced and the apples began to form they dropped from the trees till only half a crop was left, and these when ripe had no keeping qualities. Summer apples decayed rapidly. Fall and winter apples were gone before our winter meeting in January, when we usually have a fine display.

Notwithstanding this fact, apples were lower in price than last year. Summer apples sold for sixty cents per bushel and

fall and winter apples for eighty cents and \$1.00. We consider the Wealthy our best early winter apple, on our soil, loam and clay with red clay sub-soil, it bears abundantly.

The Utter does well with us, and the Duchess and Tetofski and Whitney No. 20, should be grown by every one who has a garden. We have many other varieties, but they are not as satisfactory.

Russians are just coming into bearing and have not been fully tested.

Grapes matured very rapidly during the dry, hot weather the last of the summer, nearly all varieties ripened before we had any severe frost. Of many kinds grown here, the Brighton is the best red grape, the Worden the best black, the Niagara and Merthes the best white grape. One may grow many varieties, but they will have no better table grape than these three kinds.

For preserving and for jelly we prefer the Janesville to any other black grape. It has an excellent flavor when cooked, the vine is hardy, is an abundant bearer, and ripens early. Grapes were troubled by insects or mildew.

Orchards were comparatively free from blight and insects.

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## REPORT ON OBSERVATIONS OF 1894.

Warren Gray, Darlington.

The spring opened much earlier than usual, bringing blossoms of all fruits at least ten days ahead of time. We feared late frosts but escaped, with slight damage to raspberries. We picked ripe strawberries June 1st; raspberries June 15th, and blackberries July 15th.

Strawberries were promising, early, but the severe drouth the first part of June cut them down one-half, with last pickings of poor quality. Warfield suffered most, as it set an enormous crop and could not mature all the berries for want



of moisture. A few showers came too late to help strawberries, but helped out raspberries some. Had good crop of Olders, but Greggs were a failure. We believe the Older raspberry will withstand more drouth and mature a crop, than any other berry grown. Red raspberries and blackberries were light yield, for want of water.

Apples promised well, early, and some of the earliest did fairly well.

We harvested the first good crop of Tetofskis after fruiting them for ten years; large, smooth, and free from scab and worm. Believing that failure of apple crop in this locality for two years in succession had starved out the codling moth, we concluded not to spray with Paris green. The earliest apples were not damaged by worms to any extent, but late fall and winter varieties were badly infected.

We think the only surety of getting a good crop of apples here is to spray early and often.

The prospect for an apple crop next season is good, as trees are well filled with fruit buds.

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#### OBSERVATIONS BY WM. TOOLE, OF BARABOO.

The winter of 1893 and '94 injured strawberry plants to some extent and was still more severe on raspberry and blackberry canes. Trees of the larger fruits were not injured.

The yield of strawberries was but moderate on account of some injury to blossoms by late frost and hot, dry weather, coming on suddenly before much of the fruit had ripened. Blackberries and raspberries suffered severely from the excessive drouth.

Currants were much injured by frosts at blooming time.

Killing the currant worm with white hellebore is now generally practiced here.

Apples were injured some by frosts, but not badly.

There would have been a fair crop of most varieties if there had been no codling moths, although the excessively hot, dry

weather reduced the size of fruit. The injury by worms was not so bad on early as on late varieties, and spraying did not seem to be very beneficial to the late kind, but undoubtedly was of great value to the early varieties. Our own experiments and observations convince us that spraying with Bordeaux mixture prevents scab and leaf blights—but we need to learn more about how to control the late brood of codling moths.

Twig blight seriously injured some varieties, notably Talmansweets. Other varieties, especially some of the new Russians, were much damaged with blighting of the large branches and trunks, particularly where the soil had been cultivated.

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#### OBSERVATIONS ON FRUITS.

From John Rhodes, Union Grove, Racine Co., Nov. 15th, 1894.

Only local prices of fruits are quoted.

Apples in great abundance, not saleable, very wormy.

After the month of June, extreme drouth all summer which diminished injury from apple scab, and downey mildew on grape leaves.

Observation indicates that orchards sheltered by evergreen belts or other windbreaks are more subject to depredations from codling moth, and plum curculio, than orchards located on high ground and exposed to every wind. Perhaps these insects are not strong flyers, and find it difficult to stay in a windy garden. Without laying this down as an infallible rule interested persons are requested, each one, to study the matter in his own locality.

Pears unusually plenty.

Prices started in at \$2 per bushel and got down to "No, thank you, we have all we need."

Crop afflicted with worms, and some varieties worthless from scab, notably White Doyenne and Flemish Beauty. The Birkett pear produced a fine crop with perfectly clean leaf,

and fruit below medium size, and third grade in quality. Another pear more valuable than this might as well be called the Rhodes pear as anything else. The original tree has been in the Rhodes family some fifty years, and has been bearing forty years. A number of years ago when blight was prevalent the tree was nearly killed. It now has only one branch alive, which, last summer, was loaded with fine, healthy pears as usual. Fruit is large. Color russet green. Quality not the very best, but much better than no pears. Its diploma is for having outlived and outborne every other pear tested with it in this vicinity

Cherries. Market at \$1 to \$2 per bushel. Crop good, nearly all being the common Kentish pie cherry of the E. Richmond type.

Plums started well but were nearly all appropriated to breeding curculio. The exceptions were mostly trees under which poultry dusted themselves, and isolated trees here and there through the country which the pothook bug failed to find. My own experience gives me little to expect from spraying with Paris green.

Grapes. This is the fruit for comfort. Grown twenty-two years on our own ground without a single failure. If it could be preserved with the flavor as eaten from the vines, mankind might be happy twelve months of the year, barring, of course, the persecution by politicians, mosquitoes, etc.

The fruit here sold rapidly when ripe at four cents per pound, and where the vines had been properly cultivated the fruit was unusually fine.

The drouth seemed to be unfavorable to the development of downey mildew, which is the worst enemy of the grape here. I have carefully tested over thirty varieties, and so far Concord and Worden are ahead of all other sorts. Possibly by the use of Bordeaux mixture, paper sacks, etc., we might get better specimens from some other sort. But if the Wisconsin grower who must lay down and cover his vines in winter will compete with the New York state viticulturist in the market, he must tie to varieties bringing the most money from the least labor.

Currants and gooseberries were nearly exterminated some time ago by the imported currant worm. From a want of feeding material the pest has rapidly diminished in number. It is now an easy matter to raise these fruits which bring remunerative prices (9 to 12 cents per quart).

A little watching for holes in the lower leaves, then a little spray of hellebore and water puts the embryo saw fly permanently to sleep.

Black Currant—Here we thought we had a plant sufficiently loud smelling to repel all insects. Vain hope. For the past three years or more this fruit has acted badly. The berries, little, insignificant things, dried up before ripening, and dropped off before fit to eat. The leaves began turning brown in patches. Patches grew until the whole leaf turned brown and fell off. New leaves then came out. The whole trouble was laid to fungi. In September last an affected leaf was put under a magnifier. When, lo! on its under side appeared a small army of straw-colored sappers and miners sapping away the life blood of the leaf.

The new pest probably belongs to the aphide family. There is an opportunity to experiment on the "little cuss" with kerosene emulsion, Pyrethrum, whale oil soap, hellebore, ad nauseum. Shall be glad to hear from the first friend who physicked him.

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#### REPORT OF W. H. H. CASH, NEW LISBON.

I have over seven hundred apple trees, four acres of blackberries, three acres of raspberries, one acre of currants, two acres of strawberries, three hundred and fifty plum trees, two hundred cherry trees, besides gooseberries and other truck. I am growing 2,200 apple trees, and so on. Now, I am a special crank on plums. I have location by side of mill pond, covering about 1,000 acres, and while you climb hills to avoid frost, I am hugging that pond on sandy loam, and carrying my plums onto the bottom land and islands made from sediment

washed down from the bluffs, very rich land. My experience is that frost freezes clear on top of our hills before it touches my land, so I am wading in. By putting in a steam pump and raising the water twelve or fourteen feet I can irrigate every foot of this land, which I expect to do. Of plums I planted one hundred De Soto, forty Abundance, and about twenty of each kind Japans, twenty-five Golden Beauty, twenty-five Potawatomie, forty-five Wild Goose, twenty-five Wolf, twenty-five Forest Garden, twenty-five Mariana, twenty-five Lombard, twenty-five Prince of Wales. I have not been able to find weaver, Miner, etc. What other kinds are there that would stand a show in my situation, and where can I get them, please?

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#### DISCUSSION.

C. E. Tobey—I would like to ask Mr. Converse about the leaf roller; he speaks of its doing considerable damage.

D. C. Converse—The leaf roller did not make its appearance until the crop was nearly ruined by dry weather, but when it did come it settled it; it only troubled us on our old beds, our two year old beds.

M. A. Thayer—We have, in many of our reports the past season, the prediction, "We will have a good crop next year; there is a good prospect for it." I would like to ask these gentlemen if they have examined the fruit buds so that they know for certain? I would like to know if, after a dry season, the buds are not so harmed that they will not bear a good crop next season. On our grounds we do not expect a good crop of blackberries or raspberries next season because the fruit buds seem very immature. If we get a half crop we will be satisfied. The fruit stem buds do not seem to be matured.

M. Pierce, Minnesota—I have carefully examined the grapes, blackberries and raspberries in our section and I do not look for a good crop this coming year because the fruit buds are not well developed. I much doubt the strawberries also, they

have made so little crown growth. I do not expect a good crop of raspberries or blackberries. The year before last was dry and it spoiled our crop for last year. On the apple trees the buds are better and we may have a good crop. Grapes were very immature last fall.

A. A. Parsons—I have made a careful inspection of the fruit buds in my vicinity and I find the same lack that Mr. Thayer does. The buds are not full. I think the best show for fruit is on the blackberries, although they made small growth last fall. I look for light crops of small fruit.

D. C. Converse—I referred in my report to strawberries and raspberries only on my own grounds, and I found there, as I stated, that the buds are well developed. We all know that unless we get a good growth we shall get a small amount of fruit, but from the looks of the plants and the strength of them, I think we have reason to expect a good crop. The strength that would have grown into the berries last year, can be used for developing buds.

A. L. Hatch—Now, that suggests an idea, and that is, why wouldn't it be well to turn those bushes all over to the new growth? Prune them well so that they will concentrate their power for the production of fruit.

M. A. Thayer—I would suggest that they be severely pruned and not allowed to bear so much fruit.

R. J. Coe—I have tried that and it gives the canes a better growth.

The fruit prospects for next year, I consider good, at least they are with me.

J. F. Case—I have tried that on the Gladstone. I do not care for fruit on the first cane. I prune right down and get my fruit on the second cane. My prospect for a crop looks as good as ever it did, it was irrigated.

R. J. Coe—If we get a good growth we get plenty of fruit buds.

A. L. Hatch—The point I want to make is this, you must have maturity there or you will not get the fruit. It is not a question of the amount of growth, you must also have the ripening process.

I have made this statement here that a tree or plant can be grown past fruitfulness. That is the experience of many in New York as well as elsewhere. I do not care how plump your buds are, if they are not mature, it will indicate no fruit. A great many fruit growers have erred in that direction. Prof. Goff told me of a fruit grower in New York who had a large, and a fine orchard which he grew past fruitfulness, the wood of which did not mature, simply because the owner cultivated it too much and kept it growing. You must stop cultivating at certain seasons of the year to permit ripening. A few years ago a man published the fact that the terminal buds finish their development by the first of July. I find that it never fails. A terminal bud is at its best in July. There is a certain season for those things to grow. I never give a tree a stimulus beyond what its natural time in the year for growing is. I wouldn't cultivate after the first of June nor give an orchard any manure after that time. Prof. Bailey, who is one of the best authorities in this country, used to think otherwise, but has now changed his mind. You know what a great cultivator J. M. Smith was. He cultivated too much, and everything that would not stand his high cultivation he condemned; he grew right past the point of fruitfulness. You know that he only succeeded with one or two varieties of strawberries. He was like the old king you read about that had an iron bedstead and every one had to fit that bedstead.

Any growth that comes after the middle of July is unsafe. If you can get hold of this as I have had to, by experience, you can get some good out of it. You can make money out of it.

R. J. Coe—We try to get just as rank a growth as we can up to the first of August.

Chas. Hirschinger—If you stop cultivating your trees at the time Mr. Hatch advises, you certainly are going to get a crop of weeds unless you do as I have done in some of my orchards, get such a growth of blue grass that weeds will not grow.

Discussion closed.

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A. L. Hatch—I move that a chairman on the committee on legislation be appointed in place of Mr. Hirschinger.

Motion seconded and carried, and the chair appointed A. L. Hatch.

A. L. Hatch—I suggest that we invite the committee of the assembly, called the committee on forestry and horticulture, and the joint committee on claims to meet with us here.

Chas. Hirschinger—I would like to have the committee on legislation of the Society see those bills I have introduced. I saw the chairman of the joint committee on claims and asked him to meet with us; he said he would do so. The bill for our appropriation asks for \$2,000. The other bill asks for 4,000 bound volumes of our reports.

President—If you will allow me I will suggest that you meet that committee at 11 o'clock tomorrow.

Adjourned.

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Tuesday P. M.

## WHAT DO THE APPLE TREES OF WISCONSIN NEED MOST?

F. H. Chappel, Oregon.

I am now going to give you a little of my experience in the work of apple growing. I have been for twenty-five years trying to find out how to grow apples. I do not claim to have learned much, but I have found that one of the first and most important things is to find a good location on soil that will retain enough moisture for the trees. This is very essential. Then we must understand how to give moisture. I would recommend the use of salt as a help to the moisture and as a preventive against blight. I will now speak of moisture. I want you to see the perfect wood of the apple tree that I am talking about (shows specimen of wood). It was a whip grafted into a Duchess, and has borne four crops of apples.

Moisture is the first point. We can use a clay loam, or even a sandy soil, if it be not too sandy, but good cultivation we



must have, the same as for potatoes, corn or tobacco, and that frequently. We can give moisture in this way and we can give it in other ways. When we have a sandy loam and a good sub-soil the water will sink down but will be retained and returned to the upper soil as the trees need it. Another way to give moisture is by sowing buckwheat the first of June. It will get a start before the dry, hot weather period, and will result in giving the trees a good deal of moisture. These are my three methods of giving moisture. I apply the salt for blight and other fungous diseases as well as for moisture. Without cultivation, or producing moisture by mulching with sand, or something of the sort, we would better let fruit growing alone than to put out the trees to be destroyed by blight or by the hot sun. Some people plant their trees in the sod to burn and kill, and it is of course only a matter of time when they prove failures.

Another thing needed is pruning, which is very essential. If we want a good tree we must prune it at the proper time. It will never bleed if pruned at the right time; that time is from the middle of June to the first of July. The trees are vigorous at that time of the year, the sap is flowing rapidly, and the natural healing gum exudes and does its work. A tree will heal three times as rapidly at that time of the year as at any other, and you will never have a tree affected with the black heart. I never saw a tree blackhearted when pruned in this way, but I have pruned trees at other times of the year and blackhearted them the first year. Never prune a tree the first year after you have set it, but you may prune it when you set it if it needs it.

Q.—How long have you practiced the sand mulch?

F. H. Chappel—For six or eight years, and my customers to whom I have sold trees have practiced it for several years.

Q.—At what time of the year do you apply the mulch?

F. H. Chappel—You can apply it at any time of the year that you choose, but it is better to apply it in the spring before the hot weather comes on. I sow it right on the ground. I had some Russians on a low piece of ground. I saw the blight was going over them quite bad. I cut off the blighted

portions and destroyed them, and then sowed salt over the ground until it was quite white and dumped some of it against the trees. I haven't seen any blight since, although there has been blight on other trees in other parts of the orchard. I would say, sow it when the rain is about to fall.

I had a tree that was called the "August" that was given to blighting very much. About five or six years ago it was an inch and a half through and all of the limbs blighted but one. I dug a hole near the roots and put in fish salt and brine, two or three pails full right about the roots, and I saw no more of the blight until this year. I expected I would kill the tree but it came out all right. I put some salt around an old and nearly dead tree. I thought I would put on enough salt to kill it and so get it out of the way. The next year the tree came out vigorous and has grown well ever since. Now, why I say this, is to show you what moisture can be drawn from salt, and also to show you how strong it can be used without killing the trees. I do not know how much salt it would take to kill a tree, but I am going to experiment next summer to find out.

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#### DISCUSSION.

Q.—Would you set out trees on level ground?

A.—Yes, sir.

Q.—Do you use stable manure?

F. H. Chappel—No, I would not use it on young trees, though it will do well applied to old trees. On young trees it seems to make them more easily victims of fungous diseases.

Q.—Do you think a nothern slope the best for apples?

A.—Well, not unless the slope is very steep so that the trees will get a good air circulation.

Prof. Goff—What do the apple trees of Wisconsin most need? The question is rather a hard one. If you were to ask what a man most needs you would find there are a good many things, and so it is with the apple tree. There are several

things the apple tree must have or it will die. If you ask what it needs most, I will have to generalize. I have been studying the question very hard for a long time. I have also corresponded with several hundred apple growers, and from my observations and the letters I have received from others, I believe the orchards need better care, and that this is what they need most. Apple trees must have food; they must have moisture and they must have leaves. I think if our apple trees had all the food they needed they would take care of the moisture question very well. An apple tree is about as well able to cope with drouth and to take care of itself as any other crop. I noticed last season that our orchards stood the drouth better than most any other crop. Our friend, Mr. Hatch, in spite of the dry, hot weather harvested something like 1,000 barrels of apples from his orchard; this was from an orchard that had the best of care. I believe if we gave our orchards good care we would largely settle the question of dry and unfavorable seasons. If all of our orchards had had as good care as Mr. Hatch gave his we would have heard little about the poor apple crop. Good care means a great deal, and what it is cannot be told in five minutes. Good care means, first, good location; second, proper soil; and then proper care of the soil. Apple trees must have good soil. Our trees must have something to eat as well as to drink. I do not say that it is not possible to overdo the question of moisture, but I think the majority of our orchards are starving rather than being planted on too rich soil. Taking care of the foliage is an important question, and pruning is also an important thing to be taken into consideration.

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### NEEDS OF WISCONSIN ORCHARDS.

Geo. J. Kellogg, Janesville.

Location should be the highest, driest timber ridges, with clay soil rich enough for corn, giving free circulation of air and no wind-break except on the west and south.

The smaller the trees at planting the better, and the longer lived and more healthy the orchard will be. The nearer the trees are grown where needed the better, north, rather than south, if sound and healthy.

Severe pruning should be done at the time of planting if the trees are over five feet high. Every tree should have one cen-

As regards protection and culture, from the day of planting every tree should be shaded from the ground to the first limbs on the southwest side, and I know of no protection so effectual as Phillips lath and copper wire scheme; above this protection I would wind with marsh hay up among the branches. This protection should be kept on summer and winter till the trees are ten years old. Cultivation should be given from planting until the orchard comes to bearing, but never after the first of July. Mulching is a necessity to protect from drouth, and should be applied the day of planting. And in case of danger of a dry freeze up, liberal applications of water should be given each tree in November. When the orchard comes to bearing, the ground should be kept in clover and pastured by pigs and chickens only. When in full bearing they should be fed liberally to keep a healthy growth that will perfect the blossom buds while the growing fruit is drawing heavily from the vitality of the tree; it is also very important at this time to hand-pick half of the fruit from some heavy bearers.

For leaf blight, scab and insects, spraying must commence before the buds open, using Paris green from the start, which will head off the leaf-rollers, and other sunrise insects, such as curculio and apple gouger. Spraying must continue after the blossoms fall and be repeated at intervals of ten days until July 1st. For protection against the curculio and apple gouger there is nothing so effective as the jarring process.

For orchards in hard places, you will be more apt to have success if you commence the foundation for it by planting Hibernial apple seed where the tree is to stand in the orchard; shade the first two summers, bank the first two winters; collar graft at two years to Virginia crab; protect until large enough to graft at three feet above ground with desirable kinds; this

is the only way that the "whole roots" process amounts to shucks, where the original seedling grew, there it should be grafted.

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### WHAT DO THE APPLE TREES OF WISCONSIN MOST NEED?

A. D. Barnes, Waupaca.

The gentlemen who have preceded me have so nearly covered the ground that there is little left for me to say, but there is one thing we lack and that is the energy to carry out these instructions. I fear our friend, Chappel, has made a mistake in advising us to prune trees in June and July. I think most of us would not want to prune at that time. I make a success of growing apples and I do my pruning early in the spring just as soon as the sap starts, early in March or the latter part of March; that is, I think, the best time to prune. Another thing I think we need, is more native varieties adapted to Wisconsin climate and soils. We have already obtained a good many varieties and I believe we can get a great many more that will be valuable to us.

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### WHAT THE APPLE TREES OF WISCONSIN NEED MOST.

A. L. Hatch, Ithaca.

Our apple trees do not all need the same management, but all need better management. The object of this paper is not to tell what is the one greatest need, but rather to tell some of the most important needs that trees, under varying circumstances, may require.

Some that are to be planted next spring need better sites than many orchards now occupy. Two of the most important

ideas concerning this matter is sub-soil and air drainage. No matter how good the surface soil may be, if one foot, or less, in depth there is an infertile bed of beach sand or glacial drift gravel, an orchard can not do well permanently on such a site. Air drainage, secured by elevations above the surrounding country, not only proves valuable in giving immunity from untimely spring frosts but also in allowing a fuller ripening and maturity of foliage and wood in the fall than is possible on lower sites not influenced by nearness to bodies of water. We have such sites in southwestern Wisconsin, where apples never lose their bloom by late spring frosts.

Another thing most of our apple trees need is a better chance to make a good growth each season. It can not be too often reiterated that this growth must always be finished the first part of July. Cultivation should always begin as soon as growth does, and any fertilizers that are used should be applied early in spring so as to be available when needed for this growth, and should never be applied in a way to stimulate growth after July 1st.

Another very general need of Wisconsin apple trees is more room. Thirty feet apart each way is close enough—900 square feet to each tree. The advice to plant more closely and then thin out the trees when they begin to crowd, I think, from my experience, is very bad. The ground where trees have grown ten years or more will be much poorer in tree sustaining power than it would be if it had been unoccupied, and as a result there will still be root crowding. Better by far give ample room from the start. In my own orchard I have often picked from five to ten dollars' worth of apples from single trees, having plenty of room when others near by, but crowded, gave a very small yield of unmarketable fruit. Isolated blocks of trees and those on the borders of the orchard often yield at the rate of over \$600 per acre, and much more satisfactory fruit in every way than grows in the closer parts of the orchard.

All our trees need better protection from insects and parasitic fungii. Of course this means spray—but it also means

more careful management all around, and better knowledge of each and every foe.

One more very great need of too many Wisconsin apple trees is that they be cut and burned. Those not producing good fruit, or too little of it to pay for the room they occupy; those that persist in blighting each season, and even good trees crowding other good trees should all be cut down and cast into the fiery furnace, because it is not meet that they longer stand to breed the contagion of blight and scab, lice and moths to infest and make poor the foliage and fruit of better trees near by.

To sum up, give our trees better sites, better early culture each year, more room, and better protection from insects and fungii, and there will be no need to apologize for Wisconsin apple culture, for it can be made our most profitable farm pursuit.

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#### DISCUSSION.

M. A. Thayer—I am astonished not so much at what has been said as at the difference of opinion among these gentlemen who have been engaged in the fruit business so many I use the first cut of the root for grafts, about five inches. I give the best of cultivation and I get long tap roots by this process. During the last two years I have had wonderful growth of my trees. I never, in the last five years, have had apple trees so healthy as they are now. Apple roots are composed of three kinds. Among these are the feeders that go a long ways out in the ground; they grow to be thirty or forty feet long sometimes They bring food. Then we have another class of roots, the tap roots, that do not go out. They go down into the soil and bring up water, but they never feed. My trees in the orchard are cultivated, but never deeply. I never disturb the roots. The time to do most of the trimming is in the nursery before the trees are three years old. I have from 1,000 to 2,000 trees in my orchard and many of them are per-

fect. I have had the most critical men examine my orchard, and I will give fifty dollars to any man if he will find a bad tree. They are top-worked. I have never had a bit of blight.

B. S. Hoxie—I have heard people say, sometimes when a patient is sick, "He got well in spite of the doctor." I do not think a man should take two or three years for an experiment and call it a success in that short space of time. Sometimes men here will ask: "How do you raise an apple orchard?" And they will look over our reports and say: "Why, some of you recommend one thing and some another." Some years ago, when this tap root, piece root and whole root was discussed here, Mr. Peffer said that when nature got rid of the tadpole it took off the tail, and I think it is so with the tap root of the apple tree. Select your good orchard site and give your orchard good care. Do not say that you get a good crop with a certain treatment and think that will work always the same. Do not say that is the only way to raise apples. One reason why we have made so many mistakes is, we have tried to follow some man who has tried some experiment and thought he had a success. The trouble is one man tries too much to follow the way of another, and the result is we find that nature, as in the case of the tadpole, does not work the same way under all conditions.

A. L. Hatch—With the exception of what Prof. Goff has said on this subject, it seems to me that the experiences given seem a little peculiar, especially where they advocate a departure from ordinary management. I am surprised, and I am really sorry, to see old, gray-headed men as we have here make such statements and bring forth such schemes as they have here advocated. If any man takes such systems and tries to follow them out, he will run against a failure somewhere along the line. Here is Kellogg telling us we must use Paris green before the leaves start, that the insects on the leaves may be destroyed. Our apple trees do not all need the same attention, but they do need good care. The orchards that are to be planted next spring should have better sites than those our present orchards occupy. Two things we surely need are good sub-soils and air drainage. A sub-soil of glacial gravel



is not good, no matter how good the upper soil may be. Another thing our apple trees need is a good chance to make a good crop every season. Cultivation should be begun as soon as the growth sets in. Fertilizers should be applied to stimulate growth in the spring, but not after July 1st. Then we should give the trees more room. Do not plant your trees with the idea of cutting out some time; it is better to leave the ground unoccupied. In my orchard I have picked five and ten dollars' worth of fruit from single trees that had enough room, while from trees planted too close I have obtained almost nothing. Our trees need better protection from insects and fungus diseases. In fact we must have more and better knowledge of all things. We need to cut down and burn a good many trees, those that bear too poor or too little fruit, for if left they serve only as breeding places for fungus, scab and insects. I think it is time we came out of the babyhood of horticulture into something more scientific.

J. C. Plumb—Will Prof. Goff give us the principle if buckwheat growing on land is a conservator of moisture?

Prof. Goff—I do not believe it is a fact that it does conserve moisture. I do not believe that growing any crop on cultivated land conserves moisture. On the other hand, experience shows that the soils that are most moist are those that have no crops on them.

J. C. Plumb—That is my observation exactly. I asked the question because I used to believe, and advocate, that the buckwheat did conserve moisture, but on examining soil growing buckwheat I found the surface moist, while below the surface it was dryer than soil with no crop. The apparent increase of moisture produced by growing buckwheat is a delusion. Now I want to ask my friend Kellogg if he meant to advise the smallest tree as the best to plant. I think he meant the youngest tree.

Geo. J. Kellogg—No, sir; I did not mean the youngest, I meant the smallest. And I believe you should plant to root graft it and never transplant it.

M. Pierce—Has anyone used muriate of potash around apple trees?

Prof. Goff—I have applied it, but not so long ago as to be able to give any report of it.

J. C. Plumb—Prof. Goff, what will be the effect of the drouth of 1894 on the productive power of the trees of 1895, according to your judgment?

Prof. Goff—That depends a good deal on the condition of the tree. I believe that a dry season sometimes stops it from fruiting. A young tree that is full of food and has not begun bearing frequently needs a check, and a drouth may serve as a check and so make it more productive, while, on the other hand, an old tree that has been partially starved, that is, not very rich in latent food, might be so affected by a drouth as to make it non-productive.

Q.—When do they form their blossom buds for the next year?

Prof. Goff—About June, and not later than July. Very little growth is made after that time.

J. C. Plumb—I have been examining my trees all through the past autumn and I find that some of them are apparently very much benefited by the drouth. I found some forming a large number of fruit buds and others not forming scarcely any. I am looking for great weakness at the blossoming time next spring. I can't see it in any other way unless the trees were cultivated some during the past summer, which, if done, would help them to recuperate. So far as fruit bearing is concerned, I think we may not expect anything like so large a crop as we had in '94 on account of the heavy bearing and the effects of the drouth.

Q.—If a tree has the right kind of a root, is it necessary to prune that root?

A. L. Hatch—I can cite you to a great many instances where it has been beneficial. I never saw a tree, that had borne a crop, that could not have been benefited by a judicious root pruning. Twenty-five years ago I knew more about apple trees than I did twenty years ago, and I knew more then than I do now. Some people have the idea that I am a great cultivator, but I am not. I only cultivate and manure as every other farmer can. My present orchard has been bearing fruit

for twenty years and has not failed to give me some fruit every year. I have never seen a fruit of any kind that will stand drouth like apple trees and cherry trees. You cannot recall to mind a spring in which we did not have more or less moisture in the months of March, April, May and June. If you have the moisture then you may expect the tree will gather up enough to develop its fruit buds and carry it through to the ripening of its fruit. Unless you have philosophy at the basis it is no use trying to grow apples.

M. Pierce—Have you any scab on your apples?

A. L. Hatch—Yes, when I neglect them I have plenty of scab.

Discussion closed.

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#### LOCAL NURSERIES FOR NEIGHBORHOOD PLANTING.

J. C. Plumb, Milton.

Of the problems of horticulture which face the northwest, none are of more importance than that of an abundant home supply of fruit. This was the first question to raise when I commenced tree growing in Wisconsin over fifty years ago, and now we are far from the home production of any of the culinary and dessert fruits, except strawberries, in quantities to meet the real necessities of our growing million of people.

Shall we conclude, as many say, that "Wisconsin is not favorable to the production of fruits," when at every national and international exposition Wisconsin carries off so large a share of the prizes on hardy fruits?

And yet this 6th day of February, '95, not a barrel of Wisconsin grown apples are to be found in the markets of any of our larger towns, and precious few in our farmers' cellars.

Two years ago I advocated cold storage as a practical means of preserving our surplus autumn apples for winter use, and I have been pleased to see that other writers in the west have taken up and advocate that as a necessary adjunct of commer-

cial fruit growing in the west, as it has so long been with the enterprising commission men of the east in conserving the immense apple crops of the east and south. I now will add, that in looking over our own northwest I see but little progress in growing even a home supply of apples, and am led to ask, why is it so?

The year 1880 saw the largest crop of apples Wisconsin has ever produced, three-fourths of which went to waste for want of suitable means of conserving it. In Jefferson county alone the crop was estimated at 200,000 bushels by an extensive cider manufacturer near Lake Mills, who was overloaded with good apples at ten cents per bushel, and for twenty years before that, from 1860 to 1880, the best of apples were sold in the markets of that county at twenty-five to fifty cents per bushel. And the same was true of all southeastern Wisconsin at that time, since which the home supply has largely diminished.

To me two facts are apparent:

First, that tree planting here has not for the last twenty years kept up with the increase of population, nor with our progressive civilization, which demands more fruit as a daily diet in proportion to population.

Second, that nine-tenths of the fruit trees planted here in the last twenty years are from foreign nurseries, and sold by irresponsible parties, whose sole interest lies in the dollars that can be gathered by them as salesmen.

The large crops of apples grown in southern Wisconsin from 1860 to 1880 were largely from trees grown in local nurseries, which were started in that region in the 40's and 50's, of which the counties of Racine, Kenosha, Waukesha, Walworth, Rock, Jefferson, Dodge and Dane had over twenty-five, to my knowledge.

Today there is not a nursery in all that region which is growing yearly more apple trees than its own township should plant in order to maintain its orchard area.

Early maturity and early decay, is one of the peculiarities of our western climate and soil, and for one planting to last one or two generations it cannot be expected. In any event, we

find that it pays to renew our orchards often, by filling in the dead spaces, or better by additions to the area every few years.

In that most favored apple orchard region of the Mississippi valley, the Ozark mountain plateau of Missouri, the limit of profitable bearing is set at twenty-five years. Is it any more in Wisconsin?

I advocate the home production of trees, not because I believe only such will endure our climate, for such is not my own, nor the faith of any intelligent and broad-minded horticulturist. Yet there is reason to think that trees raised in and expressly for a locality, by a grower whose sincere desire is to supply that locality with best adapted varieties only, that such are far safer to plant than those now generally put on our market, without any guarantee of variety or character.

In the spring of 1845 my brother and myself commenced to sell apple trees from our nursery near Lake Mills, Wis., which he planted five years before, all budded above ground on seedling stalks. For the next ten years every tree went out in the hand, or by wagon in bundles, as we did no shipping, nor was there much importation except at the lake ports, for we had no railways, and so those early local nurseries were liberally patronized and were the means of an early and abundant supply of fruit for all southeastern Wisconsin.

Local nurseries need not, nor should they, be started on the slow plan of half a century ago. Then we planted the seed in rows where the trees were to stand for three to six years, thinning out and transplanting only where too thick. These stocks were budded or grafted at three inches to three feet from the ground, and one to four years from the seed, and dug and sold only when large enough to go into the orchard. This plan gave us some good trees, but too many poor ones, from the large variations of the stock grown from promiscuous seed, as well as often an imperfect union. The roots of those trees were generally coarse and but few of them. The present demand is for uniformity in size and form, with plenty of fine roots, and in the northwest we want these roots to spring from the cion by the second year and before planted in the orchard.

Hence, in the main, root grafting has come to be accepted as our best mode of propagating the apple.

The natural order of apple tree growing is as follows:

First year: The seed, which if well grown, will give stocks large enough for root grafting; taken up and cellared in the fall at one year's growth; grafted during the winter with cions cut before cold weather; planted out the following spring in nursery rows, where they stand two to four years before they go into the orchard. Further south the most orchards are planted with one and two-year-old trees.

Since most of the apple seedlings used in the west are now grown on new and cheap lands of Nebraska and Kansas, and since root grafting has become mechanical and shop work, I question the economy of the local nurseryman attempting either; and yet I commend the school work which Prof. Goff is doing in this line as normal and highly useful to the state. With the best of root grafts to be had on order, at \$5 per thousand, of the varieties wanted, especially for any given locality, and with them plain, concise directions for planting and growing, it is no great task for a farmer's boy to become a local nurseryman, and a great blessing to his country.

Local nurseries would secure a large share of the home trade by growing only such varieties as are adapted to the locality, as well as by underselling the foreign tree agent. Local nurseries and local horticultural societies should go hand in hand. Village improvement will surely come to any community having a live, practical, reading nurseryman, who would impress his ideas as well as press his products on the locality.

While the apple industry is just now the main needed reform, other nursery and garden products will come in as adjuncts, supplies for which can be grown by the local nurseryman or bought of specialists at wholesale, for the local trade.

I know the tendency is to centralize all the great industries, and that nursery stock, like reapers, can be produced cheapest on a large scale, but there are other questions involved here than simply first cost. Of first consideration is the planting

and culture of the horticultural idea among the people, which a local nursery will do if properly fostered; and with the idea will come the demand and the supply. For such is the kingdom of Horticulture and for such the horticultural society and the local nursery.

I will close with another personal reference. Among my earliest recollections is that of stumbling into the holes made by digging out trees from the little nursery at the lower end of the garden on the homestead among the Berkshire hills of western Massachusetts, where my father grew trees for himself and the neighbors. In 1840 my father removed to Ohio to school his younger children, where he commenced at once to grow a nursery and where my nursery work commenced. Three years later family and nursery were removed to Jefferson county, Wis., where I was put in charge of a nursery, from planting, culture and propagation to selling.

Thus with my elder brothers we have carried out the family bent, by growing trees in eight states of our union, and given a start to hundreds of local nurseries in the west.

In these latter days my earnest desire is to see practical horticulture revived by the establishment of *local nurseries*, which will bring the grower and the planter nearer together; will save the use of that middleman commonly called tree peddler, and from much of the uncertainty which always attends tree planting. The organization of local societies will do much to stimulate local planting, and to foster both should be a work of this State Society.

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#### DISCUSSION.

A. D. Barnes—In commendation of what friend Plumb has said about local nurseries, I will say that the local nurseries in Waupaca county are doing us a great deal of good. We are selling four times as many trees as we were before, and I believe that we are educating the people on the subject of

trees. If any of you live in counties where there are no local nurseries, some young man there should adopt the business for a profession, for it will prove of great benefit to him and to others. I would advise you to get trees from the nurseries in the part of the state where the trees are to be planted.

Geo. J. Kellogg—There is certainly great need of local nurseries where the people can buy trees that they know are all right. It was told to me this winter that a certain tree peddler who had sold a thousand dollars' worth of trees, after he had disposed of them, declared them worthless.

B. S. Hoxie—I am an early settler in the state of Wisconsin. I visited one of the oldest nurseries in the state at Delavan. I have seen a great many trees growing in door-yards and gardens that came from that nursery. Mr. Plumb says that nine-tenths of the nursery stock is foreign. I suppose he means that that stock is grown outside of the state. In the little town where I live three-fourths of the trees sold there are from Minnesota. I think the question of growing trees from stock grown in nurseries near by is what we most need to consider. Our farmers will buy of these foreign nurseries and pay four or five times as much as they would pay to our own nurseries.

J. C. Plumb—Mr. Hoxie is astonished when I say that nine-tenths of the trees sold in Wisconsin are foreign trees, but I believe it to be a fact. Now, as to the local nurseries, you may wonder why I advocate them, for I have been a nurseryman that employs salesmen. I have been in that business and have been employing agents for the last thirty years. I have ten or twelve men out now selling trees, but they are all local agents. They live in the localities where they sell the trees, and one of them has been selling our trees for the last twenty years. I am nearly out of the business. I believe the time has come for us to follow the line of work Prof. Goff has started in our agricultural college, that of educating the young men. There the students are taught to graft, to bud, and the other things necessary to successfully run a local nursery. I think there should also be a system of instruction showing how trees are grown in local nurseries.



M. Pierce—I want to say a word about the Jewell nursery. It once did get a carload of trees that came from the east; they were sent out to Nebraska. The Jewell nursery grows nine-tenths of the trees they are selling. I am in a local business; I never put an agent in the field and never will. I sell direct to the grower. When I went into the business every one said I was a fool, but now there are men who are putting out 500 trees. I never talked trees to them and never will. When they come to me to buy trees I give them all the advice I can.

Wm. Toole—I think the hardiness of a variety and its adaptability to climate is inherent in the tree.

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#### WHAT I HAVE LEARNED ABOUT SPRAYING.

A. L. Hatch, Ithaca.

What I have learned about spraying is known to the general public and need not be repeated here. We will rather consider some important matters concerning spraying and give some conclusions from my experience and study.

I will state that the following are the most practical materials now generally used: kerosene and kerosene emulsion for aphids or plant lice, bark lice and chinch bugs; Bordeaux mixtures for rot, mold, scab and blight; Paris green for all leaf eating insects and codling moth or the apple worm. The last two may be combined to effect two objects at once, but not the two first. It pays to spray all kinds of fruit trees, grape vines and potatoes generally, but I am not prepared to say that it is of any value on strawberries, raspberries or blackberries, while it is reported as being quite successful on gooseberries and currants. Perhaps where failure on any of the plants occurs it is because not rightly done at the right time.

Spraying is generally preventive rather than remedial, and it should be borne in mind that foliage that grows between

times of spraying is not directly protected. If the parasitic fungus is very active from extremely favorable weather for its development then it may find lodgment upon the tender tissues of the plant and penetrate too far into its structure to be reached by the next spraying. Hence, foliage should not be left too long unsprayed, and spraying should continue until all the leaves have expanded or until sufficient foliage is protected to mature the plant's crop of fruit.

To fruit growers who have apple orchards the hardest problem we have to contend with is the second brood of codling moths. The complete infesting of all late apples leads us to wonder if our spraying was faulty. Our apples, maturing by September 1st or sooner, such as Duchess and Tetofsky, were quite free from worms, while Golden Russett, Walbridge, Talman and other late sorts were very wormy. Close examination showed me that the trouble was due to a second brood of worms that our early spraying could not affect. We found this second brood goes into the apple almost anywhere, and seldom in the place where the first brood enters, viz., in the calyx. Hence, any lodgment of poison in the calyx of the apple, no matter how persistent it might be, would not prove a remedy because the moth would not deposit its egg there.

Believing this so important a matter in spraying, I wrote to the chief entomologist of the United States and herewith present his reply:

Department of Agriculture,  
*Division of Entomology,*  
 Washington, D. C., Nov. 16, 1894.

Mr. A. L. Hatch,  
 Ithaca, Richland Co., Wis.

My Dear Sir:—I am much interested in yours of 12th instant. I have read it with care and am inclined to think that the only possible explanation is the development of a large second brood in some neglected orchards near by, which fly to your trees in late July or August and oviposit. If this should prove upon study to be the case, of course your best means of defense would be to spray again at the proper time. The ascertaining of the best time for this midsummer spraying is a point which will have to be worked out by you or by Professor Goff or some one more or less trained in such mat-

ters. Professor Smith, of New Jersey, has recently surprised us by showing that at New Brunswick there is probably but a single brood of the codling moth. This had previously been indicated in a paper published in one of the Maine reports, but which has not received general attention from entomologists, and it now seems quite possible that the single brood is the rule in the New England states and New Jersey, and, therefore, of course, in all probability, in New York and Pennsylvania. We know, however, with equal certainty, that it is double brooded in Illinois and Iowa, from the exact observations of Le Baron in the former state and Gillette in the latter. From Le Baron's observations the moths issued from the latter part of July on through the month of August, but the majority of them made their appearance by the middle of August. This would indicate that about the middle of August would be the best time to spray for the second brood in Le Baron's locality. How it will be with you I cannot judge. There is a possibility—a bare one—that the insect is single-brooded with you. The few facts that we know, however, all point towards double-broodedness and the probabilities are that a thorough spraying between the 15th and 20th of August will do very considerable good. The use of bandages in your own orchard will not help you. All that could possibly be done by the bandages is done by your early spraying. Moreover, the destruction of fallen fruit in June and July in your own orchard will do little good, if I understand the matter rightly, as the first brood of worms is already killed in your own orchard. You speak as though you knew breeding places not under your control where this second brood of moths issue. If so, and it is possible by any effort whatever to get this place under your control, that would be the best way out of the difficulty.

With regard to the new arsenate of lead, you will find comments in No. 2, volume VIII, *Insect Life*, on pages 123-4, which give the result of our experience at this office with this mixture. I visited the Gypsy Moth commission last summer when they were spraying with this substance near Boston and found them using it as strong as ten pounds to one hundred and fifty gallons of water. Buying the arsenate in such large quantities they were able to get it at seven cents per pound. In no case did I see any damage to the foliage after its application.

Yours very truly,

L. O. Howard, Entomologist.

I could not see how it would be practical to spray in August, and in answer to my request for more light, received the following:

United States Department of Agriculture,  
Division of Entomology,  
Washington, D. C., November 26, 1894.

Mr. A. L. Hatch,  
Ithaca, Richland Co., Wis.

Dear Sir:—In reply to your letter of the 22d instant I have to say that you have stated the whole argument and principle of spraying for the codling moth very accurately. A second spraying late in the summer will, as you suggest, rarely be practical or effective, and it is therefore all the more necessary to see that the spraying is well and thoroughly done before the apples turn down on the stem. Arsenicals are not apt to be as persistent on the leaves as the Bordeaux mixture, not being as finely powdered as the latter; but London purple will be superior to Paris green in this respect. It may be that the new insecticide, arsenate of lead, referred to by you, will be more valuable than the old arsenicals, on account of its greater persistency, and I hope you will give it a trial on your apples, as you suggest. The method of applying it is described in a foot note in *Farmers' Bulletin*, 19. You might also make a test, if you have the opportunity, with London purple and lime, adding glucose, as is done with arsenate of lead. I shall be very glad to have you report results. The spraying treatment may also be profitably accompanied by the banding method to catch the larvae; and the two together will very materially protect the fall and winter apples. All this work, however, as I think I wrote you in my last letter, is dependent to a great extent for its results upon your neighbors. If the neglected orchard which you mention is in close proximity to your own, your chances for perfect apples are small, unless you can spray that orchard also.

Yours truly,

L. O. Howard, Entomologist.

Desiring fuller information I wrote Prof. L. H. Bailey, of New York, and received the following letter giving about the same advice as Mr. Howard gave, to spraying in August:

Ithaca, N. Y., Nov. 28, 1894.

Mr. A. L. Hatch,  
Ithaca, Wis.

Dear Mr. Hatch:—We have had some difficulty with the second brood of codling moth the same as you have. We find

that the best thing we can do is to kill the first brood by very thorough spraying. We rarely have any difficulty with the late brood if we spray well two or three times earlier in the season. If the second brood, however, should seriously interfere with the winter crop, I think that I should spray for them in August, although I might have some hesitation in doing so upon fall fruit. I will send you my plum bulletins.

Yours very truly,

L. H. Bailey.

Another letter from Prof. Bailey leaves the matter practically where Prof. Howard places it:

Ithaca, N. Y., Dec. 31, 1894.

Mr. A. L. Hatch,  
Ithaca, Wis.

My dear Sir:—I am really very much in doubt as to whether I ought to recommend you to spray apples in August or not. In our state where we always had heavy fall rains, I should have little hesitation in spraying winter fruit in August, but I know nothing about the summer climate of your part of Wisconsin. I still think that the best thing for you to do is to spray very thoroughly early in the season for the first brood and to continue this spraying longer than is usually recommended. I dislike to give any advice without having made direct experiments and I therefore prefer not to answer your question directly.

Yours very truly,

L. H. Bailey.

The conclusions then are:

First, that thorough spraying will save our early apples free from worms and is necessary to prevent the production of a second brood.

Second, that spraying in August or September is not practical with the insecticides at present in use.

Third, there must be co-operation among apple growers in early and thorough spraying, and in the destruction of worthless trees that serve as breeding places for moths, for no man can alone overcome this second brood when it is produced without restraint on neighboring orchards.

Fourth, since only about one-half the worms remain in the apples until they fall off, it is better to pick infested apples by hand and destroy them before the worm escapes, and thus also thin the fruit at the same time.

Another conclusion I have come to is that spraying has come to stay and while it has not accomplished all expected of it there is good pay in it when correctly used and much yet to hope for in new discoveries of harmless insecticides and better methods, and we hope the experiment stations will earnestly endeavor to work out these problems for the benefit of horticulture.

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### WHAT I KNOW ABOUT, AND MY OPINION OF, SPRAYING.

A. J. Edwards, Ft. Atkinson.

My experience in this line of work is somewhat limited; having used a sprayer but three seasons. I shall, therefore, make what I have to say more in the form of a report than a paper. During the three seasons we have used a sprayer we have proved the truth of the old saying, "what is worth doing at all is worth doing well." I believe that unless done at the proper time and well done, spraying will not be a success. The first season we used, or started to use, a sprayer we had one of the little pumps that set in a pail with about three feet of hose. After trying to spray a few large trees with it and getting more of the poison on myself than I cared for, I gave it up.

The next season we got a regular spray pump, mounted it on a barrel, and were ready for business.

Only a few of our trees blossomed and we neglected them, not spraying them as we should; but could see good results from what we did spray.

Last spring I determined to know what the result of spraying rightly done would be. This was the result:

From one tree we picked eight bushels of first-class apples. We sold part of them, and could have sold all, at one dollar per bushel. I will further state that during the eight years previous to this we had not picked a bushel of marketable fruit from it, although the tree was of bearing size, and had the

same care, with the exception of spraying. Our other trees did equally as well as this one.

This spraying was done for codling moth or apple worm. We used one pound of London purple to one hundred and fifty gallons of water. The first application was made when nearly all the blossoms had fallen. The second, ten days later. As this was followed by a rain we had to go over them again as soon as the weather was fair.

This last application injured the foliage some. Next season we shall use the Bordeaux mixture adding the London purple or Paris green to it. We expect in this way to not only destroy the worm; but also to prevent, largely, the scab and other fungus diseases. We also have several cherry trees that for a number of years have blossomed full; but have matured very little, if any perfect fruit. These we sprayed at the same time we did the apple trees, making the solution about 250 gallons of water to one pound of poison. Last season the trees hung full of fruit with scarcely a wormy one to be found. I credit it, very largely, to spraying. We used the same solution on rose bushes and the slugs disappeared very soon after. We used the same machine for fighting the currant worm on our currants and gooseberries, using one ounce of white hellebore to two gallons of water. We find this sure death to the worm.

We have, in our vicinity, quite a number of men who are using sprayers. I will give you what some say of them. John Spry, a fruit grower, has sprayed his orchard for several years. He told me that, with him, spraying was a success. His trees are vigorous and healthy and he has very little wormy fruit. Our secretary, A. J. Philips, told me last fall, that in his travels about the state he had not seen another orchard loaded as heavily with fruit as this one was. Mr. Spry uses Paris green instead of London purple. I do not think it makes much difference which is used. We prefer the latter, however, as it dissolves more readily. A neighbor whose orchard I sprayed last season said he had been on the place eight years and had not had enough fruit (although the trees were of bearing size), so that he could tell what varieties he had.

This season he had a fair crop of apples and only a small per cent. of them were wormy. I do not want you to understand that I think spraying has done all this, for many who did not spray last season had fair crops of apples, as it was a good apple year with us. But I have noticed, that on the trees that were sprayed, the apples had fewer worms, were fairer, and hung on better than those that were not sprayed. Going back to 1892, which was a poor apple year with us, one of our neighbors told me that his sprayer had made a difference of one hundred dollars on about one hundred trees. He also sprays for mildew and rot in his grapes. I could give you a number like the above, but it would be only a repetition, so I will close by saying, from our own experience and that of our neighbors, I believe if we are to raise nice fruit, we must spray.

M. A. Thayer—Do we understand, Mr. Hatch, that spraying is of no benefit to raspberries and blackberries?

A. L. Hatch—So far as my experience goes it is of no value. We cannot recommend spraying for rust on raspberries, nor can we in the case of strawberry rust.

M. A. Thayer—Is there any question with regard to the benefit to be gained by spraying potatoes for blight?

Prof. Goff—We thought one year that we received a benefit of fifty bushels more to the acre that could not be ascribed to any other method, but in our experiments since then, we found that spraying did not produce any beneficial results.

A. L. Hatch—Mr. Edwards, did that neighborhood bear apples the preceding year, in 1893? Was there any number of bushels of apples there? What I want to know is, was there an immunity of worms because of the small amount of fruit borne the preceding year?

A. J. Edwards—Yes, there was but very little fruit.

A. L. Hatch—You must take into consideration that the time of ripening and the amount of the preceding crop has a strong bearing on the question.

Wm. Toole—I had a Duchess that bore a fine crop, while the year before you could hardly find an apple worth picking. I notice now that the question is being considered about keep-



ing down the worms and about the scab. I believe the only trouble we get from the curculio is the mis-shapen form. I have never sprayed raspberries. In a time of drouth I think they are troubled with the red spider. I got pyrethrum powder and used it as we do the hellebore, a spoonful in a pail of water. I am satisfied we can benefit our raspberries by spraying to keep down the red spider which troubles them very much in a dry season.

M. A. Thayer—Most of the growers of raspberries and blackberries know that the business is seriously injured by what is called anthraxnoe.

I want to ask Prof. Goff if we may not expect to receive benefit for spraying for that?

Prof. Goff—I would like to hear from Mr. Tobey with regard to that.

C. E. Tobey—We sprayed thoroughly, giving two sprayings last year and three this year. We commence as soon as the canes are up and we can spray thoroughly, we give the first spraying, then after the leaves are fairly out we spray again.

J. C. Plumb—I think last year that Prof. Goff presented a paper on the Cumulative Effects of Spraying. If there is any one here who has tried spraying and is not satisfied with the results, I would advise him to try again.

In 1894 I commenced spraying and got a fine crop of apples. My neighbor, just over the fence who had been spraying three years, got an enormous crop of apples. I saw one tree in his orchard that had no good fruit on it. I said, Mr. Wilbur, what ails that tree? He said, "it stands on my land, but it is in the corner and spreads over your pasture. I did not spray that tree."

A. L. Hatch—I understand that in Michigan they have a spraying law and they have worked out this problem that if one sprays, all must spray. It is no use for you to spray unless your neighbor sprays.

Secretary—When Mr. Spry informed me that he had been spraying for three years, I thought if I went there I might learn something. I went to his place and found that he did it quite thoroughly for as soon as there came a rain he immedi-

ately sprayed again. Judging from his experience, I think spraying pays.

Mr. France—I like, as our brother, Hatch, says, to make a thorough, satisfactory test, and so I made a trial in a little orchard of plums for five years, they are mostly De Soto. I sprayed one part, and one part I turned the chickens into. I then tried shallow cultivation, I do not like deep cultivation, and it was a success.

Geo. J. Kellogg—Mr. Tarrant has better soil than I have; he lives six miles east of me; he always had some good apples, while I did not. This year I sprayed and the boys said, when they came to pick the apples, that they could not see any difference where the trees were sprayed or where they were not. I believe there is a good deal in spraying, and I believe there is a good deal of humbug in it.

M. Pierce—I destroyed the caterpillar by spraying. One thing we have never had is the codling moth. I have been bothered by the gouger, on the Wealthy, more than anything else. I would like to know if there is anything for them?

Prof. Goff—What do you call the gouger?

M. Pierce—I mean something that gives an apple every shape but what it ought to have.

Chas. Hirschinger—I told the horticultural brethren several years ago that I never would spray. I thought it was a job for life but, I finally made up my mind that I must spray or quit. I bought a spraying apparatus that takes four men to run it. I sprayed to kill. We trotted our horses right through. I sprayed contrary to all directions. They say you must not spray so that it will drip, but I let it drip. I got my sprayer late. When we went to gather in the apples I found the apples had spots on them, but they did not bulge up as they usually do. I have about made up my mind that I do not know anything about spraying at all. I have killed a good many things, but I have that little thing that Mr. Pierce speaks of.

A. G. Tuttle—I have never done spraying very thoroughly, but I have tried it for several years. I had one tree of Whitney crab standing near my house and I sprayed that tree thoroughly. I do not believe there were ten apples on that

tree that were not stung by the codling moth. I wound a grain sack around the tree and when I took it off I carefully counted and I found 300 codling moths in and around that sack, and I do not believe the spraying did any good. I have killed *curculio* with vinegar.

Geo. J. Kellogg—Last season I sprayed pretty thoroughly. In spraying my apple trees I sprayed as far as I could in the drive on the plum trees. Of the De Soto that I sprayed, I had a good crop of plums, and those that I did not, were equally as good.

Mr. France—There is a little green insect that I sprayed to destroy. I sprayed strong enough to destroy the leaf, but it did not destroy the insect.

Geo. J. Kellogg—Give kerosene emulsion.

Prof. Goff—I think the gentleman refers to the aphid. Paris green does not kill them, but kerosene emulsion will kill them. The best time to apply is early in the spring, before the leaf expands.

A. L. Hatch—The eggs, which are black and shiny, may be found now, will hatch out just before the bud expands, if you will apply the emulsion just at that time you will kill them.

Mr. France—I would like to suggest that certain experiments be assigned to different ones to carry out during the year.

Adjourned.

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Tuesday Evening.

## THE RELATION OF HORTICULTURISTS TO SOCIETY.

Franklin Johnson, Baraboo.

Mr. President, Ladies and Gentlemen, Fellow Horticulturists:—It affords me special pleasure to address you upon this occasion, because your presence at this time and place is, of itself, an indication that you are pursuing horticulture for

something more than just the money there is in it. Of course the money consideration is very important. We each want all we can get; but we seek it as a means to an end, and not as an ultimatum. As some one has said, "We do not love money, we simply love to spend it."

The fact is "no man liveth unto himself," and I believe I voice the feelings of all present when I say we don't want to.

We are ambitious of a higher plane of living for the entire community. We wish the world to be the better for our having lived in it, and we love horticulture for the special opportunities it gives us for exerting an influence on the homes and in the home life of our respective communities. We consider the home the foundation of society. That which adds to the beauty, the comfort, the attractiveness of our homes, must of necessity tend to the uplifting of society, and the advancement of our country.

Apropos of this thought let me quote from the Hale Brothers: "When every man, woman and child in the country has the love of nature in their hearts, that comes from the cultivation and association with choice fruits and flowers, we shall have advanced a long way towards the time of right living and right thinking that will do away with all conflict between man and man."

I agree with Mr. Hale further, when he says that no one should go into the business commercially who has not a real love of nature in his or her heart and can find a real pleasure in the development of plants and trees.

Of course it is possible for one to have this love for nature and yet be incompetent to make a success of raising fruit or flowers for market.

It is one thing to raise a crop of berries and quite another thing to successfully harvest the same.

Many a man, after raising a fine crop of berries, has found himself in a situation somewhat similar to that of a Frenchman who, once upon a time, was taken prisoner by the Turks. At this particular time the Sultan was building a palace and was sorely in need of some one to fresco it.

Hearing of the new prisoner, he summoned him into his

presence and inquired if he were French. "I am," replied the Frenchman. "Very well," said the sultan, "all Frenchmen are artists. I want an artist to fresco my palace. You may go to work." In vain the Frenchman protested that he was only a shoemaker and that he could do artistic work only with hammer and awl and waxed-end. "I see," said the sultan, "all Frenchmen are liars as well as artists. You may fresco my palace or I will take off your head."

Seeing no alternative, the Frenchman went to work with a will. He studied frescoing night and day. As the work progressed he acquired skill as well as knowledge and even confidence in his own ability. The result was he did a very creditable job. The sultan was so well pleased with his work that he complimented him and gave him his liberty. The son of St. Crispin went back to his beloved France a great fresco painter.

A single man with the occasional help of a boy or two can plant and cultivate a crop of berries that will require from forty to fifty persons to harvest. You see this introduces a new element. The horticulturist must not only be a successful cultivator, but he must also be a good general. The picking campaign needs to be well planned, and then, in order to be successful, it must be carried out with energy and skill.

The picking of fruit for market is a delicate operation. It requires not only skill but judgment. No machine, however ingenious, can come in here. The hireling and the slave are alike worthless. One of the most difficult, and at the same time, one of the most essential things in harvesting the crop is to establish among your force of pickers a spirit of loyalty.

You want those who are willing to make your interests their own. This spirit once established is comparatively easy to maintain. Some persons can never acquire this power over others. It is not born of indifference. There is a unity and a harmony that runs all through nature. If you have that sympathy with living plants which induces them to do their very best, you probably can acquire a similar influence over living human beings, provided, always, that you are willing to be guided by that matchless rule, "Whatsoever ye would that men should do to you, do ye even so to them."

In no sphere of life is it truer than in the berry field. "The same measure that ye mete withal, shall be measured to you again."

Many of us small-fruit growers are so situated that we depend largely upon pupils from the high school for our pickers. They come to us fresh from school at a most susceptible age, and, with very many, it is their first introduction into the business world. What an opportunity we have here to make lifelong impressions.

In the model berry field the picking campaign has been well planned. Everything is brought down to a system where each person has a particular thing to do. If the plan is well carried out, each person is given credit for exactly the amount of work done and at the same time held to a strict accountability for the manner in which it is done. There is perfect liberty of action with no visible restraint except the constraint to do well, and Christian courtesy is the rule. A few weeks of hard, painstaking labor like berry picking, under the conditions described above, makes an impression upon youth that lasts for life and it is an impression for good.

There is a subject to which I wish to invite thought, without stopping to discuss, for it is a subject of such size and importance that the discussion of it would require a volume. I refer to the manner in which our cities dispose of their refuse. The present plan is to put everything as far as possible into the sewer. The sewers empty into our streams and thus the whole land is polluted. Every water course reeks with the filth of our cities. The beautiful streams intended by nature to purify the atmosphere are laden with the germs of disease and instead of being rivers of life they are rivers of death.

From the least of our cities to the greatest, the sewage system as it is now conducted, is heathenish.

Perhaps you are wondering what all this has to do with the relation of horticulturists to society. Well, it is just this: A great deal of the refuse that these cities are at so much expense to, worse than waste, has a value to us. We ought to have it. We can have it. We shall have it, when we do our whole duty to society. I promised not to discuss this ques-

tion, but having denounced the present system, perhaps I ought to make one suggestion toward improvement.

As General Booth has well said, "The solution of every social difficulty is to be found in the discovery of two corresponding difficulties." In this case the difficulty these cities experience in disposing of their refuse corresponds with the difficulty market gardeners and fruit growers experience in getting fertilizers in sufficient quantities for their intensive method of farming.

We now utilize the excrements of animals that are dropped during the night. Probably an equal amount is dropped during the day and most of this is lost. Where the streets are unpaved perhaps this loss is unavoidable, but in the case of paved streets, I believe it can be saved with less expense than is now incurred in its removal.

The refuse of our small cities can be removed, as at present, by the use of teams. What is most needed here is a system that will insure its prompt removal, and the utilization of the sewage. The past season has convinced some that irrigation is necessary in order to insure success in raising fruit, even in Wisconsin. If we must irrigate, why not use sewage for the purpose and thus enrich the land while supplying it with needed moisture? Some of our cities are so large that it does not seem practical to remove even the coarser refuse by the use of teams and wagons. Why not utilize the street railways in its removal? They form a network that extends to every part of our great cities. It would be comparatively easy to load all of this refuse upon street cars constructed especially for this purpose and left at convenient points in every part of the city. Each night every loaded car could be run to its destination—the fertilizer works, or the soap factory, or the market garden; or the street cars could be dumped upon steam railway cars and thus this material could be conveyed to distant points where it could be utilized. This removal could be accomplished between midnight and three o'clock a. m., thus not interfering at all with the passenger traffic of these lines, but giving them an additional source of revenue, and at the same time removing from the streets of our cities many of the obnoxious sights with which they are now disfigured.

What of the outlook for the future?

No one understands better than the horticulturist that there is a time for all things. There is a proper time for preparing the ground, for sowing the seed, for setting plants, for harvesting the fruit. If the proper time for these operations is not improved, no amount of labor and care afterward can make up the loss. This principle holds good in other things. As the old adage expresses it, "The golden ball is thrown up once in a man's life time, happy is he who stands ready to catch it." We all understand that at present our country is under a cloud of business depression. What better time is there than a cloudy day for setting a new plant? Do the horticulturists of Wisconsin appreciate their opportunity? Within or very near our borders are cities whose aggregate population is over four millions. We have a soil and climate admirably adapted to the raising of small fruits. To give each one of these four millions even a taste of berries would require fifty car loads. To give each one a quart would require two hundred and fifty carloads. The market of these cities is open to us. We may now enter this open door but in time the sources of supply will become established and those who are not in it will then find it difficult to enter.

An epidemic of municipal reform is sweeping over the country. It is comparatively easy now to introduce new methods of disposing of the refuse of our cities. Here is another open door of opportunity.

Do not the signs of the times and loyalty to the motto of our state command us to "go forward."

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## A WINTER IN TEXAS.

Lelia Robbins, Platteville.

Winter in Texas, or the lone star state, is very much different from a winter in Wisconsin. I shall not undertake to tell you of a winter in all parts of Texas, so great is its magni-



tude, and so varied its climate. It equals in size the five states of Wisconsin, Minnesota, Michigan, Indiana and Iowa combined. It is 1,000 miles from north to south and nearly that from east to west, and almost every thing that grows will find a soil suited for it somewhere in Texas. It only needs men of energy to work the soil in the right manner to show how grand a success fruit raising would be. The tendency of people living in the south is to get lazy. God has done so much for this country that the people seem to think there is nothing for them to do but harvest good crops with scarcely any effort on their part. They bring up their children to look upon work as a disgrace, and negroes are for the special purpose of working for the white people. The slackness, carelessness and indifference of the native southern farmer is proverbial. There are many excellent farms but they are managed by either a northerner or a German. Nearly all the manufactured goods used by the southerners are made in the north and Wisconsin is fairly well represented in this line.

Twenty-five years ago Texas did not have the shipping facilities it now has. A great many of the large farms or plantations are being cut up into smaller tracts for the purpose of raising fruit. In the southern part of Texas can still be seen the 1,000-acre plantations owned by one man who has his own factory, residence and a long row of shanties called the "negro quarters." Cotton brings this year \$35 a bale and it takes two acres of land to raise one bale of cotton; in other words, one acre of cotton is worth \$17.50 besides the seed from which oil and feed are produced. Grapes are grown extensively at Laredo, and at Galveston the land is being drained and used to raise fruit which is very successfully done. Dennison is the great strawberry region, and Dallas blackberries are well known all over the state. Along the Red river can be grown beautiful apples. Peaches, pears, oranges, persimmons, and even bananas, can be grown in Texas. I made a trip out to the nursery of a Mr. Howell, who has been several times president of the state horticultural society, and I am told he is as good authority as I could find on the fruit subject. He says blackberries are the best paying crop that can be raised here. His

favorite are the Dallas and the Trinity Early, both of which he found growing wild and are natives of Texas soil. They are earlier than the Early Harvest by five or six weeks. Mr. Howell has kindly offered me some plants of these varieties to take to Wisconsin with me, and I think if they will succeed and ripen even two or three weeks earlier than the Snyder, it would pay the Wisconsin fruit growers to have them. They say strawberries are a failure here on account of the dry weather, but I think one reason is that they set the plants in the spring and allow them to bear that season which weakens the plant so that it cannot stand the hot weather. They set Sharpless, Capt. Jack, Crescent and Chas. Downing. They have never tried Warfield or any of our newest varieties. Raspberries are not grown here to any extent.

Although it is so much warmer in Texas than it is in Wisconsin, there are times when the weather will change very suddenly. One may go on the street dressed in summer clothing and in ten minutes time a "norther" may sweep down across the prairie belt and it will be cold enough to freeze all the waterpipes in the city; thus it is that the plumbers' business is very profitable in this part of the state. A few days before Christmas the roses were still in bloom on the lawns, and there are days all through the winter that one can sit on the "galleries," as the southerners call their porches. As I sit writing this paper, the 23d day of January, it is comfortable with no fire in the house and warmer still in the sun.

Christmas in the south is much like fourth of July in the north. The southerners say they do not care to celebrate a day on which their liberties were taken from them, and the fact that Vicksburg fell on the fourth of July still remains fresh in their minds.

The houses in Texas are a curiosity to a northerner. The majority of them have no cellars and are not plastered. They simply stretch cheesecloth over the inside wall and paper over that. This is done in houses that rent for forty dollars a month. Of course it does not cost nearly so much to build fine houses here as it does in the north. Dallas is noted for

its beautiful residences and lawns. Winter in the south is much more comfortable than winter in the north, still, to my mind Wisconsin is good enough for me, could winters thrown in, and there are no more hospitable people than we have in our own state, and no better fruit farms any where than Wisconsin can boast of, and I claim that we can raise as good fruit as any state in the union.

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### EVOLUTION OF HORTICULTURE.

L. M. Benedict, President, Waupaca County Horticultural Society.

Ladies and Gentlemen, Fellow Cultivators:—I would feel great reluctance in requesting you to leave such pleasant surroundings and accompany me on a breathless slide down the slippery slope of past time in search of the origin of our beneficent calling, horticulture, where, if we should land with a breath of life in us, we would be compelled to toil back up hill to the joyous present. Realizing this inconvenience, I have made a few trips lately, with broom in hand, to brush away some of the cobwebs which obstructed the vision down the long vista of centuries gone by, and constructed a new instrument which is to the mental vision, what the telescope is to the material sight, a paleoscope, or ancient viewer. Like most new inventions it is crude and imperfect and it is well for delicacy that it is so, for there were many sights in primeval times, when first the race of man began to be human, too shocking to be viewed in the bright light of the present civilization. Men and women were there with as little clothing as covers the arms and shoulders of the ultra fashionable belle of today, or as naked as the billowy bosom of mother earth in Sahara. They lived in restricted habitat; used such material fruits as came in their way and thought and fretted not for the morrow. Gathering fruit and roots under such circumstances is not horticulture. Therefore, we

conclude we have projected our vision too far into the mighty past. Please shorten the foci of your paleoscopes a few thousands of years and look again. Ah, there is a little suggestion of home in that wreath of blue, curling smoke. Prometheus-like, man has learned his first lesson, caught a spark from a lightning flash and taken the first tottering step toward the civilization that is to warm and move its millions with this element-fire. It requires no great stretch of imagination or no great power of burnished lens in paleoscope to see the paternal concern and expectancy of the All-Father as he supports his best creation for this effort, and the maternal pride of mother earth as her hands and lap are encouragingly presented as a goal for the grown up toddler, or hear the glad shout of angelic voices when the feat is successfully accomplished. Wonderful step, prophetic of cooked food, ocean navigation, railroad travel electric appliances and horticulture. But as yet no gardens, only a sickening Billingsgate odor, for this was the fishing age, from which we escape by again adjusting our paleoscope.

What do we see? Man grown madly wild with conscious power over his new invention, the elastic bow and swift flying arrow. Surely that changeable scene, the feast of today, the famine of tomorrow, the uncertainty of the future food supply, can belong to none other than the hunting age. But again no gardens.

However, have patience, for the time is pregnant with the child that is to make the next succeeding age and all posterity better and more comfortable. While the hunter roamed, the wife with laborious travail gave birth to that beautiful babe, horticulture. Hair, like silk of corn, day's eyes (daisies), peach cheeks, strawberry lips, breath of roses, and clinging tendril fingers. Veritable babe in the woods! Only instead of being covered by robins with withered leaves it is destined to be robed in shining green, tasseled plume and fragrant wreathes. Kind friends, this is no exaggerated trope. To patient, toiling woman belongs the credit for originating this earliest rustic industry—horticulture. For upon the weary shoulders of our early mothers was ever placed the care of the first gardens.

The preparation of soil was very simple as was also the cultivation following planting. The trees were girdled with stone axes and, when dead, fire completed their destruction, thus fulfilling the prophecy. When the land became foul with weeds and bramble, a new location was chosen and the operation repeated, fire in a measure taking the place of beasts of burden which they had not yet domesticated.

The products were few in number and hardy in kind. Throughout nearly all of America many tribes had reached the horticultural stage, while Mexico and Peru had advanced a step higher, to field culture, in 1492, and cultivated corn, beans, melons, in Peru the potato and in Mexico many flowers. In the old world wheat lentils, etc., were cultivated ere the pyramids were built.

The next age brings us within the realm of tradition and we lay down our paleoscope to pick up our Bible. I see you have anticipated me and even now are enjoying the sights and scents of Eden, that ideal creation of an omnipotent creator. I would prefer to come upon the scene after the occupants were "At Home," thus avoiding the difficulty experienced by some in getting them there. You doubtless remember the good old darkey preacher who said: "My brederen, when de Lawd made Adam out of clay, he stood him up agin de fence to dry." Some one in the audience called out, "Who made dat fence?" He answered, "Don' ax such questions or you'll bounce all the theology outen my head."

For my part I cannot help believing that He who made the perfect garden took from that past period of which we have just spoken a pair to rule it. My reasons for thinking so are apparent; for did not Adam lie around in the shade, watching the deer play, wishing the while that he had his gun (plainly showing a relic of hunter instinct) while industrious Eve was busy looking after the garden. Her very virtuous care aided her fall. Coming across that wonderful tree of knowledge and already knowing the difference between a wild crab and a fall pippin she gathered a lapful and went unselfishly to share with her husband. To his manhood be it said he partook, but for shame on him that he tried to dodge the consequence by

blaming Eve, and may that woman who thinks if she had been Eve, Adam would still be in Eden, pine in old maidenhood.

What though they lost their garden did they not gain wisdom? And that of a kind and in a way prepared by the All-Wise Teacher? Not the least of the knowledge gained was how much better it is to attend the garden than go chasing after a wild goose that may never be caught. This to Adam's credit though he was slow to learn it: Hereafter, thought he, Eve's garden shall be my care; our lives shall be spent pleasantly toiling together, we have lost one garden but we will gain another.

How near I think we, his children, are to realizing this desire of Adam to regain his lost inheritance may be illustrated by a little incident at the world's fair. We stood admiring that finest display of apples seen since Eden's gates closed behind our first parents, the Wisconsin exhibit at the White City, the central attraction of which was the product of Waupaca county orchards. A lady from Michigan stopped with uplifted hands, eyes wide with surprise, and the exclamation, "I did not suppose they could raise even thorn apples in Wisconsin! But just look at that fruit!"

"Certainly they can, madam," said I. "It was my good fortune to be born and raised up in Wisconsin at Waupaca. Of course you have heard of Waupaca! Why, the nurses at the Woman's building nursery over yonder lull their hundreds of checked babies to rest singing of the beauties of Waupaca. Chicago mothers make this a condition of their patronage, knowing well its soothing influence. Well, up at Waupaca they have been digging away ever since our parents were snaked out of Eden, to do their part of the 'sweating' and get back their inheritance. About forty years ago the tree from which came all those Northwest Greenings was Hatched at Iola, a beautiful suburb of Waupaca. There is a legend in the family of Mr. Hatch to the effect that the seed was found in an obscure nook of the garret tied in the corner of a napkin figured in a peculiar pattern of fig leaves and faded roses and marked 'E.,' from which it is supposed they were brought direct from the old garden by our ancestral mother.

"About that Wolf River seedling over there I do not remember much only that the originator, Mr. Wm. Springer, of Fremont (another suburb noted for its fine fishing and hospitable people), is well known to be a lineal descendant of Adam and Eve, and could undoubtedly tell us all about its history. Any-way the apple is with us to stay and *isn't it a beauty!* With orchards bearing such fruit, gardens of luscious berries and succulent vegetables, great fields of multitude-feeding Waupaca potatoes, lakes and streams flashing light like gems of the first water that they are, every school district a nursery, growing young trees of knowledge, with a stately tree already in full bearing in our high school, a veritable forest of orchard in the university at Madison, a land where love rules and hate has become a lost art, where babies are as numerous as their mothers are happy, in such a place do you not think God's plan for the elevating of his children is fast being worked out, that we are beginning to realize the beauties of that Eden whose prototype was lost in the long, long ago?"

The two impulses uppermost in a Waupaca man's breast are expressed admiration for county, friends and their belongings and that hospitality which enjoys most keenly that which is shared to make others happy. The latter emotion seized me and I forgot we were only a little band of horticulturists, that our berry patches are mostly new, that the cows may go dry and cream may be scarce, in fact forgot everything a man will forget (and a woman as surely remember) and said: "I cannot give you any idea of what we have up at Waupaca, but you and the old gentleman come out to our June strawberry festival and bring along all *these friends* that they may view the promised land." Just then "these friends," a half-million strong, poured like a merry stream of humanity down upon us and bore us to other sights and thoughts. But ever as I recollect the great fair my mind returns to the Wisconsin exhibit of fruit, the more remarkable since it was in a building full of the rich, ripe, fragrant product of every clime.

My friends, we may never meet one of the delighted millions who thronged those halls but of this we may be sure: people from every land will remember and remark the excellence of the apple display from Wisconsin at Chicago.

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I have seen the settler open a new farm. I have seen the first fruit tree agent visit the family and display his beautiful pictures of fruit that the parents declared looked so much as the fruit did "down home." I have seen the flock of little ones gathered around with wistful look so pitifully pathetic that the father forgot the difference of latitude between homestead and nursery, forgot the exorbitant price of the trees, forgot everything but the fruit hungry babes and gave the orders. I have seen the trees arrive, great, thrifty trees that would have been a delight to an Ohio orchardist, and seen them carefully planted; I have seen them even blush with the fairest of bloomy flushes at thought, no doubt, of their importance, so much was expected of them. And I have seen them withered by frost several weeks before they would have been ready to go into winter quarters. Perished trees, vanished hopes, wrecked air castles filled with luscious fruit by the little ones and the music of childish joy by the parents. And I wish every tree peddler would look to the little hopeful faces instead of looking so much for the coveted order, then misrepresent, if he could. It would be a good test of the amount of the human left in him.

Again, a tree peddler visits the settler's family. The children still long for fruit, if only to see it as mother and father have pictured it, for we must remember they have never seen a peck of apples at once. But they are not so enthusiastic as before—disappointment dulls keenness. Had it not been that this agent seemed so honest he surely would not have received the order he did. He bought his trees wholesale right from the nursery, he explained. They were a "job lot." Well, they came and were set, but of all crooked trees ever seen no one ever saw their equal, except the neighbors who purchased of the same stock. Of course you are prepared to hear they died. A neighbor said they were so crooked the sap could not circulate in them and they had to die.

Again comes the fruit advocate but not in the guise of honest "job lot" nor distance and enchantment, but as a neighbor practicing what he preaches; citing not his cuts so much as



his growing orchard; comes ready to pull off his coat and aid in setting the trees if need be, rather than see them fail from improper planting. And it is needless to add to this horticultural audience they did not fail.

"The test of a good teacher is not how many questions he asks that his pupils can answer readily, but how many he inspires them to ask him, that he finds difficult to answer." Nature is a great teacher, and the above is true of her as of any other pert schoolma'am. Varied conditions of nature, equivalent to various questions. The more rugged the conditions, the harder the answers; the harder the answers, the closer the study; the closer the study, the more resulting culture, progress, evolution, culture of mind and culture of soil mark the immense interval of time and degree between the barbarian of the horticultural period and his garden in the girdling and a modern farm or garden, orchard or berry field.

"New occasions teach new duties;  
Time makes ancient good uncouth;  
They must onward still and upward,  
Who would keep abreast of truth.

Onward, onward, onward ever!  
Human progress none may stay,  
Let us act that each tomorrow  
Find us wiser than today."

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#### DISCUSSION.

J. S. Stickney—There is a sentence contained in the paper by Mrs. Robbins that strikes me as very, very true; that is where she refers to Wisconsin as being "good enough" and that we can raise as good fruit as any state in the union. We will find, wherever we go, disparagements. We can make a great deal of our own surroundings if we try to do so. Every state has its drawbacks as well as its advantages.

A. G. Tuttle—A friend of mine bought a place near Gal-

veston. We heard of his eating green peas on Christmas and in two days after his garden was all destroyed by the frost.

N. N. Palmer—I think northern Florida is the healthiest place on earth. The first winter that I spent in De Funiah Springs there were only three deaths. One member of each family that was there, was there on account of poor health.

J. S. Stickney—I think Mr. Palmer has done the wisest thing possible; he has taken the best of two states and so gets along very nicely. Sixteen years ago I went through the south. In our party were our old associates, Mr. Stilson and Mr. Kiels. Mr. Stilson was captivated and remained in the south. Ten years afterward I visited that country again, and there were just as many acres of that fine looking land undeveloped as there was when I first visited it. While in Ft. Worth I saw loads of cotton coming in that came 150 miles to market. Team after team I saw there with boards lashed on for a wagon box, and the harness would not contain five pounds of leather; the man who drew the load—well, his whole outfit for clothing did not probably cost him over five dollars, and he could not get more than a dollar and a half for it.

B. S. Hoxie—I have no desire to go south to live. It is called a great fruit country, and I thought while I was in Atlanta that I would get some grapes for I expected to find some nice ones there, but I could not find so many in that large city as I would find in the little town of Evansville. It seems to me that it is not altogether the climate that makes the southern people indolent; it is because of the slavery system and the evils that grew out of it, and also the food they eat. Their diet consists of very little fruit and a good deal of meat and corn prepared in different forms; they use a great deal of carbonaceous food.

## REPORT OF A. J. PHILIPS.

Delegate to Minnesota Meeting, Held at Lake City, January  
8 to 11, 1895.

The first day was occupied by preliminary arrangements. Reports of vice presidents and reports of experiment stations. The attendance was large and the interest unusually good. The membership of our Minnesota brethren being over 500, it makes it easy to secure a large audience. Not being present at the Tuesday evening's session, can not give a report of same. Wednesday forenoon was taken up with a discussion of the apple. The superintendent of their tree station, Mr. E. S. Dart, of Owatonna, gave his talk on Horticultural Frauds. He said one mistake of their members was a disposition to follow strange gods, one of which was the looking after Wisconsin and Iowa seedlings instead of their own. I suggested to Mr. Dart that they had not only followed but had captured at least one strange god, for the best display of seedlings on the table was the Wisconsin seedling, Wolf River. Their show of fruit was good. Malinda, Wealthy and Longfield very nice. One noticeable feature was the absence on their tables of the two noted seedlings, Okabena and Peerless, though many inquiries from visitors were heard. The paper on seedling apples was read by the writer of this report, which drew out many questions. Wednesday forenoon was used by reports of committees on grapes and small fruits. Wednesday evening the exercises were very interesting. Illustrated Plans of Home Adornment was given in an instructive manner by F. H. Nutter, of Minneapolis. Thursday forenoon was spent in hearing and discussing papers and plans of irrigation. This was interesting, and Mr. Wolcot, of Sparta, gave an interesting talk on how he irrigated his three acre plantation with an artesian well. Thursday afternoon sweet potato growing was discussed. Reports of committees on fruit lists and vegetables also given. Having to leave Thursday evening, this report will be continued on Friday by Mr. Geo. J. Kellogg, who was present from Wisconsin on that day.

## REPORT OF MINNESOTA STATE HORTICULTURAL MEETING.

A. J. Philips, Secretary Wisconsin State Horticultural Society, West Salem.

Continuation by G. J. Kellogg—It was my good fortune to get away from institute work long enough to run down and enjoy the last day of the annual meeting at Lake City. There were some very valuable papers, final resolutions, reports of committees, and the banquet. Here the hospitality of the good citizens of Lake City overflowed. I have attended many occasions called banquets, but this exceeds anything I have ever enjoyed. The Masonic hall and its dining rooms were spread for the occasion and promptly at 1<sup>1</sup> p. m., about two hundred guests were seated and partook of the bountiful repast. Then President Underwood called to order and toasts from about twenty of the guests, interspersed with music, poem and songs, made the occasion long to be remembered.

We in Wisconsin have a good deal of "underbrush," but I do not know that we have a single tree that we call "Underwood."

This winter meeting is conceded by all as the best in their history and all due to their president, secretary and local committee.

Minnesota pays her secretary a salary of \$600 per year, and \$100 for a shorthand reporter, and through the secretary's efforts its membership counts up to 579, of which 522 are actual paid members.

Fruit lists: I was surprised that only two varieties of apples were on their list for general cultivation: Duchess and Hibernial. After considerable discussion Charlamoff was added. They add for trial and favorable locations, Longfield, Wealthy, Kaump, Gilbert, Repka Malenka, Anisim, Okabena, Hotchkiss, Peerless and Patten's Greening. Crabs for general cultivation, Virginia, Martha, Whitney, Minnesota, Early Strawberry, Sweet Russett, Pride of Minneapolis, Tonka and Dartt's Hybrid. In their strawberry list they gave a small number of varieties and Bederwood was the only one that

comes anywhere near to the front of the perfect flowering kinds. They still keep Capt. Jack, Crawford and Wilson for perfect. Crescent, Warfield and Haverland for pistillates.

Plums: De Soto, Forest Garden, Cheney and Wolf. For trial: Rockford, Rollingstone, Wyant and Ocheeda. Currents: Their list includes Red Dutch, White Grape, Long Bunch Holland, Victoria, and, by special resolution, North Star was added.

Wm. Somerville, of Viola, reported seventy varieties of Russians in orchard free from blight and doing well, seven of them of the Hibernial family, four or more of the Duchess family, and duplicates of many other groups, and some duplicates in nomenclature. He also reported having discarded 150 varieties of Russians. He has ten varieties, of the seventy, marked of greater hardiness than Duchess; five of them are of the Hibernial family.

His ten most hardy are, Hibernial, Leiby, Recumbent, Juicy Burr, Piqua, Red Annis, Yellow Annis, Korks Annis, Blue Annis and Russian Green.

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## DISCUSSION.

M. Pierce—Our numbers are large. I admit that, but is a person belonging to a horticultural society any advantage to that society if he knows nothing about it and does not work with it?

Secretary—I was up in Waushara county last week and I went to see Mr. Daniels; he is eighty-four years old and almost blind. You all remember him; he always used to come here to our meetings and bring his Northwestern Greenings. I supposed the Northwestern Greening originated in Waushara county, but I learned, while visiting Mr. Daniels that it originated at Iola, in Waupaca county. Mr. Daniels gave me these apples to bring here; he said he never expected to meet with us again but he wished us well.

I find wherever the Northwestern Greening has been set that people like it, and as it grows older it grows better.

M. Pierce—Today we were discussing the prospect of fruit for the next season, the imperfect fruit buds, etc. I find in looking over my apple trees a great many imperfect buds. I found they had never been fertilized. Some people said it was caused by the frost. I think the prospect for a fair apple crop is all right. We have in Minnesota a large amount of apples that our nurserymen are propagating and sending out that you know nothing about. I think a good deal of our stock is not first class.

Adjourned.

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Wednesday Morning, February 6.

Mr. Hunter, who is selling a gun for distributing dry insecticides and fungicides, asked for a few minutes in which to explain the gun and the mode of operating with it, and it was granted him. He said: "This is a gun for dusting with dry powders to destroy insects that affect our fruits and vegetables. It is much better than a spraying apparatus because it is much more easily and quickly handled. You can regulate the amount of powder to be used to a nicety; it takes from one-half to one pound of Paris green for an acre of potatoes. You can go over an acre or one and one-half acres in an hour. You know it's the pure powder that does the work; the water is only used as a medium of distribution.

This is Leggett's Paris green, or dry powder gun; it is provided with tubes, nozzles and straps. We have a Bordeaux mixture that is called Leggett's fungiroid, it is just as easy to use it as it is to use Paris green. Ten acres of potatoes is an ordinary day's work."

Q.—What is the price of the gun?

Mr. Hunter—There has not been any regular price fixed in Wisconsin; outside of the state it sells for from eight dollars to eight and one-half dollars. It is the best of anything ever

made because it forces the powder underneath the leaves; it distributes finely and evenly and there is no waste. It is the safest way to use Paris green because it is forced down; the powder never gets above the operator's knee. It can be used when the plant is wet as well as when dry. It is the only machine you can use that will insure spotless cherries and spotless grapes.

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### ANNUAL ADDRESS.

L. G. Kellogg, President Wisconsin State Horticultural Society, Ripon.

We have again met in annual convention for the purpose of reviewing the successes and failures of the past season, and to take an inventory of our stock of knowledge, acquired from the sad experiences of the severe drouth, so that in the future we may be better enabled to solve the perplexing problems that confront us on every hand.

On account of the recurring frosts in the months of March, April, May and June, followed by one of the most prolonged drouths during the months of July, August and a part of September, the season of 1894 will be handed down in history as the most disastrous one to the fruit industry, known for many years; not only in Wisconsin, but in many of the southern, eastern and western states as well.

With the exception of the Duchess, the apple crop was almost an entire failure throughout nearly all sections of Wisconsin. Although at present we are not classed among the apple growing states, I firmly believe that within the next twenty-five years, with the propagation and planting of our Wisconsin seedling's special varieties for special locations, in the production of fine apples we shall yet rank among the foremost of the union.

I wish to especially commend the large exhibit of fine apples at the state fair, which was due mainly to the efforts of

the members of the Wisconsin State Horticultural Society. Taking into consideration the frosts and drouth of the past season, this was a very creditable display, and should merit the appreciation of the Wisconsin State Agricultural Society enough, to give our Society, the power of recommending a thoroughly practical horticulturist for superintendent of this department.

From reports received from different parts of the state we have arrived at the conclusion that there was about forty per cent, of a crop of small fruit, which was of inferior quality.

The severe drouth not only affected newly set plantations, but every tree, shrub, vine and plant in a like proportion, which will necessarily affect the fruiting conditions for next season.

It is sincerely to be hoped that the partial failure of the past season will not be a discouragement to those engaged in fruit growing.

There is a satisfaction in knowing that through rest, the tree, vine and plant has not exhausted the elements that produce the fruit and no doubt next season, with a normal amount of rain fall, will, in a measure, compensate for the short crop of the past season.

With an ever increasing population, and a large extent of territory in the west and northwest, that cannot successfully produce large or small fruit, the possibilities of the production of these fruits is yet in its infancy and practically unlimited.

Our Society is doing a great work in educating the people regarding the right varieties; the proper methods of planting, cultivating, pruning and spraying, and if they will take heed, and plant only the best and most profitable varieties, there is practically no limit to the amount of first class fruit that can be disposed of at prices that will leave a margin of profit to the producer.

Let us then strive to maintain the high standard of excellence that Wisconsin fruits have achieved in our markets. Let us not rest content with these achievements, but strive to excel in everything that pertains to horticultural development.



## TRIAL STATIONS.

It is not within my province to give a detailed account of the different trial stations. However, I had the pleasure of visiting the station located at Weyauwega in charge of Mr. Hardin, which we found in a very satisfactory condition. Taking into consideration the severe drouth of the past two seasons, and the nature of the soil in which these trees were planted, they have made a very good growth and under favorable conditions next season will produce not a few varieties of apples, plums and cherries.

In future years these orchards or stations will be monuments to the Wisconsin State Horticultural Society and will demonstrate through "the survival of the fittest," which varieties will be of value to the Wisconsin farmer and fruit grower. Believing these stations are of inestimable value in determining the hardy or tender qualities of different varieties of fruit in different parts of the state and on different soils, I would recommend that this Society, the coming season, establish at least two trial tree stations somewhere in the north or north central part of the state. I would also suggest, for your consideration, as I deem it a matter of economy, that in the future our Society purchase all lands upon which trial stations are located.

## FREE PLANT DISTRIBUTION.

From information received from our corresponding secretary, Mr. J. L. Herbst, in the year of 1892 there were 1443 applications received for our free plant distribution, in 1893 there were 1568 applications received for trees and plants, in 1894 it reached 3036 applications.

Now, it will be readily seen from these figures that the number of applications for trees and plants have doubled within two years, and the labor of our corresponding secretary has increased in a like proportion.

"As the twig is bent the tree is inclined" and I believe our Society is doing a grand work in this plant distribution, by instilling in the minds of the children of Wisconsin the first principles of horticulture.

Many of the children by serving an apprenticeship will become true and tried horticulturists, and be ready to fill the places of those who are continually dropping by the wayside. I will suggest that the matter of free plant distribution receive your careful consideration, and if found worthy of being continued, I would recommend that this Society make some provision for the compensation of our corresponding secretary, that will be in keeping with the labor required to perform the duties of the office.

I would also call your attention to the fact that the Minnesota State Horticultural Society has taken a step in advance, in publishing its reports in twelve monthly sections, or magazines, thus bringing the subject matter and discussions of the annual and summer meetings, also other timely topics, fresh, before the members, once each month. This has proved a complete success in Minnesota, and an example I consider worthy of emulation by our society.

Since our last annual meeting the hand of death has entered our ranks and claimed a number of our veteran horticulturists, who lived nearly or quite their three score years and ten, and were among the pioneer gardeners, nurserymen, and fruit growers of Wisconsin. In this list are numbered, J. M. Smith, George P. Peffer, Ephraim Wilcox, O. C. Cook, and S. I. Freeborn.

With J. M. Smith I was personally acquainted and I feel that this Society has lost one of its most able and energetic members; one who has done much to promote the horticultural interests of Wisconsin and whose place in our councils it will be difficult to fill.

His many years of service as president of this Society has endeared his memory to every one so fortunate as to form his acquaintance.

At this time I can make but a passing allusion to these past and beloved members, of whom appropriate memoriams will be prepared and presented in our next volume.

The past season has not been one of particular progress in horticulture in our state and I can not congratulate you upon the success you have attained. But I trust your zeal and cour-

age have met no discouragement, and you will continue to plant and cultivate, in the full confidence that your harvest will, in the future, be commensurate with the labor and patience you have thus expended.

It is true these failures and discouragements are serious matter, but after all, I believe they are our best teachers for the attainment of a higher education in all that pertains to horticulture.

In assuming the duties and responsibility of the office of president of this Society it was with reluctance and somewhat of a distrust as to my ability to maintain the high standard attained by my illustrious predecessors. While I have some regret, and may possibly have erred in my judgment, it is with a satisfaction that the dictates of conscience were for the best interests of our Society.

I will take this opportunity of paying my tribute of respect for the honor and trust you have reposed in me. Also thanking the members of this Society for the kindness and co-operation in our work, thus helping to advance the cause of horticulture.

B. S. Hoxie—I move that the suggestions made with regard to plant distribution be referred to the committee on Trial Stations and their action be included in their report to come before us Thursday morning. Carried.

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#### REPORT OF SECRETARY.

A. J. Philips, West Salem.

Mr. President, and Members of the Wisconsin State Horticultural Society:—In submitting to you my first annual report, I do it with the satisfaction of knowing that, although the past year has, in many respects, been an unfavorable one to the horticulturist, it has taught us many valuable lessons. Our prospects up to the frost of June 5th were very flattering, after that, serious losses were reported from many places, and

on later examinations I found the damage from that frost worse than was reported. Still we have not been alone in damage by frosts; other northern states reported more or less of it, and the beginning of the present winter has been a hard one for our brethren in the so-called "sunny south." Oranges, frost bitten on the trees, is as disappointing as apple and berry blossoms destroyed in the north. I find on visiting different parts of our state that the interest in horticulture is not lagging, but in many places it is on the increase, judging from the number of letters received, and the numerous questions asked at the different institutes. The correspondence connected with the office of secretary is greater than I expected and is on the increase, and, while I have endeavored to answer each one personally, or through the medium of some paper, as often requested, in absence from home some have necessarily been delayed, or in some instances may have been mislaid. Our reports for the year 1894 have been eagerly sought after and have been sent to ten states, besides to the Dominion of Canada. The president of the Ontario Fruit Growers' association in acknowledging receipt of our report said: "I have read it with much pleasure and profit. I particularly like the high moral, or I might say, the true religious tone of all the papers read and the addresses given at your meetings, and we would be much pleased to have you send a delegate to our meeting." Prof. S. B. Green, of Minnesota, said: "I regard your report recently received as one of the best. Full of useful instruction and information." Prof. W. A. Henry said, in a letter: "Am glad to notice that horticulture is on the up grade." These compliments to our members, who furnished material for our report, are certainly pleasant reminders.

One matter seriously confronts us, and I have given it some thought and study; that is, the difference in the membership of our state, 125, and that of our sister state, Minnesota, 525. I find that the publication of their reports and fruit notes, monthly, in pamphlet form, and the giving of plant premiums by some of their nurserymen has had a good effect, as they send this monthly magazine with premiums and an annual membership all for one dollar. I have received a number of

letters from our members advocating the same plan, but I find it cost \$175 a year extra to do this publishing, and they pay their secretary double what we do, and he hardly receives enough as he has to be in his office most of the time. If we had sufficient funds to do this, and could secure a correspondent in each local society to give monthly reports, we might perhaps work up a membership equal to theirs. I do know that the plan of securing delegates from our local societies makes our meetings as interesting as any I ever attended in any state.

The time for the termination of the leases of our trial stations is approaching and we need some instructions on the matter. Owing to location, some of our members think we have not received the benefits we should have. Still, the expenses have been light. The one at Ithaca is remote from the railroad, and in nearly the same latitude of the experiment station, so well managed at Madison. The one at Sparta is on land too sandy to grow apples successfully; and none of the managers claim that much good for the general planter comes from experiments in strawberries and some other small fruits.

The station at Weyauwega has some good trees on it, and is of value to that immediate locality where water above and under the ground is abundant. These might all revert to the managers with the understanding that they have the profit from them, and in lieu thereof, ask them to make an annual report of what trees do well and what are failing. Then I would favor the State Society or trial station committee sending a committee of one man, or three, to select, in the northern part of the state, a suitable place near a railway station, away from the possible influence of water, on good apple soil, where a tree tested and found worthy or otherwise, would be of value to our whole state. Would advise buying a few acres, pay a man to care for it as ordered by the committee on trial stations, and not allow him to do any business on that station for himself, but it should be called the State Trial Station for Trees and Plants, and an annual report be made to the Society by the manager. These hints I give you for your consideration at this time. I find one of the hardest things for our So-

ciety to do is to reach the rank and file of the people of our state, with information that will enable them to grow fruit for their families and at the same time protect them from the ravages of the unscrupulous tree peddler. Would to God there was a spraying machine invented to drown him the first time he lies to an innocent purchaser.

We feel the need of a newspaper in our state with a well-edited horticultural department.

With regard to our volumes I can only reiterate what our former secretary, B. S. Hoxie, said: "We need more bound volumes. We had some 2,000 copies left after the distribution; these I turned over to Mr. McKerrow, who kindly sends them out with the bulletins to the institute. I find them eagerly sought after, and the supply usually exhausted in less than ten minutes, many going away disappointed because they did not obtain one.

#### NEW FRUITS.

As the season of the red raspberries approached, I began to receive letters of inquiry about the Loudon raspberry, from our own and other states; and as our society had voted fifty dollars for looking up new fruits, I spent about one week looking it up and comparing it with other red raspberries. I found it of good quality, very productive, having a good, long season and a good shipper. My decision being that if it proved as good in other localities as at Janesville, it was well worthy of trial. Prof. Goff said the same and thought it a valuable addition to our list of red berries. In October and November I spent about two weeks in Waupaca, Winnebago, Fond du Lac and Dane counties, looking after some new seedling apples. The Granite Sweet, near Waupaca, is a good keeping apple, a seedling of the Fameuse. The Ruth, near Weyauwega, is also a good keeper, a fine tree and an apple of fine appearance, and good quality. The Ray Craft, near Eureka, is good in tree and fruit and is productive; the owner intends planting 1,000 trees next spring. I think it will pay him. The Murply's Blush and the Prichard, in Dane county, are both good and will be heard from later. They both are

good bearers, the former especially so. It bore a good crop in 1894, twenty-eight bushels, forty-nine years after being planted. For the localities in which they are growing, I consider these are all valuable.

The Prichard, I found, on examination, to be a good tree, the fruit having been awarded the first premium as a winter seedling at the state fair in 1894, by J. S. Harris. Our apple men will remember a very handsome apple exhibited at our last winter's meeting by A. A. Parsons; as no one could name it, it was awarded the first premium as a winter seedling. I visited the tree on the farm of Mr. Beaulin, in Winnebago county. I am of the opinion that it is an eastern variety of grafted fruit, but will watch its further developments. It bore no fruit last season. To give all the particulars of the new fruits I found would make a report too lengthy. I only mention a few of the best winter varieties. On my return I had quite a number of apples and a bundle of cions for myself and for our experiment station. I spent a day at Ft. Atkinson and as time would not permit showing my fruit to all the growers there, Mr. C. P. Goodrich kindly allowed me to invite our members to spend the evening at his home where I showed the best apples I had found and gave them their history. Messrs. Coe, Mr. Edwards and two sons, Mrs. Spry and daughter, and Mr. and Mrs. Goodrich were present. Mr. A. J. Edwards, one of our young members, said his faith in Wisconsin winter apples, had increased. All seemed well pleased. I have extended accounts of these trips which can be condensed and used in our coming volumes.

#### NECROLOGY.

Since our last annual meeting the scythe of time has dealt us some severe blows, perhaps the hardest since our Society's organization. February 20, 1895, the sad intelligence that our time honored and beloved ex-president, J. M. Smith, was no more, flashed over the wires.

April 14th (only a short time after he read a paper at the round up) the largest gathering ever assembled at that place,

met at the Presbyterian church in Oconto to pay their last respects to O. C. Cook, one of our esteemed members.

September 11th, following, the veteran horticulturalist, Geo. P. Peffer, passed over the river of death. His death was unexpected as in June previous he attended the nurseryman's convention at Niagara Falls. I visited him in July and little thought that he would leave us so soon.

November 17, 1895, the oldest Roman of them all, Ephraim Wilcox, of La Crosse, died at his home, aged eighty-two. His life was spent in horticultural pursuits and many pleasant hours we have spent in his company. They will all be missed, but their works do follow them.

February 5th, during our first meeting, the sad intelligence came to us that our esteemed member, Mr. S. I. Freeborn, of Richland county, had passed away at 1 p. m. Mr. Freeborn was with us last winter. His experimental orchard is one of the finest in our state. Peace to his ashes.

### FINANCIAL STATEMENT.

Wisconsin State Horticultural Society, to A. J. Philips,  
Secretary:

*Dr.*

To postage, February 8, 1894, to February 3, 1895.....	\$43 15
To paid for printing, February 8, 1894, to February 3, 1895.....	32 30
To paid express during year to February 3, 1895 .....	28 30
To paid miscellaneous expenses during the year.....	164 28
To salary of secretary for year.....	300 00
To amount appropriated for looking up new fruits.....	50 00
	<u>\$618 03</u>
	<u><u>==</u></u>

*Cr.*

February 3, 1895. Received on salary.....	\$300 00
February 3, 1895. Received miscellaneous expenses.....	268 03
February 3, 1895. Due for looking up new fruits.....	50 00
	<u>\$618 03</u>
	<u><u>\$618 03</u></u>

Report of secretary was referred to committee on trial stations; financial report to auditing committee.



## TREASURER'S REPORT.

To the officers and members of the Wisconsin State Horticultural Society:

Your treasurer submits the following report:

February 7, 1894. Received of former treasurer.....	\$501 37
February 7, 1894. Received of state treasurer.....	750 00
February 7, 1894. Received of secretary, membership dues .....	78 00
May 10, 1894. Received of secretary, membership dues.....	7 00
June 22, 1894. Received of secretary, membership dues.....	3 00
June 22, 1894. Received of state treasurer.....	750 00
Total from all sources .....	\$2,089 37
Total disbursements .....	1,452 86
February 6, 1895. Amount on hand.....	<u>\$636 51</u>

Respectfully submitted,

R. J. COE,  
Treasurer.

## DISBURSEMENTS.

Voucher No.		
64	M. A. Thayer, delegate to Iowa.....	\$54 74
1	C. W. Smith, expense, paper.....	3 20
2	Ed. F. Babcock, expense, delegate .....	6 48
3	A. A. Winslow, expense, delegate.....	7 20
4	J. A. Gaynor, expense, paper.....	3 50
5	Mrs. Melville, expense, paper.....	2 75
6	L. N. Read, expense, delegate... ..	8 14
7	L. J. Fisk, expense, delegate.....	6 70
8.	A. L. Hatch, expense, paper.....	3 56
10	Geo. B. Smith, expense, paper.....	8 84
11	A. A. Parsons, expense, delegate ... ..	6 50
12	J. L. Herbst, expense, paper.....	6 48
13	A. D. Barnes, expense, delegate.....	9 10
14	Chas. Hirschinger, expense, premiums.....	16 75
15	N. B. Hotchkiss, expense, delegate .....	15 88
16	W. J. Moyle, expense, paper.....	8 14
17	A. A. Parsons, expense, premium.....	3 00
17½	Herman Voll, expense, delegate .....	5 58
18	L. H. Carpenter, expense, paper.....	5 04

19	Geo. J. Kellogg, expense, delegate.....	\$6 15
19½	L. L. Olds, expense, premium .....	8 00
20	John Hauser, expense, delegate .....	7 64
21	D. M. Torrey, expense, delegate .....	9 54
22	A. L. Hatch, expense, trial station.....	23 00
23	Franklin Johnson, expense, paper.....	2 20
24	Wm. Toole, expense, paper .....	3 22
27	A. L. Hatch, expense, premium.....	16 50
28	S. I. Freeborn, expense, paper.....	3 56
29	W. A. Springer, expense, premium.....	11 01
30	M. A. Thayer, expense, trial station.....	22 30
31	J. Wakefield, expense, delegate .....	9 26
32	Purdy & Read, expense, premium.....	3 00
33	B. W. Hewett, expense, paper .....	4 56
34	A. D. Barnes, expense, premium.....	25
35	L. G. Kellogg, expense, delegate... ..	5 04
36	Chas. Hirschinger, expense, delegate.....	4 00
37	H. W. Ash, expense, hotel bill.....	3 75
38	Mrs. V. H. Campbell, expense, badges.....	5 80
39	Mrs. H. Charlton, expense, paper.....	4 25
40	B. S. Hoxie, expense, express .....	3 85
41	R. J. Coe, expense, hotel bill of delegates .....	105 55
42	R. J. Coe, expense, paper.....	1 92
Blank	B. S. Hoxie, expense, quarter salary .....	75 00
43	B. S. Hoxie, expense, railroad fare .....	3 00
9	J. E. Coleman, expense, paper.....	1 36
25	A. J. Phillips, expense, paper.....	3 25
1	A. L. Hatch, expense, delegate Illinois society.....	15 00
2	A. J. Phillips, expense, stationery.....	15 65
3	Fred A. Hardin, expense, trial station.....	29 45
4	Mrs. V. H. Campbell, expense, reporting, etc.....	51 86
5	A. J. Philips, expense, printing, etc.....	24 20
6	H. R. Cotta, expense, nursery stock.....	7 00
7	Green's Nursery Co., expense, nursery stock .....	2 40
8	C. G. Patten, expense, nursery stock.....	50
9	A. J. Phillips, expense, secretary's office .....	17 94
10	A. J. Philips, expense, quarter salary.....	75 00
11	Chas. Hirschinger, expense, summer meeting .....	2 00
12	B. S. Hoxie, expense, paper .....	1 34
13	Mrs. Lelia Robbins, expense, paper.....	5 20
14	Mrs. V. H. Campbell, expense, summer meeting.....	1 36
15	A. D. Barnes, expense, summer meeting.....	8 10
16	A. S. Crooker, expense, summer meeting.....	6 10
17	A. L. Hatch, expense, summer meeting and premiums.....	4 70
18	Warren Gray, expense, delegate.....	5 68

19	D. C. Converse, expense, paper.....	\$2 73
20	J. L. Herbst, expense.....	6 48
21	Geo. J. Kellogg, expense, premiums.....	19 00
22	L. G. Kellogg, expense, premiums.....	16 70
23	Thayer Fruit Farm, expense, premiums.....	7 00
24	R. D. Mason and Son, premium .....	4 00
25	R. D. Bresee, premium .....	14 50
26	Mrs. Downing, premium.....	3 00
28	R. J. Coe, expense, summer meeting.....	1 92
29	Mrs. E. B. Heritage, expense, paper.....	7 32
30	A. J. Philips, expenses .....	51 80
31	W. H. Huppler, expense, board of delegates.....	31 80
32	R. J. Coe, expense, membership paid.....	3 00
33	J. L. Herbst, expense, printing, etc.....	10 25
34	A. J. Philips, expenses and salary.....	115 76
35	A. J. Philips, expenses and salary.....	108 60
36	B. S. Hoxie, expense, delegate to Iowa.....	20 45
37	Mrs. V. H. Campbell, reporting summer meeting. ....	15 00
38	L. G. Kellogg, expense, delegate to Minnesota .....	15 77
39	A. J. Philips, expense, delegate to Minnesota.....	8 50
40	A. J. Philips, salary and expenses .....	155 30
41	R. J. Coe, delegate to Illinois and expenses.....	6 94
42	L. G. Kellogg, president's expenses.....	25 00
		<u>\$1,452 86</u>

Treasurer's report was referred to auditing committee.

B. S. Hoxie—I move that H. R. Cotta, Illinois; H. F. Thurston, representing Farmers' Review; Clarence Shamel, representing Orange Judd Farmer, and all who have been invited to read papers, be made honorary members for one year and invited to take part in our deliberations. Carried.

B. S. Hoxie—I move to amend article IV of our constitution, so that the executive board shall consist of the president, secretary and treasurer.

Geo. J. Kellogg—Would it not proscribe the interest if this motion should prevail?

Wm. Toole—It seems to me that it is worth something to us to have every part of the state represented in the executive

committee, and as our constitution now stands, that committee is pretty well scattered over the state.

Franklin Johnson—I do not see any need of having a fifth wheel to the wagon unless there is some use for it. I have been a member of the executive committee and I did not see that I had any duties.

President—A larger number than that provided by the amendment would entail an expense in getting the board together.

A. L. Hatch—Has it not been a fact that all of the work has been done by the general officers, and why not have the work of the society done by them? We often refer questions to them to settle even after having held an executive session.

Motion prevailed.

B. S. Hoxie moved a reconsideration of the question. Carried.

A. L. Hatch moved that the constitution be so amended that the executive committee consist of three members, president, secretary, and treasurer.

J. D. Searles moved to amend the amendment by adding the vice president and corresponding secretary. Carried as amended by Mr. Searles.

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## REPORT OF FINANCE COMMITTEE.

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

We, the members of your finance committee, have examined the accounts of the secretary and treasurer, and having compared the same with accompanying bills and vouchers, find them correct.

Franklin Johnson,  
F. C. Edwards,  
Wm. Toole.

The election of officers resulted in the choice of the following for the ensuing year:

President—L. G. Kellogg, Ripon.

Vice President, Chas. Hirschinger, Baraboo.

Secretary—A. J. Philips, West Salem.

Treasurer, R. J. Coe, Ft. Atkinson.

Corresponding Secretary, J. L. Herbst, Sparta.

Wm. Toole—With regard to the matter of an increased appropriation and for a more generous sized volume, I hope you will let your legislative committee know what you want in this way.

Secretary—The state allows us two hundred pages but we were given fifty pages more, making in all two hundred and fifty pages. Prof. Henry says: "Whatever you do, do not get a cumbersome volume, get the gist of the matter, but do not make it too large."

Prof. Henry asked us to go over to the horticultural building, and President Adams invited us to hold one or more meetings there. I move that we hold our meeting this afternoon at the horticultural building. Carried.

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UNIVERSITY OF WISCONSIN,

Office of the President.

Madison, January 14, 1895.

Mr. A. J. Philips,

West Salem, Wisconsin.

My Dear Sir:—In behalf of the university it gives me great pleasure to invite the State Horticultural Society to meet at least once in the course of its meeting in February at the horticultural building at the university. This invitation is extended with the knowledge of Professor Henry, who will make every needed preparation for meeting your members and giving them the opportunity of observing what is done for the encouragement of horticulture at this university.

Hoping that nothing will occur to prevent your accepting this invitation, I am,

Very respectfully yours,

C. K. Adams,

President.

## STRAWBERRIES FOR 1895.

Will. Hanchett, Sparta.

The subject assigned me, Strawberries for 1895, deals with futurity, and in handling it I must inform you that I am not a prophet, neither the son of a prophet, and speak only as a person who has been engaged in strawberry culture among the hills of Monroe county for the past thirteen years.

This subject naturally presents itself to our minds under three distinct heads: the prospect of the coming season's crop; the new things learned in regard to soil, location, cultivation and fertilization, which will be applied to our next season's planting; and varieties best adapted for next season's planting.

Of the first I will say that the strawberry crop of 1895 in Monroe county will be a small one, as last summer's drouth gave us a very poor stand of plants on new setting, and badly burned out old plantations.

On the second head, I will say that the last two seasons have taught Monroe county strawberry growers that a soil and location not capable of raising a good crop of winter wheat, without great risk of its winter killing, is not reliable for strawberries; and any soil and location where winter wheat was reasonably sure of wintering without damage could be depended on for a good crop of strawberries, even in a very unfavorable season.

We have noticed that in locations where winter wheat nearly always gets winter killed, or at least badly damaged, that the roots of strawberry plants also get damaged, and although they may blossom full and load with fruit, the first breath of an advancing drouth withers them up and away goes the crop; while in better protected locations the drouth would not seriously affect the crop.

I believe that a well protected location is of great importance in strawberry culture.

Here let me describe to you the location being sought after by Monroe county strawberry growers. They are found in

narrow valleys, which open to the east, southeast, or south, and where the adjoining ridges are covered by growing hardwood timber.

The advantages of such locations are:

First, protection from the sweeping northwest winds of winter, which, on the open prairie, take the covering of snow from the fields and pile it up along the fences or in depressions in the surface.

Second, in the protection from the scorching southwest winds which occur during the drouths of summer.

Third, the nature of the soil found in such valleys seems to be peculiarly adapted to the wants of the strawberry.

Wisconsin abounds in such locations, and many may be found with a clear, sparkling stream of water running through them, which, by an inexpensive dam, might be raised to a level of the surrounding fields, and irrigation be practised with small expense.

We believe such locations are to become the future fruit fields of Wisconsin.

In regard to cultivation, so much has been said and written on this subject that I will simply say that thorough cultivation pays best.

In regard to proper pollenization, I will say that this subject seems to be receiving considerable attention from prominent horticulturists at present, and I believe it should receive careful consideration and investigation from all persons engaged in growing strawberries.

In my experience, best results have been attained by using Jessie to pollenize Bubach and Haverland, and Van Deman to pollenize Warfield, and poorest results in pollenizing have been from Michel. While Michel seems to produce an abundance of pollen its season of blossoming is too short for most pistillate varieties.

On the third head I will say that our specialty is fruit raising and not plant raising, and consequently we take very little stock in "the best ten varieties." We believe it is a mistake for persons engaged in raising strawberries for market to fruit from ten to fifty varieties as some growers do. In such

cases nearly every case of fruit is of a different type, and frequently each box in a case has its individual type. Such mixed-up shipments seldom bring a fancy price in the market, and are generally knocked off as mixed lots.

I believe the strawberry grower should make a study of variety, and when he finds the variety best adapted to his soil, location and trade, that variety should be made his main crop, and then the individual cases of each shipment will be "as like as two peas." The trade soon get on to this fact and then if the grower has made a wise choice and gets his berries on the market in proper shape he will meet with an ever increasing demand for his product.

With us this variety is the Warfield. We use Van Deman as a fertilizer for the reasons, first, that with us with Van Deman fertilization has always been perfect, and, second, it is of nearly the same type as Warfield, and readily passes in the market as the same variety. Haverland and Bubach have proven very profitable with us for near markets, and are worthy of future cultivation.

We notice by the catalogues that a greater number of new varieties are being offered than ever before. We shall try some of them, and expect to depend on the recommendations of this convention in making a choice.

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## STRAWBERRIES FOR 1895.

E. J. Schofield, Hanover.

Perhaps it would be well for us all to remember that the season of 1894 has been one of the most trying seasons we have had in many years, with the mercury dancing around 90 degrees to 95 degrees in the shade, and no rain and scarcely dew sufficient to moisten the foliage, from June 1st to near the close of the season. Nevertheless many varieties did well for us, and among the forty varieties in fruit of the late introductions, Beder Wood stood the scorching drouth the best of



any, and we picked a good crop of good average berries. It was first to ripen (except the Van Deman, which was two days ahead), and continued to furnish good, average pickings until the close of the season; it wound up with the latest varieties. Van Deman did well again. We think much of this variety; it is the earliest good berry on our grounds. It runs its crop in early, sells for a good price and is gone before the other varieties are ripening much.

The Splendid we are all pleased with and have no fault to find with it; the plants are perfect and there are plenty of them as well as plenty of berries.

The Bissell is a remarkably fine and very heavily rooted plant; berry, very fine, of fine color; immense cropper and a good shipper.

Marshall is immense in plant as well as fruit; healthy, moderately vigorous, good cropper for so large a berry.

Timbrell has had a big boom but has not proven, with us, to be any better nor so good as some other varieties; berry colored, spotted and uneven. We have been informed by parties, who know it better, that the poor color is the effect of heat and drouth. We find no fault with the plant.

Belle (Crawford's 51) is a late variety that did first rate and gives us good satisfaction.

Greenville, we believe, is one of the best large pistillate varieties, very vigorous, healthy and productive; quality surpassed by none.

Robinson is very promising; productive; good quality.

Beverly did remarkably well; the plant is all right; berry, dark, glossy red, firm, holds out well.

Smith's Seedling is a good plant. We cannot report on the fruit, as the stock sent us in '93 proved to be Michel. Will have the genuine in fruit next season.

Leader: the plant is O K; berry of good size and quality, dark red and fairly productive.

Muskingum: plant only moderately vigorous; berry large, in quality next to Greenville.

Princess is one of the best large varieties; plant O K; very productive. The berry is not quite so dark colored as we would like.

Dayton: plant is all right; berry large; moderately productive. It beats Bubach with us.

Lovett continues to do well and we find it to be a profitable market variety.

Parker Earle can hardly be called a new variety. Give it rich soil, a marsh hay mulch and moisture at fruiting time, and it will beat any variety we are acquainted with, but it must have the moisture or it will fail to bring its immense crop to size and perfection.

Enhance has proved to be a good, late variety, but we cannot say as we like the way it ripens. The greatest trouble is, it does not color evenly; it has a green nose, which is a serious drawback to any variety for market.

In conclusion, we have not lost our good opinion of Warfield, Haverland, Barton's Eclipse, Eureka, Queen, Wolverton, Saunders and Burt. To sum up, we would recommend for 1895 for market and shipping: Beverly, Burt, Bissell, Warfield and Parker Earle, on rich, moist soil, or where irrigated if the season should prove dry.

In addition to the above varieties, for the average market where long shipments are not required: Beder Wood, Greenville, Princess, Barton's Eclipse, Eureka, Queen, Haverland, Gov. Hoard; for fancy market: Marshall, Belle, Greenville, Leader, Dayton, Muskingum, Wolverton and Saunders. For family use the majority of the above are good, but if I was planting a bed in '95 solely for family use, I would plant Van Deman; for early, Greenville; for medium, Leader and Wolverton; for late, Muskingum and Belle.

Adjourned.

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Wednesday P. M.  
Horticultural Building.

## POTATO GROWING FOR PROFIT IN WISCONSIN.

L. L. Olds, Clinton.

The question may very naturally be asked, "Why a paper on potatoes at a horticultural meeting? Does that not belong

to agriculture rather than horticulture?" Visitors to the world's fair at Chicago found exhibits of potatoes in both the agricultural and the horticultural building. Upon the question being asked why some exhibits were sent to one building and some to the other, the explanation was made by the judges somewhat in this way: Potatoes grown by the ordinary farmer as a field crop of vegetables without special reference to improved varieties, belong with the agricultural exhibit; but the exhibits of professional growers, of seedsmen of experiment stations, in other words, exhibits of potatoes in variety, are classed in the horticultural department. So we see from this ruling that there is perhaps a legitimate place for our subject here today. Without confining myself, however, entirely to the matter of improved varieties, but reserving that to be taken up later on in my paper, I will proceed at once to a consideration of the practical topic just as it is given to me on our program, "Potato Growing for Profit in Wisconsin."

There are just two points that I want to especially emphasize as essential to the greatest success in growing potatoes for profit in this part of the country.

The first point is, avoid hand work. Do all the work that you possibly can with machinery.

The second point, which perhaps includes the first, is, give the potatoes as good a chance and as good care and as much thought as you do your other crops.

The first thing to consider is the selection of the land. We use our very best ground for potatoes. It seems to me that every one should do the same, for this reason: the cost of seed and the cost of planting, cultivating and harvesting is greater per acre for potatoes than for any other farm crop. Do not think you can grow potatoes profitably at no greater cost per acre than corn. You can not do it.

Clover sod makes the best ground for potatoes. Old pasture land will usually give a better potato crop the second year than the first. Timothy sod is not good.

I believe in deep plowing for potatoes, seven or eight inches if possible. Ordinary shallow plowing may be as well for corn and small grain, but it will *not* do for potatoes. Then,

if it is fall-plowing, the ground must be worked up deep just before planting. It is not enough to scratch over the soil for two or three inches as would be done for sowing grain, but it must be loosened up deep. Then, do not be afraid of planting deep. If the land is well drained I would rather have the potatoes covered with five inches of soil on our soil, which is a black prairie loam, than with three inches, although probably four is about right, ordinarily.

Another important point in connection with the planting is that the seed be surrounded, not only above but below, by fresh, loose, moist soil. Here is seen the advantage of the deep working and also the advantage of machine planting. Do not plant by hand if you can avoid it. It gives the soil a chance to dry out too much between the time of making the furrows and covering the seed, and, furthermore, it costs too much. If you cannot afford to buy an Aspinwall planter, at least have a hand planter. The Acme hand potato planter is a very cheap tool, but is a great help and does good work.

The subject of preparing the seed is large enough and important enough to take up a whole session. I will state briefly what is our usual way. We cut our seed quite fine, one to three eyes to the piece, and then plant the pieces close together in the row, from ten inches apart for the Ohio class to fifteen or seventeen for the large growing varieties, like World's Fair, American Wonder and Rural New Yorker. And here we have a machine that helps us out on expense, doing the work at one-third or one-fourth the cost of hand cutting. The Aspinwall potato cutter, I believe, is a practical machine. I think it does fully as good work where the potatoes are smooth and of medium size, as ordinary help will by hand.

Some one asks, perhaps, "Isn't it better to put more seed in a place, and have the hills further apart?" It might be, if seed and labor were both very cheap. But if the hills are much further apart, they will have to be planted in rows both ways, or they cannot be kept clean except by hoeing, and if they are rowed both ways they will have to be planted by hand. What I am trying to show is how to grow a good crop at the least possible expense per acre.

One man told me once that he always planted large potatoes, as large as his fist, and planted them whole, three and one-half feet apart each way. Now that seems to me very wasteful; wasteful of seed, and wasteful of land. The land is not all utilized. If all you are after is to grow very large potatoes, probably the way to do it is to give them plenty of room. But if you are after bushels, fill up the ground. It matters very little how many small potatoes you get if you get good sized ones too, and enough of them.

It is perhaps true that, as a rule, we have not been using seed enough for the greatest profit. The experiment stations tell us that the more seed used the greater the yield up to a certain point. We have been using more seed during the last year or so than we used to. Last year we planted as high as eleven or twelve bushels to the acre, of the early varieties, especially the Ohio class, and I do not think it was any too much. With the later varieties it is different. We used only from eight to ten bushels, and I felt at digging time that that was a little too much.

Where the seed ends were removed from the large seed, it decreased the yield fourteen per cent.

The experiment did not prove anything in regard to the best distance between the hills, but it showed that if the distance was eighteen inches, medium sized tubers, about four to the pound, were best, cut not too fine, and that small potatoes yielded nearly as well if the seed ends were removed.

Seedsmen do not have much time for experimenting during the planting season. With me it is "hustle" all the time during the spring months. But I made an experiment two or three years ago to ascertain what size of tubers were best to plant and how to cut them. I selected nine pound-lots of seed, all of one variety, the Pearl of Savoy. In the first lot the tubers weighed eight ounces each; in the second, third and fourth lots, four ounces each; in the fifth, three ounces, and in the last four, one ounce each. The lots were cut differently, but all planted eighteen inches apart, one piece in a place. My best yield was from lot No. 3, four ounce tubers, cut to two and three eyes to the piece, and the amount of seed required

per acre that way would have been a little less than ten bushels. I believe if I had cut the pieces in two again and planted them just twice as thick, nine inches apart instead of eighteen, using the same amount of seed per acre, the yield would have been just as good and perhaps better. Unfortunately I did not think to try it that way, but if the yield were only just as much, there would be an advantage gained, as the hills being closer together would keep down the weeds better in the row. Also, I could prepare the seed that way with the cutter, as that cuts to only about one or two eyes. Lot No. 2, consisting of the same size of tubers as No. 3, cut to one eye and planted eighteen inches apart, gave but little over half the yield per acre as No. 3, showing plainly that there was not near enough seed used. My best yield from the very small potatoes, the one ounce tubers, was where the potatoes were planted whole, with the exception of the seed ends being removed. The yield of that lot was almost as much as lot No. 3, and was seven per cent. more than where the small tubers were planted without cutting at all, enough difference to pay for the time required to remove the seed ends.

As I have intimated before, our purpose all the while is to manage so as to keep the potatoes clean without any hoeing, and usually we succeed; I mean without any hand hoeing. As one of the advertisements now running in the papers puts it: We "hitch a horse to a hoe."

We do all the work of tending the crop, with the exception of harrowing, once or twice before the potatoes come up, with the Planet Jr. Horse Hoe and Cultivator. We use it first as a cultivator, beginning just as soon as the rows can be followed. And right here is where many make a mistake. I see it right around me every year. They wait until the potatoes are four or five inches high before they touch them. By that time the field is green with weeds, and it is utterly impossible to get them, out in the lines of the rows without hand work. Most of them think that they cannot afford to put the hand work on them and probably they cannot, but they could not afford to allow it to become necessary. If they do let them get started this way when the tubers begin to form there

is a thick mass of weeds growing in the row, and of course little chance for the potatoes.

Our way is to run the cultivators just as wide as possible the first time through when the potatoes are small, and run them deep, throwing the soil onto the rows and perhaps entirely covering them. The covering does not seem to hurt them in the end. In this way we keep the weeds from starting in the rows. Then as the vines grow large we gradually narrow up the cultivators and run them shallower with the horse hoe attachments on, going through, if there is room to get through, even after the vines have stopped growing and begin to die, but running very shallow the last time. If deep cultivation is practiced after the vines are half-grown, root pruning is the result just as in the case of deep cultivation of corn, and we know that is a great injury.

Frequent cultivation is very important, as that keeps the potatoes growing fast, as well as destroying the weeds. We plan to go over them once a week, and sometimes oftener. Potatoes should be cultivated just as soon as possible after a shower, no matter if they had been gone over the day before. The object of this is to check evaporation.

Another thing that must be attended to at the right time is the destroying of the bugs. We use a Steitz Brush Sprayer, a machine on two wheels, drawn by one horse, that takes two rows at a time. It works on a new principle, spraying the liquid on in a fine mist instead of simply sprinkling it. The advantages are that only a very small amount of water is required as the poison can be used five or six times as strong as in the ordinary way, and less Paris green is needed. With our Steitz sprayer we can go over eight or ten acres a day, and it is easy, pleasant work. However, if you do not grow potatoes enough to justify you in getting a Steitz machine, go over them by hand. It is hard work, but it will pay. You must not neglect them. The Knap-sack sprinklers are quite an improvement over ordinary sprinkling pails. The important item, as I intimated, is to do the work at the right time. It is of little use to lock the door after the horse is stolen. The young bugs grow at an astonishing rate and in-

jure the vines very much in a short time, if the weather is warm. We pay no attention to old bugs, but we keep a close watch, and as soon as the young ones are fairly hatched we go for them.

Now I come to the harvesting, and as this is the most expensive part of all of the work, right here is where we want to be careful. Many are still digging their potatoes by hand, and think it is the only practical way for them. I do not believe any man can afford to dig his potatoes with a fork, even if he does not grow more than half an acre. He certainly cannot in our soil in ordinary seasons. Now, I am not going to advise the ordinary farmer to pay out a hundred dollars for a potato digger. The Elevator digger is a necessity for the large grower. Our Hoover digger saved us \$50 of what it would have cost us with the Common Sense the first year, in digging a crop of thirty-three acres. This saving was just in the picking up, as the potatoes were left in such nice shape for the pickers. But the Common Sense digger does fairly good work, and is an immense saving over hand digging. It is cheap enough, too, so that every farmer can afford to have one. There are other cheap diggers also that are good, but they are all modifications and complications of the Common Sense.

We have a way of handling our potatoes that is an immense improvement over dumping them into a wagon box and then shoveling them out again. We use bushel boxes two feet long, eleven inches wide and ten inches high. These boxes are made of lath, the best grade, of tobacco lath, four on each side and five on the bottom, with two nails in each end of each lath, six penny nails being used on the bottom and four penny on the sides. The end pieces are made of common boards, with a little two-inch strip nailed across each end on the outside near the top for a handle. These boxes are cheap, light and wonderfully convenient. When we start out for the field we pile a lot of them onto a low wagon with an open platform rack, drive at once to the farther end of the field, dropping the boxes off in a line right next to where we want to dig, as we go. On reaching the end we leave the wagon and hitch onto the digger. The pickers empty their baskets



into the boxes all along right where they are. Then when we are ready it is a very short and easy job to put them on again, two men loading on fifty or sixty bushels in from ten to twenty minutes. At the cellar the boxes are very quickly emptied into barrels or bins, and are ready to be filled again. It is a quick and easy way of managing, and best of all avoids shoveling and dumping the potatoes around, which is often quite an injury to them.

The actual average cost per acre of our potato crop for the year 1894, all work being done by machinery as I have indicated, was as follows, a man's or boy's time being reckoned at \$1 per day, which is about an average of what it cost me, and a team the same: Plowing and fitting the ground, \$2.70; cutting the seed, 63 cents; cultivating (from three to six times), \$1.80; hoeing (all put on one acre), 6 cents; sprinkling, to poison the bugs, 26 cents; digging and putting into the cellar, \$3.97, making a total for labor of \$10.23 per acre. To this should be added 85 cents per acre for Paris green and \$1.50 per acre for repairs and wear on tools, making in all \$12.58, which represents the entire cost with the exception of the seed. This is getting it down to a pretty low figure. It certainly could not be done for that with hand work.

Some people do not take care of their potatoes after they get them. This very winter, already, farmers have come to me and said, "I don't see what ails my potatoes. They are growing." Well, your cellar is too warm." "Oh, no, I don't think so." How do you know? Have you tried it with a thermometer?" No, he has not had a thermometer there at all. Now I want to say emphatically to every man who keeps potatoes in a cellar during the winter, especially if he is keeping them for seed, invest twenty-five cents in a thermometer and keep it in your cellar. Not only keep it there but keep watch of it. Do not let the temperature get above forty, and your potatoes will not grow. And do not be scared if it drops way below forty and stays there. An editorial in a prominent agricultural paper a few years ago said that if potatoes were allowed to remain at a temperature below forty degrees it was likely to spoil them for seed. That is all non-

sense. I have kept potatoes in a cold cellar, under a building where there was no fire the whole winter through, at a temperature of thirty degrees, and I never had finer, more vigorous seed than that was. You say, perhaps, it is too much work to go and look at the cellar every day or two and to keep opening and shutting windows and doors. Well, if that is the case, my advice to you is, get your seed of some one who does take the trouble to keep watch of it. For it certainly is not wise to use seed that has already used up its first vitality growing in the cellar. It is a good deal of work to take care of the seed as I have indicated, I admit. Some men have gone so far as to say that it is impossible to keep seed potatoes properly in an ordinary house cellar where there is a fire overhead.

Mr. Terry, of Ohio, believes that it pays him better to get all his seed from outside, having it reach him just before planting time, than to be to the trouble of keeping it in his own cellar through the winter. In this connection another important question arises. Suppose we *do* buy our seed from some one who makes a business of growing and keeping potatoes especially for seed, shall we get the same varieties that we have been growing and that do fairly well here, or shall we try new ones? My advice is this: Try for yourselves in a small way the new varieties, the novelties, that are recommended by reliable seedsmen.

The propagators and introducers of new varieties and new strains are supplying a need that, it seems to me, is greater for potatoes than for anything else that grows in the ground. For, however great care is taken to prevent it, it is very apparent that all varieties after a time *do* degenerate. This "running out" as it is popularly called, may be checked for a time by careful selection and preparation of the seed and by planting seed from a different locality. But this answers only for a time. It is absolutely necessary that we have new varieties, and it is perhaps peculiarly the work of the horticulturist to try these new varieties as they are introduced and to recommend to his less progressive neighbors those that he finds valuable.

It might be interesting and certainly would not be out of place here to consider briefly as a final division of my subject some of the introductions of different types of potatoes of recent years, and the peculiarities, merits and faults of each.

I would make about seven classes or families of potatoes, and nearly every variety in cultivation today will find a place in one of these seven classes. My first is the Ohio class, which is the earliest of all the classes. The best representatives of this class besides the Early Ohio itself, are Ohio Junior, Early Market and Six Weeks Market. We also have Stray Beauty or Triumph, Howe's Premium and Early Pink-eye, these last three being earlier even than the others, but of poorer quality and shyer yielders. All of the Ohio varieties are characterized by thick stocky sprouts, small vines, early maturity and smooth, nearly round tubers, with peculiar specks on the skin.

The next class we will consider is the Hebron class. This is the largest class of all. We have under this, Signal, June Eating and Early Wisconsin from our own state, Burpee's Extra Early, Early Walton and Van Ornam's Earliest from Iowa, Thornburn and Vaughan and Early Fortune from New York, New Queen and Early Norther from Maine and Lee's Favorite from Ohio. These varieties are characterized by a flesh-colored skin, by very vigorous growing habits, and are almost invariably of excellent quality.

Our next class is the Rose class. We will include here most of the rose-colored varieties, both early and late. Of the earliest representatives Pearl of Savoy and Sunrise are now nearly run out. Of the second earlies we have Everitt, Arizona and Summit, all of which are heavy yielders, but apt to grow rough and deep-eyed. Of late Rose varieties, Maggie Murphy is the newest and best. Others are Ideal, Rose Seedling and Brownell's Winner. These later sorts grow very large, with few in a hill, are almost invariably rough and very deep-eyed, and are the wrong color for market.

Our next class we will call the Puritan class. It includes all long, white-skinned, early varieties. The best known in this class are Early Puritan and Polaris. We have of recent

introduction Wisconsin Beauty from Wisconsin, Early Harvest from Maine, and White Gem from New York. Cream City might be mentioned as another Wisconsin representative of this class.

Next comes the Snowflake class, characterized as the very best of all for quality and smoothness, but requiring rich soil and high culture for the greatest success, the tendency being always to set too many tubers. Perhaps the best known representative of this class after the Snowflake itself is the much advertised Freeman. Similar to Freeman, but far superior to it as a cropper, is our own Wisconsin World's Fair. Other Snowflake varieties were good for a time, such as Vick's Extra Early and Garfield, but now are found wanting.

Our sixth class is the Burbank class, and comprises all long, white-skinned, late varieties. There are very many representatives of this class. Probably the best of all as well as the newest is The Great Divide, introduced last year. Next in value should be placed American Wonder. Empire State, White Star, Monroe Seedling and American Giant have seen their best day.

We have one more class which we will call the Peerless or Alexander's class. The varieties of this class are characterized by very vigorous growth, great yielding ability and by very large tubers, sometimes quite rough and deep eyed, and usually nearly round in shape. Our best representative of recent introduction is the great Carman No. 1, sent out by the Rural New Yorker, and in this class we will also place the most famous of all late varieties today, Rural New Yorker No. 2. We also list here Irish Daisy, introduced last year, and for older varieties, Delaware, State of Maine, Green Mountain and Mill's Prize.

I have not named all the varieties in cultivation that are valuable, but probably the list is large enough. No one can try them all, and it is not necessary that he should. Try to determine first what class does the best on your soil with your method of treatment and for the purpose for which you grow. The general purpose potato is hardly more satisfactory than the general purpose cow. Having found out what class or

classes are best for you, let the most of your experimenting be with varieties belonging to those classes, always looking and watching for something better, for truly the ideal is always before us and always to be striven for.

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### DISCUSSION.

H. F. Thurston—How low a temperature can potatoes stand without freezing?

L. L. Olds—Thirty-two degrees.

Q.—What is the best fertilizer for potatoes?

L. L. Olds—Clover is the best. We plow in the fall. Sometimes, if we have manure that we want to put on, we draw it out in the spring.

F. C. Edwards—Does planting small potatoes injure the size of the crop?

L. L. Olds—I know that planting small potatoes will run out the variety sooner unless they are cut very carefully. Unless the seed is very high I would not advise planting small potatoes. Never plant the whole potato, remove the seed end.

Q.—Why do you recommend removing the seed end?

L. L. Olds—Because on most varieties there will be too many seeds.

Prof. Goff—We experimented with potatoes in that way and in every instance where we removed seed ends it was detrimental.

L. L. Olds—We tried an experiment two or three years ago in that line. Of two lots that we planted, the first lot, planted whole, yielded 188 bushels; the second lot, with seed ends removed, yielded 200 bushels.

Prof. Goff—Generally we have planted whole potatoes. We would take one lot, in our experiments, and cut off the seed ends, then weigh them. We would also weigh the whole potatoes so as to have the same weight per acre. I would al-

ways plant medium size potatoes. By "medium size" I mean a little larger than a hen's egg.

F. C. Edwards—Do you hill your potatoes early in the season?

A.—No, we do not.

A. A. Parsons—I have noticed in digging up potatoes that the eyes generally all started, some of them would be very weak but I think they would all grow.

Mr. Uecke—Does Mr. Olds treat seed potatoes for the scab?

L. L. Olds—We treated some last spring but I do not know whether it did any good or not. We never plant whole potatoes, we always cut them.

Prof. Goff—We have tried both ways and we find it does not make much difference whether we cut them or not. More depends on the way we put them in the ground. Small potatoes do not yield as well as large ones; this has been our experience in all of our trials.

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## CABBAGE CULTURE.

H. B. Rice, Madison.

Cabbage belongs, botanically, to the genus *Brassica*, of the family *Cruciferae* and, with cauliflower, broccoli, kale and brussels sprouts, is supposed to have originated in the wild cabbage of Europe.

This plant has green, wavy leaves and grows mainly along the sea shore on calcareous land.

Cabbage can be grown on any good corn land, but for the best results should have good drainage and abundant manuring. Freshly turned sod is well adapted for any of the cabbage family, especially if a heavy growth of clover or grass has been turned under.

Cabbage is a very rank feeder and the ground must be heavily manured, any kind of manure being good except hog manure, which is said to favor "stump foot."

The ground should be plowed in the fall for an early crop. If old ground is used the action of the frost in loosening the soil is very beneficial.

The manure may be plowed under or thoroughly harrowed in after plowing. Stable manure, preferably a mixture of cow and horse manure, should be scattered two or three inches deep on the ground. Salt may be used to advantage, in connection with other manure, at the rate of ten or fifteen bushels per acre. If guano or phosphates are used they may be applied in the hills just before putting out the plants or sowing the seed. Used thus for the larger varieties of cabbage a good handful of guano, two small handfuls of phosphate or a heap-handful of hen manure should be put in each hill.

Guano and hen manure should be thoroughly pulverized before using, and if the hen manure is moist it should be mixed with dry earth.

Guano or bone dust may be harrowed in at the rate of four or five hundred pounds per acre after the stable manure has been plowed under.

For early cabbage the seed may either be sown in the fall or in hot beds in February or March. Wintering plants in cold frames is not practicable in this climate, but is practiced in the vicinity of New York and Boston. Plants raised in hot-beds are gradually hardened and put in open ground as soon as danger from freezing is past in the spring.

For late cabbage the seed may be sown in beds early in May or a little later, in the field where it is to remain. The labor of transplanting and the check in the growth of the plants is saved by the latter method. When plenty of seed is used the cut worm is not much to be feared in field sowing. When the plants have three leaves they should be thinned wherever crowded and later the thinning should be continued as much as necessary, always leaving the strongest plants.

In transplanting, unless the weather is damp, select the latter part of the day.

Cabbage should have abundant cultivation and will amply repay thorough work from the first. The ground should always be kept mellow. If the heads mature before time for

harvesting, damp weather is apt to cause them to split open. Dry weather will often check the growth and if followed by damp weather, will have the same effect; in either case the cabbage should be given a push or a pull to loosen the roots, which will generally prevent splitting.

The cabbage is attacked by numerous enemies, some of which are very hard to fight.

As soon as the cabbage appears above ground it is attacked by the turnip flea. This small, black beetle feeds voraciously upon the young plants; when four or five leaves are developed the danger is past.

Slacked lime or wood ashes, sprinkled on the plants will prevent this pest. Should this be washed off by rain it should be replenished at once.

The next enemy is the cut-worm, which eats the plants off at night, just beneath the surface of the ground. Little can be done to prevent its ravages, although a sprinkling of wood ashes around the roots may help. Slipping a paper cylinder around the plants for an inch below the surface may be practicable for a few plants. Stems as large as a pipe stem are out of danger.

Aphis sometimes infest the plants but a dusting of slacked lime or tobacco will destroy them. They are not apt to trouble thrifty plants.

A much dreaded disease is "club root" or stump foot," in which the fibrous roots become enlarged and growth is checked or ceases altogether. If food is abundant and cultivation is thorough the plant may outgrow this disease, but not otherwise. The disease is caused by a fungous which is very apt to be found in ground where cabbage was raised the year before. For this reason it is not safe to raise cabbage on the same ground two consecutive years. A heavy dressing of lime in the fall and spring will lessen the danger of "club root."

A green worm, the larva of a small, white butterfly, often does very serious damage to the cabbage crop; it preys upon the cabbage from the time it begins to head, until it is marketed or frost comes. Among the remedies recommended are lime water, air-slaked lime, and hellebore mixed four parts



to one. Scotch snuff, and also saltpetre dissolved in water at the rate of a teaspoonful to a gallon.

For marketing, the heads should be trimmed into as compact form as possible, cutting the stump close and leaving but two or three extra leaves to protect the head, trimming the edges of the leaves wherever defective.

The early crop should be marketed as soon as grown, but for the late crop one may choose the fall, winter, or spring market.

To keep over winter, a number of methods are used, but in all cases handle the cabbage while dry and keep as cool as possible, without freezing, or if frozen they should thaw but once.

A good method is to pull the cabbages and, drawing the leaves closely around the heads to place them compactly in a row, roots up, where they grew.

At first throw on a light furrow from each side, and later put on earth enough so that if the cabbages freeze they will not thaw before spring, as it is the freezing and thawing that does the injury.

Two rows may be placed side by side and a third on top and be covered in this manner.

Another way is to dig a hole four inches deep, three or four feet wide and as long as required. After trimming the cabbages into compact form, pile them in this trench, forming a sharp ridge, and place over them a frame shaped like an inverted V. Cover the frame with straw and earth and stuff the ends with straw. Stored in this way the cabbages may be taken out in mid-winter if desired. A few cabbages may be kept in a barrel sunk in the ground, by putting straw in the top of the barrel and covering with boards to keep out the rain. Cabbages which do not have time to head up in the fall may be placed upright in a trench with plenty of earth around the roots. Cover at first with straw and as the cold increases, with earth enough to keep out the frost. In this way many of them can be made to head up in winter.

The varieties of cabbage are so numerous that it is useless to attempt to enumerate more than a few of the best.

Among the best early varieties are Little Pixie, Carter's Su-

perfine Early, Early York and Early Wakefield. One of the surest heading varieties for medium early or late use, is the Winnigstadt. These varieties should be set in rows two feet apart and from eighteen inches to two feet apart in the row.

The earliest of the large kinds is Fottler's Early Drumhead.

The Premium Flat Dutch, Stone Mason and Large Late Drumhead are good late varieties. These should be grown in rows three feet apart and not less than two and a half feet apart in the row. The largest cabbage grown is the Marble-head Mammoth Drumhead. This should be grown in rows four feet each way. The Savoys are of excellent quality, but not sure heading as a rule.

In raising seed, care should be taken to use only the best heads as seed from a loose head will not give as sure heading cabbage. The principal objection to English seed is that their cabbage is raised mainly for stock, and no care is taken to select hard heads for seed. Seed can be raised from the stump after the marketable portion has been removed, but it is poor practice.

Cauliflower requires much the same treatment as cabbage, but is more tender and difficult to raise.

Broccoli is much like cauliflower, but is hardier.

Brussels sprouts do not require as rich soil as cabbage.

Kale is a hardy perennial, not much used for food.

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## DISCUSSION.

M. A. Thayer—What is meant by hardening the plants?

H. B. Rice—I mean by that, exposing them to the air a little while every day before setting them out.

Q.—Would an application of common salt prevent worms from attacking the plants?

H. B. Rice—I do not know that it will. I would like to inquire if any one here has tried a solution of saltpetre?

H. F. Thurston—We used to draw salt water to put on the

cabbages when we lived near the sea shore. We thought it killed the worms.

F. C. Edwards—Has any one used dust? I know of a farmer who lives near Delavan that does not use anything else.

C. E. Tobey—We use road dust and ashes.

Prof. Goff—We used salt very thoroughly and we never had any good results, as it did not kill any worms.

Q.—Does not salt have a tendency to consume moisture in the soil?

Prof. Goff—It does not; that is a mistaken idea. If a barrel of salt will not absorb moisture enough to drip, how much will a teaspoon full on a square yard consume? I have had a little experience with cabbage and I prefer the drumhead varieties.

H. B. Rice—I think cabbage will stand about as much sunshine and not wilt, as any of the plants we set out, but I think it is better to put them out on a cloudy day.

J. S. Stickney—The question of the damage from worms need not trouble the man who grows an acre or more of cabbage, but it might trouble the small grower. A heavy grower near Chicago said: "The little damage the worms would do your plantation would never give you any serious trouble." The remedy is to make your ground so rich that the cabbage will grow right away from the worms.

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## REPORT OF PLANT DISTRIBUTION OF 1894.

J. L. Herbst, Sparta.

Since the beginning of the "Plant Distribution," many new members have been added to our Society and for the benefit of these, as well as for others who may not understand what the "Plant Distribution" is, how it originated and how it is carried on, I will give a brief outline of its history.

It originated with the Thayer fruit farms, of Sparta. Straw-

berry plants were given the public schools at Sparta, provided they would report on them in the fall. This proved a success and Mr. Thayer then made the offer to all school children of the state through the Society. Giving to all school children of the state between certain ages (just which, I have forgotten), six strawberry plants, provided they would send five cents in stamps to pay the cost of postage and packing, and agree to report on them in the fall.

Each year the same offer has been made by the Thayer fruit farms, and each year has been accepted. The year 1893, Mr. Boynton, of Shiocton, donated two spruce trees to each pupil who applied, under the conditions above mentioned. His offer was also accepted by the Society.

In the years '92 and '93, the pupils were limited to certain ages, but the last year, offers were made to all school children who would apply and send five cents, and it was accepted by the youngest pupils, as I received several applications from pupils only five years of age.

Each pupil is required to send five cents in stamps with his or her application, which is to be made by the teacher to the corresponding secretary. Two cents is deducted from this by the secretary, to use in sending back to the applicant, cards on which to report to him in the fall. The remaining three cents are turned over to the firm who sends the trees or plants as the application calls for. Each pupil's name and address, with the teacher's name, and the amount of money sent is recorded.

The Society may then know who receives trees and plants each year.

As the offers last season were made to all school children of the state regardless of age, more than the usual amount made applications. Letters of all nationalities poured in on me at the rate of from seventy-five to one hundred a day for over a week preceding Arbor day, until the postmaster thought I had sent a dime to have my name put in a directory. Each of these letters contained the applications of from one to forty school children, and the total number of those applying for both trees and plants was 3,036, coming from over 465

postoffices. Of the many who so earnestly promised to report, only 448 did as they agreed.

Young plants as well as the old, seem alike affected the past season and the general complaint with the pupils was dry weather. This probably is the reason more of the children did not report, as it is evident some of them had nothing to report on after the season of drought was over. Some reports were very good, but a greater per cent. showed an entire failure on the part of the children to make their plants or trees grow. Those who reported all plants dead were very desirous of trying again, provided the Society gave plants another year.

Making a condensed summary I find the following to be as nearly accurate as I can give you:

#### STRAWBERRY PLANTS.

Total number of pupils applying for plants.....	1,757
Sending fees to the amount of....	\$87 85
Number of plants distributed.....	10,542
Or enough to plant over two acres.	
Number of those who reported.....	253
Number of old plants living .....	734
Number of new plants living ....	4,480
Increased by propagation.....	6 to 1
Per cent. of old plants living .....	48.2
Per cent. of old plants dead.....	51.8

These last figures are based only on the 253 who reported.

The five who obtained the largest number of new plants are as follows:

Earl Cook, Galesville, Wis.....	3 old plants.....	260 new
Harriett Hawkins, Marinette.....	6 old plants.....	300 new
H. A. Lingenfeller, Milwaukee.....	5 old plants.....	200 new
Myra Whiting, Rock Elm .....	4 old plants.....	200 new
Laura J. Lapham, Milwaukee.....	6 old plants....	200 new

#### SPRUCE TREES.

Total number of pupils applying for trees .....	1,279
Sending fees to the amount of.....	\$64 05
Number of trees distributed .....	2,558
Number of those who reported .....	195

Number of trees living .....	224
Number of trees dead .....	166
Per cent. of trees living ..	57.2
Per cent. of trees dead .....	42.8

These last figures based on the 195 who have reported.

The five whose trees made the most growth are as follows:

Henry Wolkow, Hartford .....	5 inches.
Harlie Thompson, Livingston .....	4 inches.
Mabel Gibson, So. Kaukauna .....	4 inches.
Mammie McDonald, Forest Junction .....	14 inches.
Carrie Seip, Forest Junction .....	18 inches.

Growth ranged all the way from one-half inch to one and one-half feet.

If the Society gives plants the coming season, let me offer a few suggestions which I think will be a help in carrying on this distribution of plants. A year ago when I returned home from our winter meeting I formed a plan by which I thought applications for plants could be made to me with less mistakes than heretofore and also that more time would be given the children to make their applications.

I sent an article to various newspapers of our state, giving the two offers of the society and how and where to make applications.

In spite of this, applications came to the Wisconsin State Horticultural Society, Madison, they were then forwarded to Evansville, from there to West Salem, and from West Salem to me at Sparta. Others went to Mr. Philips, some to the firms sending out the plants and the remainder came to me, with my name spelled in fifteen different ways and four languages. Some sent only a one cent stamp, others a two cent stamp and some expected to receive both offers for five cents. Some applied in person, and some through their parents instead of through their teachers. Various other mistakes were made.

In order to guard against these various mistakes, I would suggest that the Society request the state superintendent of schools to send a circular to the schools of the state, stating just where, how, and when to make the application. This, no

doubt, will help check, to a great extent, the various errors which are made in applying.

Again, let the Society request this circular to be sent out soon after the offers are made, and not wait until Arbor day.

It takes some time to record all names, and for the firms to put up the packages, and if applications are not made until Arbor day, the children are rather late in receiving their plants.

I think that by resorting to the above method this plant distribution can be carried on much easier and with fewer errors and less correspondence on the part of the Society. The state superintendent will, no doubt, be glad to aid us in this direction.

Mr. Boynton wishes to renew his offer another year if the Society will accept it. Heretofore Mr. Boynton has not sent out instructions for setting the trees, but next year full instructions will be sent out with each order sent in. It was impossible for Mr. Boynton to be here at the meeting, but his best wishes for a successful meeting are sent to us.

Report was referred to committee on trial stations.

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### DISCUSSION ON STRAWBERRIES.

C. E. Tobey—Does Mr. Hanchett think it wise to advise the use of one fertilizer only for strawberries?

Will Hanchett—I would not. We have used the Michel, the fault with it is its season for blooming is too short. It does not blossom earlier than the Warfield. Van Deman has been more productive with us than the staminate varieties. We have used Capt. Jack, Michel, Jessie, Enhance, Chas. Downing and Wilson. We think the Wilson does the best for the Crescent. Enhance has been making many friends about Sparta. I do not like it for the reason that if we use it for fertilizing the Warfield we have to ship it as a different fruit. We put our rows four to one. Last season we had one row of staminate to two of pistillate. If your use Van Deman, one-third is

sufficient. This year we shall only use one-fourth. We are experimenting in this line.

Most of the pistillate varieties are free runners, the staminate are not free runners. I think if they are put in the same row the pistillates would soon run out the staminate.

We trim back the runners with a rolling coulter. We aim to layer each plant so the new plant will extend towards the outside. I do not know but that it would pay a person to go through the rows and cut them out, although we have never tried it.

A. L. Hatch—Hasn't the dry summer helped you out on excess plants?

Will Hanchett—Yes, it has. We take a hoe, before any of the plants have rooted, and hoe the ground up thoroughly and then train the runners where we want them.

F. C. Edwards—How far can you ship Haverland and Jessie?

Will Hanchett—That depends on the railroad time and connections. They ought to be picked one day and be on the market the next morning.

F. C. Edwards—Have you dropped the Crescent entirely?

A.—We have.

Q.—Why?

A.—It is no good.

M. A. Thayer—There are gentlemen here, Mr. Hanchett, who doubt your statement that the Crescent is "no good." Now, may not something, with regard to your results with it, be attributable to your soil?

Will Hanchett—We tried it until we got something better. Our soil is a heavy clay. We picked our Van Deman nearly as long as we did the Warfield. There are lots of localities where I would not plant the Warfield because it does not stand the drouth. I would not plant on knolls, or on a very sandy soil. The Warfield does the best in some of our narrow valleys; there is a drainage in those valleys. We have found in the last two years that the Warfield is almost iron-clad against frost. At first we shunned those locations on account of the frost, but we have since found that it is the place for the Warfield.



C. E. Tobey—I would like to ask Mr. Schofield what varieties he uses for staminate?

E. J. Schofield—I have several varieties. The Enhance does well; Parker Earle does all right, but it is hardly early enough. If I was going to tie down to one variety I would use Beder Wood.

Franklin Johnson—I would like to question these gentlemen a little about the principle of fertilization. It has been stated, by some people, that the staminate have an influence over the berry, for instance a very large staminate will produce a large pistillate. Does that agree with your experience? Does the staminate influence the pistillate?

C. E. Tobey—Ask Prof. Goff to give his experience.

Prof. Goff—General experiments show that there is very little or no influence. It is extremely doubtful if there is any influence.

Mr. Pierce—I have been very much interested in this discussion. I used to think I knew everything about strawberries and I used to publish articles about the cultivation and care of them, but now I do not think I know much about them. I have been experimenting and I have found out that there are no two varieties which we can take and call them "the two best varieties." I took some of those that are called the poorer varieties and filled the ground with fertilizers. I got big berries and lots of them.

I've got a plan I am going to put in operation next year. I am going to give it to you. I don't ask any of you to try it, you may think it is absurd. I think we must combine and get the largest and best. I made two rows fifteen inches apart, planted with Bubach; the ground is very rich, the Bubach will use a great deal of nitrogen. I place boards all along the rows. If I grew Michel I would put in very little manure, but in raising Bubach I put in a good deal of manure. I fill it up pretty near full. I give the plants all they need in food and drink. I study a variety, find out what it wants, then give it to it, and it is the duty of each one of us to find out what each variety needs. For Michel, I would use ashes. I would not use so much nitrogen for that as for some others. The idea of put-

ting the rows closely together and using the boards is to use less ground. Why, a man with a little garden spot can raise all the berries we want.

A. L. Hatch—I would like to ask Mr. Stickney about the cultivation in Milwaukee county; he has reported that wonderful crop of Mr. Baumbach's.

J. S. Stickney—His crop is Wilson and Crescent, two rows Wilson and six rows Crescent. He cultivates just as good as he can, removes mulch in the spring and runs his cultivator. He suffered a hard set back by putting the mulch back in the spring; he will never put it on again until after all danger of frost is past; his plan is to take off and cultivate, then put back again; his rows are three feet apart and the plants are one and one-half feet in the row; he has alleys wherever he needs them for getting at the fruit and putting on and taking off the mulching. He mulches with marsh hay.

A. L. Hatch—Can you suggest any improvement in his cultivation as you have watched it for all these years?

J. S. Stickney—No, unless I should suggest less work, and then, if I did, I would get less berries. He has cultivated more this year than ever before; his cultivators were going all the while and I think it helped him to tide over the dry weather. He uses the drag teeth cultivator. This year he took pains to go through with his hoe and lay the runners; he spent weeks and weeks in this way; he lays them in about as he wants them; he uses a narrow, five-inch hoe. His crop was 1,700 bushels from five acres, less ten square rods; that was in round bushels, and a careful saving would have given another hundred bushels. He has never approximated that yield and I tell him he never will.

Q.—Did you ever try the single row system?

J. S. Stickney—Yes, with such poor results that I would not want to continue it. Mr. Baumbach's large yield was three years ago. He is now studying the subject of commercial fertilizers. He has never used nitrate of soda or any of those fertilizers. I believe that the super phosphates, nitrate of soda and muriate of potash will do us a great deal of good used liberally, at the rate of one-half ton to the acre.

Prof. Goff—So far as I know there is nothing better for strawberries than well rotted stable manure.

Q.—Does Mr. Baumbach manure heavily?

J. S. Stickney—He does. He does not drain regularly but where there is a sag in the land he drains. He has irregular drains where needed.

J. D. Searles—Did he make a great outlay for that enormous crop?

J. D. Stickney—He did; he knows he is not the most economical grower, but he knows the balance is on the right side and that is all he wants. I draw my manure a long distance. If I can supplement that by commercial fertilizers in a practical way, it would be a great advantage to me.

J. D. Searles—Mr. Henderson told us that he got nitrate of soda and put on a plant what he could take between his thumb and finger, and he got a great deal larger yield than he did with other fertilizers.

Prof. Goff—Mr. Henderson lived where manure was worth from three to five dollars per load. He said if he could have barn yard manure delivered for three dollars per cord he considered it the best of any fertilizer he could use. I do not think it is time for us in Wisconsin to substitute the commercial fertilizers for stable manure, we had better save all of the stable manure than to use them.

Discussion closed.

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## SMALL FRUITS FOR WISCONSIN AS PRODUCED IN 1894, ASIDE FROM STRAWBERRIES.

R. J. Coe, Ft. Atkinson.

I was away from Wisconsin until about the middle of July so a part of my talk will be what I found out by asking questions. Our grape crop was good in quality.

I was in New York about eight weeks and while there I looked up the small fruit crop a little. I found that there was

at least ten acres of small fruit grown there, to one acre here. I also found that it costs much more to grow an acre of fruit there than it does here; they do not think, in New York, of putting out an acre of small fruit without using commercial fertilizers in the proportion of about one-half a ton to an acre. If they can afford to use commercial fertilizers and get a smaller crop in return than we do and then take a less price, we in Wisconsin ought not to be discouraged at the outlook for small fruit. They sell nine-tenths of their fruit personally. One-half of their fruit they take out in the country and sell out of their wagons for six cents a quart. They sold blackberries for five cents, and yet they were making a good living at it.

Geo. J. Kellogg—I have no paper on this subject. The best small fruits I had last season, aside from strawberries, was gooseberries, and they were the Downing; I believe that is the best gooseberry we can plant. I would not give a cent an acre, if you would put them out for me, for the Industry, and I feel the same about the Fay currant. The currant worm did not trouble us ten cents worth this year and we did not spray for them either. The Older raspberry was taken almost entirely clean by the June frost. The later varieties that were not in blossom at the time of the frost, gave us about half a crop. Cuthbert gave about half a crop.

A. A. Parsons—For red raspberries we grow, to the exclusion of all others, the Marlboro. We used to grow the Cuthbert, but we do not grow so many now, as formerly. We are growing, for a late variety, the Brandywine. For black, we grow the Gregg. As we have no foreign market that would pay us to ship to, we must sell on the home market.

We grow the Briton blackberry and Downing gooseberry. Of currants the Cherry and Red Dutch; the Red Dutch yields well.

Of grapes we grow Concord, Delaware and Brighton.

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#### DISCUSSION.

J. S. Stickney—My currant crop was four hundred bushels from about four acres, from bushes planted eight or nine years

ago and neglected ever since. They are about one-half Holland and one-half Prince Albert.

When I put out my new plantation, I planted eight acres and planted five feet apart each way. I do not propose to neglect those as I have the others. One and one-half acres of the new plantation are the Fay; they will, no doubt, cultivate my patience, and that probably needs cultivation. The faith that I had in them came from the first one hundred plants I got; the growth pleased me and the fruit pleased me also. In a very brief time I made plants enough to plant out six acres.

If you will cultivate your ground well and hill up your plants, and cut back to the ground, you will get all the plants you want. I am convinced of one thing with regard to the Fay and that is it is necessary for you to make your ground rich and keep it rich. In other words, give the best of cultivation.

A. G. Tuttle—Several years ago, I had a row of Fay and along side of it, a row of Long Bunch Holland. From the Fay I picked sixteen quarts, and from the Holland I picked ninety-six quarts. They had the same cultivation.

J. D. Searles—I want to know about a very fine blackberry in this state, which I believe came from Wales, that has no name. I suggest that Mr. Stickney and Mr. Tuttle be appointed a committee to give that child a name.

President—I will refer that subject to the committee on nomenclature.

J. S. Stickney—I will not take two minutes of your time to tell all I know about that blackberry.

I received the stock from Robert Hassel. He claimed he got it from the old country under the name of Ancient Briton. I sent some of that stock to Mr. Tuttle as the Ancient Briton, and if it is not the Briton, I do not know what it is.

A. L. Hatch—Yesterday, Mr. Noel France made the suggestion that we do as the bee-keepers do, that is, when we have a disputed fruit, that we follow out our investigation and settle the point.

I move that the president appoint a committee of three on field trials. Carried

President—I will appoint on that committee Noel France, A. L. Hatch, and J. S. Stickney.

Adjourned.

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Wednesday Evening, Senate Chamber.

The program for the evening was opened with a selection from James Whitcomb Riley, entitled: "Thoughts for the Discouraged Farmer," and given by Mrs. Janet B. Day. Mrs. Day was heartily encored and responded by giving, "She Leiked Him Rale Weel."

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#### PRUNING AND GRAFTING IN SEASON.

Mrs. E. W. Fisher, Janesville.

It seems to me that all lovers of nature cannot help feeling interested in horticulture and horticultural meetings. It is a fact, not to be disputed, that God considered a garden the most beautiful place on earth for a home or he would not have chosen it when he had the whole world to choose from.

And can we conceive of anything that adds more beauty, happiness, or wealth to a home than its horticultural surroundings?

We are not satisfied with beautiful, fragrant flowers in our gardens, we want them to be a part of our own lives. We gather to ornament our parlor, to grace our hall, to perfume our sleeping apartments, to add dignity to our dining room, and a bouquet is even placed beside the kitchen clock to sweeten the disposition of our servants.

This is also true of the great variety of delicious fruits the infinite Creator has placed within our reach which are beautiful to the eye and pleasant to the taste.

So with the many ornamental trees, shrubs and vines. We plant for windbreaks, for hedges, for the beauty of a single

specimen or group them together, forming a background to our lawn, or a screen before an unsightly object. We train the vines about our porches, or over trellises, in our garden.

Neither are we satisfied with our conduct, for we prune, and then graft from other's virtues. This may not be true in every case. Possibly there are those about us who are blind to the matchless beauty of purified character, and yet sometimes the thought comes to me, they are not blind, but "born tired." It is not the fragrance of the flowers, or the flavor of the fruit they dislike, but the seed time, the planting, the destroying of weeds and insects. They are not capable of pruning, and grafting, neither would they have the ambition to do it in season if they were. Oh, I wish we might show them there is a kind of pruning and grafting, which means more than the cutting of twigs, or the grafting of a new head on the old root, or that they might be grafted in this way.

Do they realize that over their moral and intellectual being they have full sway, and that unless they are wise in season, they cannot be happy in old age? Need we say to them:

"Life is before you, from the fated road  
Ye cannot turn, then take ye up the load.  
Not yours to tread, or leave the unknown way.  
Ye must go o'er it, meet ye what ye may?"

Surely they know that the seed sown, will spring up in blessings or curses, and if they were born poor, genius, the greatest gift to man, was nourished in poverty; and that in destitution and adversity men have studied and trained themselves, have pruned, and grafted until they have emanated from their surroundings the shining lights of their times.

They applied the gladiatorial method of training physically, to their mental training, and had plenty of what Robert Collyer defines "clear grit." He says: "It is the best there is in a man, blossoming into the best he can do, in as sweet and true a fashion as a rose blossoms, or a bird sings. It is that noble quality in man, or woman, which will never give way except, in a true way, and for a good reason."

Their early life should not be spent in fruitless endeavor. It would be folly to attempt to reach the skies by mountain

piled on mountain, or expect Hercules to answer your call for help, when God has given you a brain and two hands.

Lay your own corner stone and let it be business grafted with character. Labor always was, and ever will be, honorable. You have but to dignify your task and work as well as pray, ever remembering, as Shakespeare tells us: " 'Tis true the world was made for Ceasar, but for Titus, too."

If born on a farm, do not forsake the occupation of agriculture or horticulture, thinking to find a more exalted calling. Do not make the mistake of giving a life of independence for a stewardship to men. Even the goddesses, Ceres, Flora, and Pomona, will crown you in your inherited calling and you will be the freer, happier, nobler man.

Those who live upon our farms are the reserve force of this great nation. Rome fell because her voters were only loafers, and citizens; they could sell their votes, as they had no homes to protect.

But whatever profession you choose, be confident you will not fail if you understand it. With a thorough knowledge of your business, and a continual pruning and grafting in season you will succeed.

Will you fail to seize the opportunity for employment, when the want of it causes hundreds in our land to cry for help?

Neither will you say, "heaven is unkind to man, and man alone. Shall he alone whom rational we call, be pleased with nothing, if not blessed with all?"

If so, we will not class you among our friends. You are too ungrateful. You are like the base Judean who threw away a pearl richer than all his tribe." But we will look around us for those whose actions render forever sweet memories. Those who are grafted with industry, hope, energy, duty, love, and all those qualities which make life worth living.

But you say it is in vain you ask me to take upon myself such a load of business, there will be no happiness in life.

Indeed, sir! But, please excuse me for saying you are very much like the man across the way. He, too, was afraid there would be no happiness in life for him.



He did not attempt to buy a farm for fear he could not enjoy life if obliged to meet the payments, so he just rented one. It was much less trouble. He did not try to raise stock, for while it would nearly take care of itself in summer, he was afraid there might be bad storms in winter, and surely would be cold weather. So he kept a cow to supply milk for the family. Butterine was much cheaper than real butter. He had a team and an extra horse to "go for the mail with," he said; but we couldn't see why he was to so much expense to get the mail as he took only a weekly paper. Some said he was waiting for "his ship to come in," and expected a letter from a seaport town.

He did not have a garden because cucumbers were liable to give one the cholera morbus, and onions made his wife's breath smell; he thought a potato patch was enough.

Fruit, he said, was a nuisance on the farm of a man who had daughters, because they used it to tempt the young men with, but they were not to blame for that, they inherited it from Mother Eve.

Flowers were still worse, for they created a desire to have a wedding, that they might have a chance to display their taste for decoration. So, like yourself, he carefully guarded against everything that would create more business than pleasure for him. He has lived on one rented farm and then another for twenty years without once pruning or grafting for his ideal happiness.

A few years ago, when his neighbor's daughter went to the university, his went to the city to work in a laundry, and this winter when his neighbor's two sons came to Madison to take the agricultural course, I said to him: What are your sons doing? "Oh, tinkering around at most any thing they can get to do," he replied.

The difference in the kind of happiness the two families enjoyed need not be described.

Do you not now begin to realize there is a false and a true happiness, as there is in all things in creation, and if we would be true to ourselves we need to know one from the other.

Varro enumerates seven hundred kinds, and Pope thus describes some of them:

“The learned is happy, nature to explore.  
The fool is happy that he knows no more.  
The rich are happy in the plenty given.  
The poor contents him with the care of heaven,  
See the blind beggar dance, the cripple sing,  
The sot a hero, lunatic a king.  
The starving chemist in his golden views,  
Supremely blessed the poet in his muse.”  
See some strange happiness every state attends.

Truly the happiness which will create in you a desire for business, for activity, for knowledge is the priceless kind. It is the kind you and I are to count above all price, and is the result of honest toil in any vocation chosen.

Other things being equal, toil will make you, not simply a man in form, a sham in life, but a reality. And if the temple of life you are building shall be a success, you must deny yourself many times where you indulge once. If your advantages have been small, if you take root in the world, spring up, and send forth branches so broad that your aged father and mother, a womanly woman, and a family of bright young lives all find shelter there, you have filled a glorious mission. Let West bring his brush, and Phidias his chisel, for art and sculpture can find no grander subject.

It has been said that every day is a little life, and our whole life is but a day repeated. If so, how dare we misspend it, for if your ambition leads you to desire a mountain of wealth, you can only form it by successive strata of rock and, Columbus like, you must catch sight of the floating seaweed if you would bestow confidence.

Do not despise economy, it will give you cheerfulness, health and ease; but never mistake stinginess for economy, they are not even sisters. Economy never denies us the comforts or necessities of life, but many a flippy floppy feather (like the political rooster) you will be glad economy never allowed you to wear.

I would not have you think that wealth makes the man, but that the possession of it affords him opportunity for culture, independence, and the satisfaction of acquirement; but better than all, it grafts him with industry, thrift and

good sense, enabling him to multiply the loaves and fishes. And while I would not care to lead the life of Silas Marner, yet we frequently see the other extreme causing much greater crime and misery. I regret that the trend of the age is much more to the lavish use of wealth for the gratification of society. Lady Henry Somerset's appeal to the strikers at Chicago brought from a local daily this reply: "Many young men think if they were only a clerk like Marshall Field they might have his success, but the facts are, if they get \$1,000 salary, they spend it." They fail to join the better elements of society, fail to save half their earnings. Most of them go ahead and spend all their wages until twenty-five or thirty years have passed away, then marry, with no home or any thing to start in life with.

Their responsibility is great. No doubt their lot will be hard. The fault is their own.

If men and women would, in a quiet way, try to lift up every man and woman they meet to a higher plain, that is by teaching them to save their earnings in order to become capitalists, they would soon elevate society. And with the seed of thrift sown in the young man's nature, before he asks a woman to forsake all her past, and with him share all the responsibilities, duties, trials and pleasures in life, there will be a ray of hope, that he will not destroy the confidence which his love inspired. And if some true friend has sown the seed of industry, energy, and self denial in the woman's heart, she, by continual pruning and grafting, will keep him from going in the wrong direction.

And should a calamity overtake him, he, like the man who lost his marble mansion, will put up a pine shed and write thereon: "All gone, but wife and home." They will not take advantage of the disaster or the hard times to force themselves on the charity of others.

May we hasten the time when more real, living happiness shall exist, and "whatsoever our hands find to do" we may do it, as there is no work, nor device, nor knowledge, nor wisdom in the grave. The season for pruning and grafting will be o'er.

## FLOWERS.

Dora Haviland, Madison.

Those things which are useful and beautiful are good for life. Every one admits that that which is useful to us in our daily vocations is good, but it is to be lamented, that there are so many living on God's earth who treat some of His most beautiful gifts slightly, as if they were of no use. It is very difficult to draw a line between the useful and beautiful, for as civilization advances, implements which were once crude are now made artistic. But if it were possible to take away all that is beautiful in the world from the useful, would our lives be more satisfactory? They certainly would not. All the beautiful things in this world were made for man to enjoy, and if he does not enjoy them it is his fault. This earth was created for man, and all its elements for his convenience. He was not intended to be a slave, to serve the elements. Those people who avoid all the luxuries of life are not making any noble sacrifice, they only slight God's gifts. All the greatest luxuries are the most common and if we could thoroughly enjoy the events of each day our lives would be so taken up with pleasure that we would not have time to worry about the luxuries which we are not permitted to enjoy.

At present the flower garden seems to play a very small part in horticulture. Is this because flowers are less useful, therefore less needed? True the apple and grape furnish food, but should the search for food be the all absorbing interest in this civilized nineteenth century? Do we not need to feed our souls as well as our bodies? Flowers certainly do furnish us inspiration for noble thoughts; they seem to speak to us through the expression of their faces. Their meaning many able authors have tried to set forth in verse. The abundance of flowers in the spring time is invigorating to youth, and pleasing to old age. Some plants, like men, are widely known, while others are plants of their own locality. All flowers are beautiful, but they differ widely in their style of growth. They carry themselves as it were according to their birthright.

Some, like the aster, have a lofty manner, while others, though humble, as the spring violet, are none the less sought for. Many flowers, like the hyacinth, tulip, and the famous roses of York and Lancaster, have been the basis for tradition and fabulous tales. Flowers add beauty which is essential to a perfect life, and we could much better do without poets than without flowers.

The cultivation of flowers is a most pleasing occupation, and the flower garden should no longer be a confused patch in a secluded corner of the house yard.

Flowers are not curiosities, they are among the necessities of a home, and the designing of a garden is a fine art which requires taste and invention. Is not the producing of beautiful and perfect flowers, which involves real nature, of as great importance as other arts, which are an imitation of nature? Many artists could well improve their paintings by a better study of nature, and the best painters cannot represent flowers so that they will have any thing of their natural charm. The person who cultivates and cares for the rose gets much more pleasure and benefit from it than the artist who paints it with his brush. The one works in the fresh air and sunshine with the singing birds, while the other labors among the disagreeable odors of paint in a studio.

There are few people who can give up their scientific horticulture or floriculture; but there are very few homes indeed, that might not have about them some well cultivated plants and vines. The humblest house will look cheerful if its grounds are well cared for, and a mansion certainly looks gloomy if it has no arbor or flower garden near it. The flower mission, which is established in some cities, is doing a most excellent work. Its object is to encourage the raising of flowers in the poorest homes. At the beginning of the season, members of this society visit as many homes as possible, which have children large enough to take an interest in plants; these children are presented with seed, they are visited again when their plants are in blossom, and the child whose flowers show the most care is awarded a prize. The small boy can get just as much pleasure from his little flower

garden as the king of Babylon did from his hanging gardens. As civilization advances, let us hope that much of the time and money which is now spent in vice, will be used in a more aesthetic way; and may the day come when no child in an American city can say it does not know what flowers are.

Gardening is not a very simple occupation; the gardener must make a study of his work if he would have his flowers and trees arranged satisfactorily. However choice his shrubs and plants may be, if they are set in a hap-hazard style their beauty will not be appreciated. He is the best gardener who can arrange the most beautiful garden with the least material. More attention is gradually being paid to this art both in the homes and in public parks, and recently an effort has been made among school children to interest them in planting trees and flowers in their school yards. But at present America is far behind European countries in the art of gardening; and it is to be hoped that as civilization and culture advances we can look forward to the time when she will excel Great Britain and France in this art as she has already done in other arts and inventions.

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## HOW TO KEEP THE BOYS ON THE FARM.

Mrs. L. W. Heindel, South Wayne.

No doubt you all have heard of the little girl who had been taught a passage of scripture to repeat at a Sunday school entertainment, and, when the time arrived had entirely forgotten it, although she knew it perfectly before she appeared before the audience. But if she could not remember the scripture, there was one thing she could remember, so she repeated the following:

“Pins and needles, needles and pins,  
When you are married, the trouble begins.”

Now, I think when one gets into a horticultural society the trouble begins. You see, there are a few at the head of the so-

ciety who know so much, they never dream there might be some of us small ones way down the line who know almost nothing, and what we do know is neither very instructive nor entertaining, and yet after hearing all these wise and witty things, they expect us to get up here and display our ignorance. I think it is pretty hard on the audience, to say nothing of ourselves.

In horticulture I am an amateur, but in the raising of boys I begin to feel that I am an old hand in years if not in success.

To make a success of anything we should begin right, and if we want to keep the boys on the farm the first one to keep is the father. If he is always dissatisfied, and complaining of hard work, poor crops, and low prices, and spending his evenings and stormy days in town, we may expect the boys to do the same. Whose example should they follow, if not their father's?

But let the farmer ennoble his occupation, not belittle it; let him teach his boys that all honest labor is honorable, and do not let the boy grow up with the idea that because he works on a farm he is not a gentleman. Many a farmer's boy with his patched clothes, cleaning out the barnyard, is more of a gentleman than most of the soft, white-handed young men they meet in town whose principal occupation seems to be promenading the streets to show their fine clothes, and flirting with silly girls. We can degrade our work, but our work can never degrade us. Gain your boy's confidence, and to do this give him yours. Teach him that you believe in and trust him, and that he can believe in and trust you. Never betray any one of his confidences or ridicule any of his ideas, no matter how childish they may appear to you, for nothing will so hurt a boy's feelings or cause him to lose confidence in you as ridicule.

Take your boys with you while they are small; they may trouble some at first, but you will soon be surprised to see how much they will know of your work, how interested they will be, and how much they can help you.

Do not give the boys all the disagreeable work, things you

do not like to do yourself; they do not like dirty, disagreeable work any better than you do, and yet how often we see, when there is some work far from agreeable, the father says: "Boys, you may do that work today, I must go to town." Now, they know that errand to town is an excuse, it is not so easy to fool a boy as some people think. Help them and they will do it willingly. It is not always the work we object to, but the idea that it is put upon us because it can be.

Give the boys a chance to earn money and to learn how to spend it.

Give them something for their own and when it is sold give them the money; it would be just as dishonest for you to appropriate their money as your neighbor's. And after earning money they should have the spending of it if they want to spend it. Of course, they may spend it foolishly for a few times but, if they do they will not be the first who have done so. I have known full grown men of mature years do some very foolish things with their money (but it is not always wise to tell them so), and I dare say there are few farms, if we could look them over, but we could find the relics of the farmer's foolishness. A few mistakes will teach the boys more than anything else; we all learn more from our mistakes than our successes. And this is what I mean when I say teach them to spend this money. I imagine I hear some one say: "No danger but they can spend it easily enough." Yes, they can spend it, but it is the duty of every parent to teach children to spend it judiciously. There would not be so much poverty and misery in this world if every boy and girl were taught how to spend as well as to earn money; any one who will work can earn, but a great many do not know how to spend. I really think that farmers' boys and girls are better taught this than most of the young people in town. Remember the birthdays and Christmas, to make them bright with presents and good wishes. I know some people say it makes children selfish and they just look for the presents. My experience is that instead of making them selfish it makes them kind and generous; being happy themselves they study to make others happy and even while quite young, will save their



money for that purpose. You may say, very nice, but pretty expensive in a large family. Yes, pretty expensive, if that is what you call it, but sometimes it is rather expensive to get a boy out of a scrape he would never have been in if he had had the right treatment at home, and it costs a good deal to pay for tobacco and liquors after he gets to spending his evenings at the saloon in the nearest town, as he is quite likely to, if the saloon is made pleasanter than his home. The old saying, "an ounce of prevention is worth a pound of cure," holds as good in this case as in any other; it is easier to keep the boy than to get him back after he has once got away.

Any one will be kind and loving to a little child, but how often after a boy becomes fourteen or fifteen, it does seem as if he is almost neglected, and yet, that is just the time he needs the most consideration.

There is no time a boy needs kindness and love and care and prayers more than from twelve to eighteen; before that he is mother's boy, but now he must take his place among other boys and this is the time father and mother must work the harder to keep their influence. Now is the time to devise new amusements. Give him good books and papers to read. If he has any musical talent, get him some instrument. If he cannot do anything but beat a drum or blow a mouth organ, let him do it, if you can keep him home evenings.

Let him invite his young friends often. No place in the world can boys and girls enjoy themselves more than in a big farm kitchen, where they can pop corn, crack nuts, eat apples and have a good time generally, without fear of pulling the tidies off the chairs or soiling the carpets and curtains.

I know it makes work, but if you are the right kind of a mother and have the right kind of boys, they will help you clear up afterwards, and you will have enjoyed yourself as much as they. Some mothers seem to make a mistake and instead of saying "Cleanliness is next to Godliness," they say Godliness is next to Cleanliness. Teach your boys to be cleanly in all things, person, habits and mind, but do not be so over particular that you make the whole family uncomfortable. You cannot keep a house so clean that there is no dirt

in it, and nothing annoys one (and particularly a boy or man) more than to be continually scolded for making dirt, so learn to endure it and you will have your reward in your boys thinking home is the best place and mother the best woman living. Never mind how nice the neighbor, who has no children, has her house furnished, don't you have any thing too good for every day use. She is not as happy now as you are. If you cannot have a nice guest chamber and a good, comfortable room for the boys, have the boys' room any way. I know you will make the guest comfortable. Fix up their room the best you can and let them have their boyish belongings there. With a little help from you they will soon learn to take care of their things; of course they won't keep things as nice as you would, but never mind that, by and by these boys will be gone; some out in the world and some perhaps in the grave. And there will come a time when you will go to clear up and, as you think then, burn up what some people call "boys' trash." but you will find here a ball, there a top or a knife, and though you may not have thought of them for years, you will now remember when each one came in the house and how proud the little owner was of it, and with tears in your eyes and sorrow in your heart you will put them, not in the stove, but carefully away, and many times you will look at them, and long for a sight of the little boys you used sometimes to think made so much work and confusion, and the boys' room will become almost sacred. One of the worst and most common mistakes in a family is to make a favorite of one child to the exclusion of the rest, or to make a "scape goat" of one to vent all the faults of the rest upon. You may think the child does not know it, but he does. I have heard children say, "I cannot please mother, but the rest are all right." I know we cannot use the same measures with all children, because no two dispositions are alike, but we can, at least, correct and commend where it is needed and not show partiality.

I was reading, not long ago, of a woman who discovered in the wall in front of her sewing table a small crack, and every day as she looked at it, it seemed to grow larger, until it defaced the whole wall. She tried to patch it, but that made it

worse, and finally she bethought herself to turn her chair and sit with her back to it. She did so, and it soon resumed its original size, and did not amount to much after all. Now don't you think that is the way with a good many of us with our boys? We magnify some faults until we hardly see anything else in them, and make ourselves and them unhappy, when, if we would turn our back to it awhile we would forget it, and they would outgrow it. If you make a practice of calling a boy bad, he will very likely verify it, while if you encourage him and let him know you expect him to do his best he will probably do so. We usually try to come up to people's expectations.

I remember once my mother called me a nuisance. Now, I do not know as there was any particular reason for it, but if I recollect rightly (and my memory is pretty fair), I think I proved myself one before the day was over, for I never believed in having anything I hadn't earned.

Give the boys all the education you can, but if you have one who is easily led, whose will and self control are not as strong as they should be, do not send him away from home if you can possibly avoid it. Probably he is the kindest hearted one you have, the one who will do the most for you, is the best worker, and it looks hard not to give him the best possible chance. But he would better have less education than have a certain kind which he will be sure to get if he gets off with a lot of boys gathered from every where, for it is a lamentable fact, that there are a great many boys in our schools and colleges who are there simply because their fathers can afford to send them, and they would rather go to school than go to work. In some cases it is a relief to the parents to have them away from home even though they know the school is doing them no good. As soon as a boy knows what he wants to make his life work, help him to educate himself for that, thoroughly. As to keeping the boys on the farm, if they are not cut out for farmers, it will be bad for the farm if they stay. We do not expect all the boys born on farms to stay there. The most of the great men of this country were born on farms, and today some of the best and brightest boys in the world

are growing up on farms, the men of the future, who are to be our presidents, chief justices, professors and literary men, and take their places among the first of the land.

I suppose if any of us knew we had a boy who would be president, or some very talented man, we would be very kind and considerate to him and do all we could to make him happy, and bring him up as he should be. As we do not know that we haven't such a one, I wonder if it will not be well to treat them all as well as possible, for you see we cannot tell which one it might be.

Do you know, friends, I sometimes think that is the difference between fathers and mothers? If one boy is something to be proud of, stands high in school and college, in fact is a little smarter than the rest, the father seems to think more of him and is very likely to take to himself the credit of his advancement, while you will see the mother clinging to the one who needs her prayers and care and watchfulness every day.

But the best place in the world to raise these boys, and keep them until they do choose their life work is the farm. There is plenty of fresh air, work, fun and good living, and there should be the best living one can have, for every thing can be raised, meat, vegetables and fruit. And good living is a very important factor in raising boys, for when he finds his mother can cook a little better than the neighbors, it is likely to cause a "home run" on the part of the boy. I would like to tell the sisters something which I do not expect any of the brothers to listen to. Never ask help from a hungry boy and this applies to boys of all ages, from five to fifty, and the nearer fifty, the more danger in asking. I have had a good many years experience but I would as soon go to the pasture and shake a red rag at that infuriated animal, as to ask help just before dinner on a busy day; but cook some favorite dish, feed them well, look good natured (if you can) and after dinner it will be safe to ask almost any assistance. You know they say the question with the American people is, "will it pay?" so some one may say, will it pay to do all these things for the boys? Well, it won't pay to raise boys if you don't do all these and many more. And no matter how many bushels of corn,

or tons of hay, or cases of berries you can produce from an acre of land, the most valuable crop on the farm is the boys and girls. But if you have an idea you can begin cultivating after the frost is out in the spring and then in the fall give winter protection and leave until spring again, you are very much mistaken. They need winter protection, but it consists of good fires, comfortable quarters, school, work, and plenty of good times. It will keep you busy to provide all this, but without it your summer's labor is wasted and you might as well have grown a crop of Canada thistles.

Perhaps you think I am rather partial to boys. Well, like Topsy, I will "fess" that I am. I liked little boys when I was little, I liked big boys when I grew up and I like boys little and big now. But, explain this if you can, with all the care I have taken of my boys, as they grow up they seem to like girls best, and the only explanation I can give is, they inherit it from their father. It was always a failing of his.

I think that message that was brought to earth almost nineteen hundred years ago, is what we need to help us with these boys. We all love our children, but do we show it as we ought?

Last summer within three months three young men met sudden deaths in my own neighborhood. The first went from his mother's side to see the young lady he was soon to marry; was asked by a young friend to go just a little way to shoot some ducks, and in less than an hour from the time he left home, was brought back with both charges of the gun in his body, and lived only thirty-six hours. The next went to the river with a party of friends and in a few hours was carried home drowned. The third was found dead on the river bank, shot through the body, whether by accident or murdered, will probably never be known. I believe he had no parents living. I know little of him, as he was a stranger in our town. In either case it might have been your boy or mine.

The first mentioned was the son of one of my nearest neighbors, an intimate friend, of the same age as one of my boys, and what think you were my thoughts those days as I stood by that mother? I think her greatest comfort was in thinking

of the pleasant day they had passed together before he left the house, as it was late in the afternoon when the accident occurred. We never know when we see them go from us, if we will ever see them in this world again, and it seems a very little thing to be always kind and loving.

In closing I want to read you a little poem which will express much better than I can, what I mean, and let us profit by it and not hold back our love and kindness until it is not needed, but make the farm and home so pleasant that the boys will have no desire to leave it.

“If I should die tonight,  
My friends would look upon my quiet face,  
Before they laid it in its resting place  
And deem that death had left it almost fair;  
And, laying snow white flowers against my hair,  
Would smooth it down with tearful tenderness,  
And fold my hands with lingering caress,  
Poor hands, so empty and so cold tonight.  
If I should die tonight,  
My friends would call to mind, with loving thought,  
Some kindly deed the icy hand had wrought,  
Some gentle word the frozen lips had said.  
The memory of my selfishness and pride,  
My hasty words would all be put aside,  
And so I should be loved and mourned tonight.  
If I should die tonight,  
Even hearts estranged would turn once more to me,  
Recalling other days remorsefully;  
The eyes that chill me with arrested glance  
Would look upon me as of yore perchance,  
And soften in the old familiar way,  
For who could war with dumb, unconscious clay?  
So I might rest forgiven of all tonight.  
Oh friends, I pray tonight,  
Keep not your kisses for my dead, cold brow,  
Think gently of me—I am travel worn;  
My faltering feet are pierced with many a thorn.  
Forgive, oh hearts estranged! Forgive, I plead!  
When dreamless rest is mine I shall not need  
The tenderness for which I long tonight.”

Secretary—I would like to add a few words of commendation for the very interesting papers we have listened to this evening. They are all very fine.

Adjourned.

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Thursday Morning.

Secretary—Mr. President, I have received a letter from our old friend and co-worker, J. S. Harris, La Crescent, Minnesota, that I would like to read to you. It is as follows:

A. J. Philips, Secretary Wisconsin State Horticultural Society.

Dear Sir:—I had fully hoped to be present at this meeting of your society and had looked forward to it with much pleasure. It is with great reluctance that I relinquish the privilege and the pleasure. My age and the state of my health admonish me that it would be imprudent to risk the fatigue and exposure of making the trip to Madison in such extremely cold weather as we are having this week.

My first meeting with your society was as a delegate from the Minnesota society in 1874; at that time our membership was forty-five and yours about sixty. The meetings that winter were more than usually interesting. The previous winter (1872 and '73) had been terribly destructive to orchard trees and nursery stock, and over Wisconsin, Minnesota and northern Iowa apple trees had perished by the hundreds of thousands. It was a terrible blow to pomology in this region but not a death blow.

The men who attended and took part in those meetings were the pioneers and heroes of horticulture; they had enlisted for life and had nailed the flag to the mast. Their motto: "Fruit for ourselves; fruit for the millions who are soon to people these states; fruit to load our railroad cars and steamboats and send to other lands." They came together to compare notes and, if possible, learn the hidden mysteries that would lead to success. Among those whom I remember as being present at that meeting was the genial president, J. S. Stickney, the man for the time, and the right man in the right place to pour oil on the troubled waters and revive hope when hope was almost gone; the man to marshal the almost vanquished hosts of horticulture to make one more stand at the breach and conquer every enemy, or perish in their last ditch.

The venerable A. G. Tuttle was there too, and Dr. Hobbins, E. Wilcox, J. M. Smith, G. E. Morrow, J. C. Plumb, B. F. Adams, Geo. J. Kellogg, C. W. Greenman, Geo. P. Peffer, C. Walters, Chas. Hirschinger, B. S. Hoxie, A. N. Seymour, Benton Laurence, Mrs. D. Huntley and Mrs. H. M. Lewis. I think the boy, A. L. Hatch was there also, but you were not there. A number of these useful men and women have been called up higher and are waiting to welcome us when our work is done. It was to meet and enjoy a hand shake with those who still remain and the valiant newer recruits, that I desired so much to be with you. Since that time the interests of the two state societies have been very closely identical, and the relation between them very cordial.

A great many perplexities and discouragements have arisen and have been overcome. The membership of the two societies has continued to grow, but not in the ratio of the influence that is being exerted for good.

When we look over the field and note the progress made in twenty-one years, the increased quantity of fruit and vegetables that are being produced on our farms, the improvement of the surroundings of the farm homes, the growing taste for the good and beautiful, the improvement in methods, and the added comforts and luxuries that are the direct fruits of the work of this society, our sorrow for the departed ones is softened. We see the foot prints of Smith, Peffer, Wilcox, Greenman, Cook, Dr. Hobbins and Mrs. Lewis everywhere.

May our hearts be strong and our purpose firm to carry on the good work until there shall be no more sighing for fruit, but every one shall have enough and to spare.

John S. Harris,  
La Crescent, Minnesota.

R. J. Coe—I move that this letter be printed in our next volume, it is valuable as a piece of history.

Carried.

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## REPORTS OF DELEGATES TO AND FROM OTHER STATES.

Report of B. S. Hoxie, Evansville, Delegate to Iowa State Horticultural Society.

Mr. President:—The rule of this Society makes it the duty of a delegate attending the meeting of any society outside of



our own state to present a report giving some outline of the work on special prominent points as presented by the speakers or essayists. I received my appointment as delegate to attend the twenty-ninth meeting of the Iowa State Horticultural Society on the 14-16 days of Decemebr, but found out on the 11th that the meeting was to be convened on that day and I was more than three hundred miles away, but with close connections by railroads I reached Des Moines early on the morning of the 12th, in time to greet some old friends at the breakfast table, and fall in line for work. Owing to a conflict of opinion as to who had the best right to the rooms formerly occupied by the society in the Capitol, I found the meeting had convened in a hall so large that when the fine fruit exhibit was displayed at one end, and we in the other, there was yet space enough to hold an audience of four or five hundred people.

However, some people still persist in having their own way, if the heavens fall. In this case the fall most annoying was the footfalls on the floor, which was out of harmony to the subjects presented. I am happy though to report that the governor has tendered a fine suite of rooms in the first basement of the building which are now fitted up by the state, or state expense, at a cost of about \$1,000, where they will have ample room for their fine library, besides large audience rooms and rooms for committee meetings. To one who had to fight for a little corner in this building just to keep our books from destruction, I thought our sister state society could almost live in a palace with servants at their bidding. Owing to this disturbing element and some others, perhaps more of a personal nature, this meeting was not as harmonious or enthusiastic as on former occasions. I found a very long, but exceedingly interesting program which was gone through with, but there was scarcely any time for discussion, as from five to seven topics were laid out for each session, and the president gave a great sigh of relief when he laid down his gavel. I found that my notes would outrun the limit of a report, so I give here only some of the points, but by no means from all the speakers.

The reports of the directors of the several districts in the state gave a pretty clear status of the condition of fruit grow-

ing for the year 1894. Mr. Powell, of Glenwood, reported for the third district, which includes the famous Mills county, for apple orchards, and this gave from 35 to 40 per cent. of a crop. He mentioned one orchard of James Record as having produced 5,500 bushels of apples on thirty-five acres. This orchard was protected on the south, west and north by timber, which in this season of drouth and hot winds seemed to prevent the blasting of fruit which was experienced in other localities.

The early frosts in May affected small fruits so that in several localities of the state it hardly averaged one-half a crop. It was the general opinion that the apple orchard needed cultivation and fertilization if we expected good results.

Mr. Elder, of Concord, read a good paper on Small Freeholds, in which the importance of every man owning a home was the theme of the essayist. He stated that a farm of five or ten acres would support a family; such a farm would afford work at a profit both for young and old.

Mr. Reeves, of Waverly, thought, as he presented the subject of timber planting, that it should be considered as a means of climatic modification, and also as a protection for orchards, but not to cut off the circulation of air; and for this protection of orchards he would have the trees far enough away so as not to sap the soil of the orchard row.

The discussion of spraying apple trees for the codling moth showed a diversity of opinion, but it was pretty generally conceded that lack of success was mainly owing to the poor quality of the London purple used.

In plum culture it was the concensus of opinion that trees should never be planted in blocks of one variety alone, but different varieties together even to the intermingling of tops. Mr. Beryhill, of Des Moines, reported success with the Miner plum when planted intermixed with other varieties, such as Forest Garden, Wolf and De Soto.

Mr. R. P. Speer, of Cedar Falls, said we had too long a list of native plums; we should make a selection of only those best for canning and cooking. De Soto was mentioned as best for canning, while Wyant was by some considered best for dessert.

Mr. A. F. Coleman, of Corning, presented some interesting facts in a paper on Climatic Modifications of Fruits, drawing his lessons from fruit on exhibition at the world's fair. Quality in some varieties, and nearly the same latitude, was noticed in a marked degree in all standard varieties, and the preference was in favor of New York, Michigan, Wisconsin, southeastern Minnesota, Iowa and Illinois. It was the general opinion that Russian apples were not proving so satisfactory as some of the standards, as all, or nearly all, were early varieties and fair keepers.

Mr. Speer had been experimenting for a number of years in top grafting the apple, and said that our best apples may be grown successfully by top grafting them on hardy varieties. The question to be solved is, what stock is best for each variety. He found the Wealthy more hardy when worked on the Duchess than when root grafted, and Whitney is a promising stock for Jonathan.

He also stated that one of the new Russians, Repka Malenka, was very hardy and had proved a good stock for some of our best varieties in top working. Japan plums were very promising and much heavier bearers than the Russians.

Among our native plums, De Soto, Hawkeye and Miner were considered best, while the Kelsey was recommended for preserves, canning and evaporating.

Mr. W. M. Bomberger, of Harlan, in his paper on Marketing Grapes and Small Fruits, mentioned the quality of the soil as an important factor. The dry atmosphere and plenty of sunshine in our western climate gave us the finest flavor, and also the finest bloom; the quality of the grape was indicated by the bloom on the fruit. Thin skin was caused by a lack of clay in the soil. He considered ashes the best fertilizer for the vineyard, and if used in conjunction with slaughter house refuse, all the better. W. N. Hoops, of Muscatine, gave an interesting talk on Drouth, Its Effects and Remedy. Irrigation by drive wells was both practical and economical. With them it was found that three four-inch pipes would throw from 1,500 to 2,000 gallons of water per minute with an eight or ten horse power engine, and the cost was only about \$1.50 or \$2 per acre

after the plant was established. The difference was, in one case, of 240 bushels of sweet potatoes to the acre, while without irrigation it would have been a total failure.

His opinion was that once irrigating for small fruits and potatoes, at the right time, would be all that was necessary. With an outfit such as he described, three acres a day could be irrigated. A portable engine such as is used for threshing was used, and he considered something of this kind more practical than reservoirs. In other words, pump the water when wanted.

President W. M. Beardshaw, of Ames, gave a very excellent paper on "Laying Out and Planting School Grounds." His first point was to follow nature both in varieties and arrangement of planting; not in rows like so many hitching posts. There is a great amount of ignorance in planting trees, and more so in the care of them after being planted. In the German schools they give prizes for the best care of trees and plants, and teachers are examined in arboriculture as well as horticulture. We have not come to that yet in this country, but we can teach the children much about trees and plants by planting seeds in boxes and instructing them how to care for them.

Mr. G. B. Bracket, of Denmark, in his paper "Outcome of Our Trial Stations" (of which he is superintendent, and they have, I think, fifteen or sixteen in the state), gave some good pointers. He said that originally they had fine fruit in Iowa, but extreme low temperature in winter, and other causes, caused a failure in many varieties, and instead of seeking a remedy at home with native sorts we took Russian varieties, and now after a trial of nearly two decades, we have found nothing equal to the old sorts. Russian pears are no better, and poor bearers. Cherries are still in doubt. European plums have been a failure, and we are now trying Japan varieties on our native stocks with a better promise of success.

Prof. N. E. Hansen, of Ames, had, during the past season, spent some time traveling in the old country, and in his paper, Recent Advances in European Horticulture, gave some inter-

esting particulars about the work as he saw it conducted in the several schools of horticulture in eight different countries which he visited.

J. R. Sage, of Des Moines, director of the Iowa weather service, gave a very excellent paper on this topic: "Shelter Belts from the Standpoint of Lessened Evaporation." He emphatically denied the supposition that the climate of the west is undergoing any injurious modification, and this he maintained by facts from the record of many years' observation at the station.

There are, and have been years, when the pendulum swings to either point, and we call them seasons of drouth, or seasons of excessive moisture. So we need have no fears of being completely dried up, or flooded out.

Shelter belts and groves are valuable for protection against winds, and lessen the evaporation so far as this protection operates as against this force.

The display of apples on the tables was very fine and I was told, much better than at many previous meetings.

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Report of R. J. Coe, Ft. Atkinson, Delegate to Northern Illinois Horticultural Society.

Agreeable to appointment, on December 6th, I attended the meeting of the Northern Illinois Horticultural Society at Mar-engo. As I am expected to make something of a report of that meeting I will give briefly some of the impressions I received while in attendance. It seemed to me exceedingly unfortunate that the time of that meeting and the state meeting came so near together, because a good many felt that they could not attend both. As many preferred to attend the state meeting, the attendance at the Northern society was light.

The president, in his address, said that fruit growing is a profitable business but thinks more intelligence and better methods are needed; he thinks much more fruit could be profitably grown, and that every farm should have a good orchard. This brought several to their feet with the statement that ap-

ples could not be successfully grown on the prairie, but a paper read later by A. F. Moore, of Polo, dispelled that idea when he told how he grows apples by the car load on the open prairie; he plants on rather poor soil; wraps trees with building paper as soon as planted; sprays with London purple in the proportion of four ounces to fifty gallons water; beginning as soon as blossoms fall and keeps it up until fruit is half grown.

The discussion brought out the fact that northern Illinois had more apples than the southern portion, and it was generally thought that it was safer to plant in the north than in the south. Mr. Hartwell thought the apples of the future would be grown in northern Illinois. I think they are much more likely to be grown in Wisconsin, and perhaps in the northern part of the state at that.

During the discussion the question was asked: "Why did the first orchards planted do so much better than those planted later? The answer was that the first settlers, most of them, came from the east where they had always grown apples and they planted with lots of courage and hope and with a determination to have a good orchard, while much of the later planting has been done more for the name of it than for anything else, consequently it is very poorly done, and very little care is given after planting.

It was decided, in the discussion of tree fruits, that the Montmorency is the best cherry for northern Illinois. The Wolf plum is one of the best and there is no pear better, or safer, than Flemish Beauty.

Thursday, December 7th, was small fruit day, and the program was a little out of the usual order.

Instead of one paper treating of a single variety from planting to harvesting, the program was arranged as follows: The first paper treated of varieties, and was read by your delegate; the second paper was on Planting, by J. M. Wise, of Freeport, which was read by the secretary in the absence of Mr. Wise; third, Cultivating, this was assigned to Josiah Buffet, of Dixon, but was read by Mr. Powell; fourth, Protection and Pruning, by H. R. Cotta, of Freeport; fifth, Picking and Marketing, by C. U. Geeting, of Rock Falls. I think the arrange-

ment a desirable one and would like to see it tried in our Society; it would not only bring out some new ideas, but would give a chance for discussion on a little different line of thought than we usually have.

There was not so much discussion on the different topics as it seemed to me would be profitable.

The question box was well patronized and is, I think, a valuable feature of any meeting.

G. A. Barnett, one of the most prominent commission merchants of Chicago, read a paper on "The Commission Man as an Ally of the Fruit Grower," giving a description of their methods of handling fruit; he said one reason why the returns (on strawberries in particular), are so unsatisfactory is because the fruit arrives in such poor condition. He stated that not more than ten per cent. of the strawberries shipped to Chicago were consumed there but that the great bulk of them are re-shipped to surrounding towns, and in order to get good results they must have twenty-four hours of life left when they reach the Chicago house, that means firm varieties properly picked and carefully handled.

The day after the meeting I went to Belvidere. I rode around the country and tried to keep my eyes open. I did not see one farm with a good orchard on it, nor did I see a good small fruit garden. I saw a few new orchards that were planted last fall; each orchard contained one acre, and consisted of forty-nine apple trees; seven rows, and seven trees in a row; between these was planted one row of cherries, six trees; one row of plums, six trees, and three rows of peaches, eighteen trees, making eighty-five trees in all. I think the trees were sold by an Ohio firm; the price paid was fifty dollars. It occurs to me that this may partially answer the question asked: "Why the older orchards did better than the new ones."

Report of A. L. Hatch, Ithaca, Delegate to Northern Illinois Horticultural Society at Princeton.

Mr President:—I herewith submit my report as delegate to the meeting of the Northern Illinois Horticultural Society, held at Princeton, February 27, 28, 1894.

My visit to this meeting was at a cost of eight days' time to myself and fifteen dollars to the Society. Along the line of travel I noticed very few young apple trees in orchard, nearly all of the apple trees appeared to be upwards of twenty years old and in very poor condition. Many old orchard trees had been planted only twenty feet apart and are now very much crowded, are dying and apparently unfruitful. The extreme northern part of the state is more hilly and better adapted to the apple, in my opinion, than the rich, black prairie soil around Princeton.

The meeting at Princeton was remarkable for the number of extremely old men in attendance, of whom S. G. Minkler, Samuel Edwards, L. Woodward and Elmer Baldwin were the most aged, the latter being eighty-eight years old; he said he had eaten no meat for sixty years, his diet being cereals, vegetables and fruit; he is wonderfully well preserved in health and vigor. He told me of a cotton wood tree that he cut in 1878 when the tree was four feet in diameter and forty years old; it stood near a well which was sixteen feet deep, with usually three and one-half feet of water, from which he ordinarily took ten barrels of water daily. The weather being very dry in August, and the well failing of its usual supply, he thought the tree was taking water from the well, so he cut it and the water ran from the stump in a stream, and continued to discharge water for three days at an estimated rate of ten barrels daily; after this the well yielded its usual supply.

Mr. Baldwin grows asparagus for market and has some which has been uncultivated for thirty years that is still yielding good crops; he considers salt injurious to asparagus. In apple root grafts, he reported that he had tried the so-called whole roots and piece roots and could see no difference in results.

Samuel Edwards, of Mendota, planted, several years ago,



twenty varieties of currants, of all kinds, he considers the Victoria the best.

C. Anschick, Ottawa, read an excellent paper on Marketing Garden Products. He grows asparagus for market and likes the Palmetto the best. Mr. Hartwell, of Dixon, spoke highly of this variety.

S. G. Minkler introduced the Minkler apple fifteen years ago. The original tree is standing and is fifty years old; the apple is reported excellent. Of fifteen varieties of raspberries raised by him, he spoke highly of Palmer as an early berry, vigorous bush and heavy cropper; Pioneer nice; Ohio valuable, between Palmer and Gregg; Gregg is largest; Shaffer not good but highly spoken of for canning and jam; President Augustine, of Normal, said, "at first the market did not like it, but when its value was learned there had been a steadily increasing demand for it" Mr. Minkler spoke of Golden Queen as valuable. Secretary Hartwell has an acre or more of it and thinks very highly of it. Gladstone Everbearing bears an old and a new wood; had berries when frost came; the fruit is dry and insipid. The Kansas was highly commended, especially by President Augustine, of the state society, as the coming black-cap. Souhegan does not do well on account of fungus blight. Nemaha was also spoken of as not good.

Blackberries and raspberries are not given winter protection; the old bush is usually left until winter or spring before removing and is considered a good support for the new canes. Removing the old bush while the ground is frozen was advocated as it was claimed that it would then break off closely without disturbing the roots of the standing bush. Mr. Hartwell advocated a knife for this purpose, made less like a hook than is usual to avoid pulling up the bush; one edge is made sharp.

The end of the shank is made of one-half inch gas pipe. President Augustine recommended the addition of a chisel edge by means of which the operator would be enabled to make a pushing cut when desired. The favorite blackberry seemed to be Snyder. The Briton is not liked much, I suspect because the bushes grown are not true to name, at least I saw some at Mr. Hartwell's that were mixed.

The three grapes most highly spoken of were Concord, Worden and Moore's Early. Niagara and Pochlington are well liked. Mr. Hartwell reported twenty-five dollars from one of his vines of the Pocklington in 1893. Nothing was said about strawberry culture, particularly. Apple culture and spraying were discussed by your delegate and much interest was awakened.

J. V. Cotta, Nursery, was elected president, and Justin L. Hartwell, Dixon, was re-elected secretary.

C. Anschick, Ottawa, is engaged in market gardening. L. Woodward, Marengo, treasurer of the society, is engaged in the pickle business, now having 25,000,000 bushels on hand.

Mrs. Hartwell is much interested in fruit culture and would, I believe, give an excellent paper on that topic from her standpoint.

Arthur Bryant, Jr., made an excellent report of trial stations, he has one and J. V. Cotta, one; there are three in the district, nine in the state. The one which Mr. Cotta has charge of is of interest to the southwestern part of Wisconsin, and I think it would be a good plan for our Society to learn of its work and co-operate with it for mutual benefit.

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A. F. Coleman, Delegate from Iowa State Horticultural Society.

I have been very much pleased with the interest you seem to take in your meetings. I think you have an unusual amount of talent here among your growers of small fruits. Of course I do not want to say anything against my own society, but I shall tell the people of Iowa when I go back that unless they bestir themselves Wisconsin will take all of the laurels in the small fruit growing. I do not think any man, even in western Iowa, can raise good fruit by seeding down the orchard and then turning in the stock. If we raise apples we must cultivate and take care of them.

I shall endeavor to write a good report of your meeting for our society at its convention next winter, and I hope many of you will be present to hear it. I assure you we will give you a cordial welcome.

H. R. Cotta—I think the ground has been pretty well cov-

ered by reports of delegates from your society to ours. I will say that fruit growing has not been successful because men treat apple trees as they would fenceposts. I think if they would take care of their trees they would be more successful than you are in Wisconsin. I think, judging by the specimens on your tables, that our fruit is higher colored than yours, it is because we have longer seasons.

We had frost the sixth of June that destroyed the blackberry crop all over our state. My Briton that was not much injured by the frost brought me \$400 per acre in spite of the drouth.

Elmer Reeves, Waverly, Iowa—I wish to thank the members who have contributed so much to my enjoyment by their papers and discussion. I have enjoyed these meetings very much. It appears from the interest manifested at this meeting that you have more small fruit growers than we have. The main object seems to be, with our growers, the dollars, and if they can grow in a slip-shop way and get the returns, they seem content even if they do not cultivate the best varieties.

I wish to commend the very fine report of our meeting which was given by Mr. Hoxie. While we cannot commend the Russian apple as a rule, we can say they are of great value and we think we can cross them with other sorts and get valuable apples for our locality. It is the opinion of many in Iowa, and it is Prof. Budd's opinion, that the value of the Japan plum will be in crossing on our native varieties. We consider the De Soto and Wilde as the most valuable. For myself, I grow a great many varieties, but for the general grower, I recommend those two. We had some De Soto plums at our state fair that were nearly as large as a Whitney crab. I find that it varies on different stock and I think we should be very careful about what stock is used in grafting. Two years ago a man at Cedar Falls gathered a large quantity of Lake Forest plums and sowed the seed; he grafted on the roots the De Soto, there was a great difference in the plums on account of the stock. Another man planted De Soto pits and grafted them, they are true De Soto's, but they varied on account of stock. While they were all De Soto seed, he failed to get good fruit on all because of the difference in stock. It is my

opinion that the plum is affected more by the stock on which it is grafted than any other fruit we grow. Some varieties will fruit fairly well standing alone, but the majority will do better standing in groups. The Wilde plum is a very valuable variety, it is fully as large as De Soto; it is, in addition to its other good qualities, a free stone, and that makes it very desirable for the table.

Q.—Mr. Reeves, what would the results be if they were grafted on peach stock?

A.—I would not hardly like to recommend it for our locality; one objection would be the sprouting up from the roots.

B. S. Hoxie—I think we ought to have the history of the De Soto plum written up for our volume; it was originated in Wisconsin, in Crawford county, by Dr. Porter, who promised to write it up.

One cause of failure of small fruits in Iowa, I found to be because they winter kill; it results from lack of winter protection, they seem to think it is a great deal of work to cover up their bushes.

J. D. Searles—Mr. Reeves, is it advisable to take large roots, or small ones, for grafting?

Elmer Reeves—I advertise in my local paper that I want good plum seed and the children come with seeds from the plums their mothers have canned; they take out the pits before canning. I only take pits from the very best and the early plums. I plant them and graft on roots of one year's growth.

C. E. Tobey—We grow the De Soto and the Cheeny and we find that the De Soto grows much better than the Cheeny. I want to ask if the De Soto does not do better with some other variety as a pollenizer?

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#### REPORT OF COMMITTEE ON NOMENCLATURE.

R. J. Coe, Chairman—There are two distinct varieties of blackberries known and grown in Wisconsin as Ancient Briton, or Briton. This is quite unfortunate as well as very

misleading. The berry grown in and around Ripon is a late variety; the one grown in the vicinity of Baraboo is an early variety. The fact of these two varieties, one early and the other late, being called by the same name is at once confusing and misleading; it is very unfortunate.

Therefore, your committee would recommend that the variety of blackberry grown in the vicinity of Baraboo be known as the Badger.

Adopted as recommended.

J. S. Stickney—I got, as I stated yesterday, what I supposed was the entire stock from Robert Hassell for \$200; he was not a horticulturist. I think the berry resembles the Snyder more than any other, but it has been pronounced by very good judges as not the Snyder. I like the name of Badger and I think it is nice for this society to give it the name.

A. L. Collman—I think it is a seedling of the other, and I think you took a wise step in calling it the Badger.

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#### A BEGINNER'S EXPERIENCE IN GROWING SMALL FRUIT.

Fred. A. Harden, Weyauwega.

In the year 1889, I saw an article in a paper on Strawberries, by J. M. Smith, telling how to grow and the profits derived from the same.

It set me to thinking and the result was, that in the spring of 1889, I set one-fourth acre strawberries of the Wilson and Crescent varieties, a few Jessie and Sharpless, also two hundred raspberries, mostly Cuthbert and Marlboro. They all grew nicely and in the fall had a fine stand.

We mulched all the strawberries, that fall, with horse manure, we did not remove it in the spring and they came out looking splendidly, grew rapidly and made a heavy set.

I had a number of visitors that spring, and they never failed to ask the question, "What are you going to do with so many

berries?" I did not know myself, but I always made answer, I'm going to sell them, so before the berries began to ripen I commenced to look up a market, and I found ready sale for all my berries.

This wonderful strawberry bed yielded me over 1,000 quarts, for which I received \$100, besides all we used at home, which was no small amount.

The Wilson and Crescent were the varieties that gave me the most berries. The Jessie was large, but not productive enough to pay one to set them for market.

The Sharpless would ripen on one side, and be green on the other side, and they were of all shapes and sizes. I never set another Sharpless plant and I still cling to Wilson and Crescent, as the standard berry, but have added the Warfield and Michel, as the market demanded it.

The Cuthbert raspberry, with me, is more profitable than the Marlboro. The Cuthbert is a larger bush, has larger berries, and better in quality, but it is a week or ten days later; while the Marlboro is a small bush with small berries and when you pick them, they crumble so that it gives them a poor appearance.

For some reason blackberries don't do well with me, therefore I receive very little benefit from them.

Each year since I have increased my berry patch, I have never been at a loss to sell all the berries I could raise, but if I had started in on a larger scale I am sure I would have made a complete failure. By commencing with a small lot, I learned step by step what was required to carry on a successful fruit business. That is—always put in good, first class berries enough to fill a box, which must hold a full quart, have as good berries in the middle and bottom as on the top. Soft and small berries should be sorted out. Always pick when vines are dry, and every day. If they are to be shipped, get them on the first express train that leaves your place.

Do not send to commission men if you can sell them without.

The past season berries were scarce, therefore commanded good prices.

We had more orders than we could fill, some days from fifty to one hundred cases more than we had.

The soil on which my berries are set is a sandy and clay loam, it is good corn and potato land.

We set strawberry plants with a spade, a man carries the spade and makes the holes and a boy drops them.

I set three and one-half feet wide and two feet in the row.

Cultivate once a week all summer and hoe when it is necessary; let all the runners grow but do not let any fruit set the first season.

I do not want you to think that every thing has been all sunshine, but still to keep truth and honor on our side, I must say, we have had more sunshine than we wished for part of the time.

On an average, every other year has been a dry one or a very bad one for me.

In the 1891, from over an acre of strawberries, we had only about 500 quarts, and those of a poor quality.

The drouth commenced in April and continued sixty-four days. Did they pay expenses? Hardly. In 1894 we had another dry season and barely paid expenses.

So you will find as I have found that there is as much disappointment as there is pleasure and profit in most any vocation.

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#### DISCUSSION.

C. E. Tobey—You speak of the Marlboro being a small berry. I want to ask if any one else can speak of them in that way?

J. D. Searles—I can get large berries or small ones, just as I manage them.

C. E. Tobey—I would like to hear from Mr. Hanchett on this question. What is your soil, Mr. Harden?

A.—It is a strong clay loam.

F. W. Case—I grow the Marlboro on dry, sandy land and it's the biggest berry I grow.

President—It is the general statement through Wisconsin that it is the biggest and best berry grown.

M. Pierce—You will find, gentlemen, that the soil has much to do with it.

Geo. J. Kellogg—With my first planting of the Marlboro I found it small, and I plowed it up, but after hearing so much about it from the big growers in this state, I tried it again and my experience is about the same as Mr. Harden's and I have neither sand nor clay soil.

E. J. Schofield—My experience is the same as that of Mr. Kellogg and Mr. Harden; on my soil the Cuthbert will discount it every time.

Fred Hanchett—We lost lots of money on the Marlboro; we lost it by not increasing our plantation by planting out Cuthbert and Turner. We tried the Marlboro on all kinds of soil.

J. D. Searles—When you meet in Sparta, as I hope you will some time, we will be able to show you that the Marlboro is the biggest and best berry grown.

M. A. Thayer—The question of plant distribution I have considered, for a number of years, to be the greatest thing for the advancement of this society. I have been informed that there are gentlemen here who are trying to discourage that distribution. I am anxious to have the committee who has that matter in charge, report favorably on it. I wish the society would do as I recommended last year, let other growers contribute.

The Thayer fruit farm will donate ten, fifteen or twenty thousand plants if other growers will donate. Let them be placed in the hands of Mr. Herbst, our corresponding secretary, to be sent out. I believe if this society votes to discontinue the distribution it will take a back step.

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## HORTICULTURE IS PROGRESSING.

D. E. Bingham, Ithaca.

True progress is shown by better results.

There is no doubt but that there are now in existence better



varieties of fruits than ever before known, while we still have as many of the old kinds as we choose to retain. In the matter of cultivation and management the selection of suitable sites and soils, we have the accumulated experience of all those who have gone before. And yet a great deal of what has been published as experience and advice is more or less puzzling to the amateur fruit grower. Let us consider some of it and see if it does not seem to be more like individual notions and hobbies than true progress.

Let us go to the strawberry bed. Some say, "keep off all runners from newly set plants until July 20th or August 1st, after which date all runners are let grow so that all new plants are grown for the next year's crop of fruit after those dates." Others say, "let all first runners grow." On the first plan I would be puzzled to know how to get a good bed of plants where the latter part of the season is very dry, as has been the case for the last two years; and if we should have a favorable season for late growth it is a question if many such plants would not be too immature to ripen their fruit buds, and too weak rooted to grow their fruit well the following season. On the other plan, allowing all first runners to grow, I am not sure but that, in a favorable season, the plants would be so thick when the growing season was over that they would crowd each other and less fruit would be the result.

Some say, "leave winter mulching on to keep berries clean and weeds from growing." No fertilizing or cultivating is done until after fruiting. In case of a cold, wet spring, there is a loss or damage of fruit by the retained mulching. So while we are progressing in strawberry culture we are not quite sure which way we are going, whether it is up hill or down.

Now let us go to the blackberry patch and see if we fare any better. It is generally advocated to pinch back the young sprouts to increase fruiting surface and to make the bushes self-supporting. The question arises, can we grow the same amount of fruit on three bushes pinched back, that we can on five grown on nature's plan? It is considered more difficult to protect stocky branched canes than those not branched.

When bushes are protected, wire supports are always used, and I am sure I would rather handle and wire up five slim, unpinched canes than three pinched, stocky ones. Horticulture is progressing somewhere along these lines of practice, but which is the best one, I will leave for the experimental station to work out.

As I haven't time to dwell any longer on blackberries, let us plant a tree. Here is a lately published plan. "The great secret is to guard against leaving air spaces in the soil around the roots; pound the dirt down tightly, pounding as hard as you would to set a post. When filled nearly level, pour in one or two pails of water, then finish filling, but do not pound as hard as before." Here we might pause and note the rate that horticulture must be progressing where such practice prevails. I might state, however, that this is not the advice of one of our Wisconsin horticulturists.

Before we leave the tree we are told to tip it over to the southwest about forty-five degrees, and if exposed to a southwest wind, tip it more, perhaps fifty or sixty degrees. I should think an orchard planted like that would look tired, and as if it wanted to lie down and rest. But we are told that by the time the trees begin to bear they will be standing up straight or leaning the other way.

There is another thing about planting trees that shows how horticulture is progressing. Two or three years ago, Mr. A. D. Barnes advocated the planting of a white cedar to the south of each apple tree to protect it from sunscald. Last spring at the closing farmers' institute, he seems to have progressed so far as to leave his white cedar and take cedar slabs, which he nails to the southwest side of each tree, with two six-penny wire nails. This must be done when the tree gets large enough to attract the rays of the sun. At what particular size and age this attraction begins, I can hardly guess. I am glad that the exact kind of nails to use was stated, though we would be at a loss to know what to do if the slab was too thick for the nails to reach through.

I suppose we ought to be thankful to find out that borers don't work in the shade, and perhaps we should be glad to

know that lath tree protectors scare the beetle away so that they won't get to the tree to do their injurious work. Such positive assertions as are made in regard to the merits of tree protectors must show that horticulture is progressing.

Still I am puzzled to find what looks like sunscald on twigs of a single summer's growth before they have been exposed to the winter sun, which, it is claimed, sours the sap and produces that bad look on the southwest side of trees. And yet some good apple growers of this state say, with a splendid show of reason, that the so-called sunscald is evidence of neglect and does not occur on trees in good shape. In my opinion sunscald is the result of neglect. Perhaps you all remember the old disease of cattle called "hollow horn," we might say that it resulted from a hollow stomach, and so with sunscald, it results from sheer neglect, for I have never noticed it on trees in good condition.

This sunscald scare is a popular fad just now among nurserymen, and some very absurd notions about it seem to get into print.

One of those notions is of planting so one tree will shade another. Mr. Barnes advises planting in broken rows fourteen feet north and south, by twenty-one east and west. This quincunx planting is an old notion that possesses no merit that I can discover, and certainly not that of protection from sunscald, for examination shows that the amount of shade that one apple tree can give another can have no more effect on sunscald than a fog horn on the weather.

Now we are ready to progress to the next phase of this subject which is close planting. From the earliest recommendations of this society to the present, I find that twenty feet each way is recommended for apple trees. This is at the rate of one hundred and eight per acre; this gives each tree four hundred square feet of room. Mr. Barnes' plan reduces this to two hundred and ninety-six square feet per tree, or one hundred and forty-eight per acre. When he puts in his cedar by each tree he has only one hundred and forty-seven square feet for each tree and two hundred and ninety-six trees to the acre.

I have observed for several years, the difference in quality of fruit grown on trees crowded for room, and those standing alone, or having all the room a tree requires. The per cent. of marketable fruit was much larger on trees having room enough, than on those that were crowded. I think it is much better to pick five barrels of good, marketable apples from a tree than three barrels of poor apples, unfit for market.

In my opinion thirty feet is near enough to plant apple trees, especially for those wide-spreading varieties. If planted thirty feet apart each tree would have nine hundred square feet. This would be forty-eight trees per acre, or about one-sixth as many as Mr. Barnes recommends.

If there is any true progress in sunscald notions, tree protectors, close planting, etc., I have failed to discover it, and I patiently wait to be enlightened by your superior wisdom.

There is that old notion about some one's uncle down in Ohio who took a bud from a sour apple tree and another from a sweet apple tree, and split them, joining the sour to the sweet, and grew an apple, one side sweet and one side sour. This story is always so earnestly told and I have heard it so often that I feel sure it must be true. Of course, it could not happen in Wisconsin for our blossom buds will persist in producing a cluster of flowers. That would make it as difficult to perform this miracle as it would to split two eggs and produce a cross between a Shanghai and a Leghorn.

Then there is that old lady who knew how to grow plums. She lived down in Ohio, too. Her plan was to pound the bark off the tree next to the ground so the gum would not go up the tree and form on the fruit.

But notwithstanding all such notions and hobbies, horticulture has made great progress in some ways. It has progressed from the codling moth trap and bands to the Nixon spray pump, though I am not prepared to say that even the spray pump must necessarily exclude those old ways of protecting fruit trees from moths.

In passing by old orchards we notice that some trees are doing better than others; this is evidence of progress, for we can by this difference, decide what varieties are worthy of propagation.

This choosing by nature "the survival of the fittest," although sometimes rather severe, will enable us to make true progress if we heed the lessons so generously given by the pioneers of horticulture.

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### A GREENHOUSE FOR FARMERS AND FRUIT GROWERS.

Frederick Cranefield, Madison.

It is not my opinion that every farmer and fruit grower in Wisconsin should build a greenhouse; but that many of them could build one and make it a profitable investment. The name greenhouse suggests to many people an elegant and expensive structure with brick walls and iron-frame roof, with an elaborate system of steam heating, and stocked with choice flowering and ornamental plants. The greenhouse that I propose to build for you is to be built on an entirely different plan. The brick walls and steam heating plant will be conspicuous by their absence, and instead of palms and tea roses you will grow lettuce and tomatoes. Fresh vegetables in winter are an expensive luxury, but at present the demand for them greatly exceeds the supply. We, who are growers, should investigate. The first thing to be considered by one interested in the subject, is the market. In this connection it is well to remember that there are other means of locomotion than horses, and that it is not necessary to be within an hour's drive of the city, but if you are located within five or six hours, by rail, of a city of any considerable size, it will pay to consider this matter. Regarding the cost, Peter Henderson and other greenhouse men, when giving estimates of the cost of greenhouses, say that houses of average width, complete, with heating apparatus, will cost from twelve to fourteen dollars per linear foot. According to this estimate, a house ten by fifty feet would cost \$600. I will give you an estimate for a house, suitable for forcing vegetables for winter market, that will cost less than \$200, complete with heating apparatus and work room. I do not wish to be understood in this, as ad-

vancing any new plan or theory, but only to give a few suggestions that may be of value to you. I also wish to remind you that not only are lumber and other necessary materials cheaper now than when Peter Henderson wrote his estimate, but also that there are now several large firms engaged exclusively in the manufacture of greenhouse building material. The result is that at the present time, the entire wood work complete, cut to lengths and fitted ready to set up, may be bought for less than the price of the rough lumber ten years ago. Regarding location, select a level spot of ground near water, either well or stream. The house designed is even span or gable roof and therefore should extend north and south, the walls should be three feet high, and are constructed by setting six-foot cedar posts three feet in the ground and four feet apart in line. Saw the tops to the same level as the pitch of the roof, the ridge of which should be three feet above the wall plate. For a plate, use two by eight best quality pine, dressed on two sides; square and split the ends with a saw to the depth of one and one-fourth inches. Into this groove drive a piece of band iron two by one-eighth inches. This will serve as a tennon and when the plank are driven together, will form a continuous line with water-tight joints, also prevent warping, even if the joints do not come directly over the posts. Spike the plank to the top of the posts. For walls, cover with rough lumber, then building paper (not tarred), then drop-siding. This makes a good wall, but if you wish to be doubly secure, board up on inside the posts with common lumber. Now, that the walls are completed, and before building the roof, for convenience, build the benches and construct the heating apparatus. The width of the house, ten feet, may be divided as follows: A bench four feet wide on each side (and six inches below the wall plate), which leaves two feet in the middle of the house. The benches may be constructed of rough lumber, or fencing, and should be supported every four feet with two by four pine or oak posts, front and back. Under no circumstances nail the benches to the walls, as it would cause the roof to settle. Leave spaces of one-fourth of an inch between the boards of the bench bottom for drain-

age. Regarding the heating, three systems of heating are in common use, namely, steam, hot water and smoke-flue. If economy of fuel alone is to be considered, steam is preferable to hot water, and that to flues; but for a small place, and especially where capital is an important factor, the smoke-flue is the system to be adopted. To heat a greenhouse, of the size mentioned, by hot water, would cost \$140; a system of flues that will give good satisfaction may be built for \$40. Dig a furnace pit at the north end two and one-half by six feet, and three feet deep; the furnace should be arched with fire brick and be thirty inches in height. Place the grate bars, which should be thirty inches in length, twenty inches from the top of the arch, at the center. Furnace doors will need to be fourteen by fourteen inches. Beginning at the furnace, construct a brick flue under the east bench, with inside measure of eight inches; curving at the south end, return under the west bench and enter a chimney, which should be constructed on the top of the furnace; in these last six words lie the secret of success with smoke flues. A common method is to terminate the flue in a chimney at the end opposite the furnace. By this method the draft is usually very imperfect, and smoke and gas, two very undesirable elements in a greenhouse, are usually present. By the former method, as soon as the fire is started, the chimney, which rests upon the brick arch of the furnace, is heated and the cold air driven upward, causing a draft which immediately sets the flue in action. This idea was first introduced by Peter Henderson many years ago, and personal experience with both kinds has convinced me of the excellence of Henderson's method.

The flues should be supported on bricks, if possible, the entire length. In no case should wood come in contact with the bricks at any point. The walls, benches and flues constructed, there still remains the roof. In this particular, I beg leave to differ with many educators in this line, who advise the use of common three by six hot-bed sash on heavy rafters. I believe it to be cheaper and more satisfactory to construct the regulation greenhouse roof, with sash bars and lapped glass.

It will be impossible for me, in this paper, to give all the de-

tails of roof construction. They can be best learned by a personal inspection of some greenhouse. A few points only may be mentioned. Large sized glass is preferable to small. A good size is fourteen by twenty. Have the sash bars cut in a way that will allow of the glass being "bedded", that is, the glass resting on a bed of putty, with no putty outside. Use small one-half inch nails instead of glazing points. Have abundant provision for ventilation, which is provided by "windows," which extend from the ridge down the roof, at least two and one-half feet and are usually hinged at the ridge. For a house of this size, heavy rafters will not be necessary. Use instead, sash bars one and one-eighth by one and one-half inches which may be purchased, grooved for glass, and cut to any desired length for about ten dollars per 1,000 linear feet. A shed ten by ten, which may be of rough lumber, should be built at the north end. This will serve for furnace shed, work room and store room. The cost of the material for this structure, taking the prices of Madison dealers, is as follows:

Lumber, building paper, sash bars, etc.....	\$ 45 20
Flues, grate bars and furnace door.....	30 50
Bricklayer, two days.....	7 00
Furnace room .....	10 00
Hardware .....	10 00
Putty .....	5 00
Cistern (material) .....	10 00
	<hr/>
	\$117 70
Labor .....	40 00
	<hr/>
	\$157 70

In this house are 400 feet of bench room, on which may be grown, during the year, three crops of lettuce (1,200 plants), and a crop of cucumbers (50 dozen.)

These two crops are the ones principally grown by market gardeners near large cities, but it is quite possible to grow other crops that might prove equally valuable, according to location and demand. Room may also be found for starting many hundreds of vegetable plants, such as cabbage, tomato and prize-taker onions.



J. D. Searles—Mr. Cranefield, what protection do you give the roof?

A.—You do not want protection except in the summer, and whitewash is sufficient for that. You must not put putty on top of the glass because exposure to the weather would soon take it off. The most progressive greenhouse men are using what they call a putty bulb.

Adjourned.

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Thursday Afternoon.

Geo. McKerrow—I feel somewhat honored to be elected superintendent of the horticultural department of the state fair, and I come before you this afternoon to plead with you to make an exhibit worthy of Wisconsin, and that you will make an especial effort to make the coming fair one long to be remembered for the quality of its exhibit, and I ask you as horticulturists, to show your good will by your interest. Our Society is not in as good condition financially as we wish it was, so I cannot promise that we can furnish you any more money for your premium list.

Not being a horticulturist in the strict sense of the word, I ask you to select an assistant to help me at the fair. It seems to me I could get no better pointer from the Society itself than from its selection of officers, and it seems to me fitting that you should select the one whom you have honored by placing him at the head, the president.

President—I hardly know what to say to this honor that has been so unexpectedly conferred upon me. Although I did not expect it I will endeavor to do the best that I can to serve you in that capacity.

Geo. J. Kellogg—I move that a committee of three be appointed to revise the premium list. Carried.

Wm. Toole—I move that committee be composed of the president for chairman, and the other two members be chosen by the president and secretary. Carried.

N. H. Robinson—I wish to invite this Society to hold its summer meeting at Grand Rapids.

B. S. Hoxie—I move that a vote of thanks be extended to the Grand Rapids people and that the location of the summer meeting be referred to the executive committee. Carried.

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### CROSS FERTILIZATION OF PLANTS.

A. F. Collman, Corning, Iowa.

Mr. President:—It is now understood, that the forms and groups of plants have been largely determined and handed down through the ages by the survival of the fittest. We have been taught that this is nature's plan to propagate the species, in the animal as well as in the vegetable kingdom, and we have been drifting for two thousand years, hither and thither, as it were, in search of knowledge, not alone in horticulture, but in all sciences. You and I see the glory and power in electricity, but we do not understand it. Mr. Edison says of it: "We have something but we don't know what it is." So in horticulture we have made wonderful progress in two thousand years, but we are still in the alphabet.

We know by budding and grafting we can propagate the same species for ages, the stock may effect the scion, or climate modify the fruit, but the form and general characteristics of the fruit never change.

I am not here to condemn progression, and life is too short, and time too valuable, to brood over disappointment or somebody's failure. I do not believe very much in planting seedlings with a view to improve the fruit, and yet it may be done. We know that in and in breeding tends to lower the vitality of the species, and the husbandman who permits it is behind the age.

We may plant apple seeds and grow trees that will produce apples that contain seeds that we may plant to grow more trees to produce more fruit, and continue the process for ages,

and the chances are that each generation will degenerate, and be less desirable, for we are following the system of in and in breeding, which is contrary to the teachings of the Bible, and educated circles in all nations. We know that scientific men are doing wonderful work in the animal kingdom. Compare the well formed, short-horn of today with one that ranked equally with one fifty years ago, or the model dairy cow of today with one fifty years ago, or the model porker of today with the prairie rooter of the last century. Mark the progress of civilization in the last century, and then talk about the good old days of our fathers.

What has been done in the animal kingdom can be done in the vegetable kingdom. Time will not permit me to go into detail, so we will consider the apple, and the same principle will prove true in all plant life.

For the sake of argument, we will take the Duchess as the standard of hardiness. We know the fruit for culinary purposes ranks very high; the tree for hardiness is a model, its roots extend deep into the earth after moisture, and its leaf is perfect. In the Duchess we find about as many good qualities as in any one of our hardy varieties, but we believe the fruit of the Duchess can be improved by crossing it with some of our American apples of high quality, and the hardiness of the tree maintained. We have plenty of good summer and fall apples, so we should turn our attention to the production of winter apples of good quality and hardiness of tree.

We all have our hobbies. What I might suggest might not suit you, so let us all try, and somebody will produce the apple for the million. Allow me to suggest a line of work. I would take the Veronist Rosa, a tree fully as hardy as the Duchess in tree and about as good a bearer, and the fruit of good size, color and quality, and cross it with the Jonathan, Grimes-Golden, Minkler and others. You may not make a success, and you may produce an apple about as good as our Jonathan in quality and color and larger in size, and a great improvement in the hardiness of the tree.

The want of definite information as to hybrid or cross bred offspring of plants is very great. As we trust the hybridist,

we must insist on his being a trustworthy and skillful operator before we place confidence in his records. For example, the flowers must be carefully emasculated before there is a shadow of a chance that pollen can have escaped from the anthers. The female flower must then be carefully covered with a paper sack, and in about twenty-four hours, the pollen of the intended male parent (after having been prepared) must be applied with a clean camel's hair pencil, and the sack carefully replaced and carefully fastened with fine wire to prevent insects from entering the sack.

To prepare the pollen, just before the flower opens, extract the anthers and place them in a sealed envelope and allow it to ripen in a warm room, from twenty-four to thirty-six hours, the pollen may be kept several days or even weeks. In about two weeks the sacks may be removed and covered with sacks made of netting to protect the apple.

Plant the seeds produced by the cross, and you may have a new variety that may be valuable. A scion from the young tree may be cut and top-worked into a good, healthy bearing tree, and it will take only about four years to see the result.

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#### DISCUSSION.

A. F. Collman—The reason why I would take the Veronist Rosa is because it is good in color and almost as hardy as the Duchess. I believe that with it we could produce a valuable cross that would be something desirable. I could easily show any young man how he could do the work. I use these little forceps, that you can procure at any drug store, and remove the organs. I crossed 4,000 blossoms last spring. If your sacks are clean, strong paper you can leave them on. Some of my sacks had two and some of them three apples in them.

Prof. Goff—What time of the day did you do the work?

A.—In the morning before the insects are flying.

Prof. Goff—What per cent. do you receive fruit from?

A.—Forty per cent.

B. S. Hoxie—Isn't that a large per cent?

A.—Well, no, when you consider that we remove all the small, weak blossoms.

Prof. Goff—Do you not think it desirable to leave the sack on to preserve the fruit?

A.—I do, then you are careful to label the tree so as not to lose it.

Prof. Goff—This is a very important question. Mr. Collman thinks it is not worth while to raise seedlings. I will admit that with some fruits it would not be profitable, but with the apple it is different. A variety that has once been crossed will vary to show that crossing for many generations; with tomatoes I have found it to be surprisingly true that we will continue to get variations. I planted the seed of scarlet tomato, I found in two generations that the fruit was all scarlet, but in the third generation there was the yellow tomato, it was the first time the yellow had appeared. Variations will continue through several generations. Suppose we plant the seed of the Duchess apple, if that has been crossed, we will get variations; the probability is that a majority of the seedlings will imitate the parent. This was shown in Mr. Freeborn's experiments. I think it is an excellent thing to take time to grow seedlings. If we have the patience to wait, crosses are all right.

A. F. Collman—I agree with Prof. Goff exactly. I know many would not have the patience to make crosses; it must be done at a time when one is apt to be very busy, but it pays sometimes to take pains. I also think it is a good plan to plant seedlings, but still I think it will pay the careful experimenter to make crosses. When I settled in Iowa in 1872, I went into the nursery business. I located on the prairie, two miles away from any trees, and had quite a number of seedlings. I went to work with the boys and plowed a trench and planted the seedlings, thinking I could use them for whips any way; not more than one-fourth of them proved to be hardy enough for our section. Some recommend us to experiment on the wild crab, but that would be going back just thirty years, and I believe in going forward.

Elmer Reeves—Prof. Goff, suppose you have a Duchess standing this year where it was cross fertilized, and suppose it was removed in the next five years, would it then show the influence of that cross fertilization?

Prof. Goff—No. I mean that one particular seed would show varieties for years.

Geo. J. Kellogg—I apprehend that a Talman Sweet standing forty rods from any other tree, if its seeds were planted, would continue to produce apples like the Talman Sweet. How is that?

A. L. Collman—I have heard people say that bees would carry pollen on their wings four miles, if so, I think you would stand a chance of getting a different variety.

M. Pierce—Mr. Gideon has two apples that are better than the Wealthy. They are the Peter and the Gideon; both hybrids, both nice, red apples. The trees sell for one dollar apiece. I believe we have something that is fine.

Elmer Reeves—The Peter is one of Mr. Gideon's most valuable seedlings; the tree resembles the Wealthy, but it is a better tree. It has been distributed considerably over Wisconsin, Minnesota and Iowa. Although the stock is rather limited at present, it is not necessary to pay one dollar apiece for the trees.

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#### A FEW IDEAS AND OBSERVATIONS OF MY OWN CONCERNING APPLES AND APPLE CULTURE.

W. E. Thrall, Omro.

Twenty years ago I had a nice orchard of large, bearing trees of very good fall and winter apples; today but one of the old family orchard trees remains and that one has never yet failed to fruit. Its fruit is small and very sour, and is only good for cooking purposes.

It has never been pruned or mulched but stands near the barnyard where no grass grows. The only cultivation or care

which it received has been given by the hens, as it is a favorite place for them to scratch and wallow, while its dense foliage affords a grateful shade.

The rest of the orchard was seeded and the ground elevated to some extent around each tree and received much better care, but the trees died.

I now have a young orchard in its place, some of the trees of which have been set ten or twelve years and the others were set a few at a time every year since.

Sweet corn has been planted in the orchard and the trees mulched and the ground enriched yearly since setting.

My trees look very well and I believe that the shade the corn affords has been a great help to them during the dry, hot weather.

I think that the secret of the one tree surviving the dry seasons and still annually bearing, is simply due to the fact that it received so large a supply of food from the drainings of the barnyard and the droppings from the hen house which stands close by.

I advocate plenty of well-rotted manure for an orchard from its infancy up, if you would expect good results.

I have also observed, in my own and other orchards, that the limbs that grow perpendicularly, or nearly so, bear but sparingly, with very small fruit, while on limbs of the same tree, the fruit would be larger and more plentiful on the limbs that grew straight out or were inclined downward.

I set some of my trees so that they would lean a little to the southwest, so that the top might shade the body from the scorching rays of the sun.

I believe we too often err in not training our trees systematically, and another mistake is by not thinning out when a tree over bears.

The McMahan is a splendid tree with excellent fruit and has done better since it commenced fruiting than any other tree we have. This year the trees were burdened with fruit, but it was very much smaller than formerly. I fear that my allowing them to over bear last year may interfere with the yield this year.

I see nothing in your reports concerning the Northwestern Greening. We have quite a number of these and they are the thriftiest and best looking trees we have; the fruit is beautiful and is keeping very nicely in our cellar.

What we lack in our vicinity is an early and good keeping apple.

Much is said about the location of an orchard, and some say that it is of no use to set one unless you have a northern slope.

This may be best, as it would be less work to care for the trees.

My orchard descends to the south, so I mulch my trees out as far as I think the roots reach, but do not do this until after the ground is well frozen. I do not think the sap starts any earlier than on the northern slope.

But no matter where they are raised or what their name may be, give us apples that will bear well, keep well, and sell well.

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#### DISCUSSION.

Mr. Robinson—I have been thinking of planting out an orchard, but I have been told that my land is not suitable. I am right on the edge of the marsh, the highest point of land is about ten feet above water. Are there any varieties that I could put out that would do well on such a location?

Geo. J. Kellogg—I would say, you can put out Hibernial and Longfield and a few crabs. You will have a water supply; your trees can go down and get a drink any time they want to, but I would say, "go slow." I would also add Duchess.

A. F. Collman—While I was at the world's fair, after the fruit was arranged, I used to spend one hour each day, towards night, in visiting the tables of the different states, and I learned a good many things about fruit and localities. For lowland, north of 40 degrees latitude, I would plant Duchess, Fall Orange, Noble Red Streak, Silken Leaf, Varonist Rosa.

I think the gentleman would be safe in putting out Anton-



ovka and Basil's Sweet in addition to those mentioned by Mr. Kellogg.

A. G. Tuttle—The Antonovka would not blight in the nursery, but it's a poor tree to grow; any nurseryman that grows a good tree ought to get fifty cents apiece for them; it is one of the best orchard trees. We talk about the Duchess, and about its great value, and then say, we have nothing valuable among the Russians. If any one could change my Duchess trees to Longfield or to Antonovka, I would be glad to pay one dollar apiece to have it done. The location Mr. Robinson spoke of is one of the worst for an orchard. I would much rather have sand than a soil that is low, black and mucky.

Herbert B. Vlieland—What about Russian pears?

A. G. Tuttle—The Russian pears are not worth anything.

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## MY EXPERIENCE IRRIGATING WITH AN ARTESIAN WELL.

E. E. Wolcott, Sparta.

We have about three and one-half acres of strawberries, raspberries and blackberries growing on a rather sandy soil; the ground is nearly level. In 1893, after the dry weather had ruined most of our berries, we put down an artesian well for irrigating; it has a four-inch pipe placed in the center of the patch. The well is 280 feet deep. The water will raise about ten feet above the ground and will throw about 150 barrels of water per hour at the well, but when running through a lot of pipe and hose, the amount is considerably less. Well, hose, pipe, etc., cost about \$255.

Last summer we commenced irrigating the last of May and kept it up for three months, we did not have any rain to speak of during the time. We have 225 feet of two-inch iron pipe which we attach to the well laying it on the ground out into the berry patch, then we put seventy-five feet of two-inch

hose on the end of the pipe, thoroughly soaking the ground as far as the hose will reach each side of the pipe, by taking off two or three lengths of pipe at a time, gradually working back to the well, then relay the pipe in another direction until the piece is all gone over. It took one man most of the time to handle the water, taking about a week to irrigate the three and one-half acres. The ground was then thoroughly cultivated, and we immediately commenced irrigating again. Remember, this was an exceptionally hot and dry summer. The same amount of water would have irrigated a much larger area in an ordinary season. The result was, we had very nice berries, large and juicy, every berry developed; the last berries were nearly as large as the first. Our plants are in excellent condition for next year. Berries across the road from ours, on the same kind of soil, were nearly a failure, and the plants for next year badly dried up, you might say there were none, only a stem with a few green leaves on top. Although the heavy frost the first of June killed about one-half of our berries we sold nearly \$500 worth from the three and one half acres.

The water, testing about fifty degrees in temperature, did not injure the plants in the least; those nearest the well got the most water, and of course the coldest (as it did not have a chance to run over hot sand before reaching them), but they seemed to have the largest growth and bore the largest berries.

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#### DISCUSSION.

J. D. Searles—I do not know of any question upon which I want to know so much, and really know so little, as I do upon this question of irrigation. We have got to come to this, I have heard the statement made that our climate has not undergone any changes, I know it has. I have been in this country fifty-two years and I expect to stay here the next fifty-two years and I want to prepare for it. I think we have got, in some way and somehow, to put water on our soil in Wisconsin.

I know we are not going to have immediate success in this state unless we irrigate. The question is, how far can we draw water from a stream with a portable engine? Cannot we have reservoirs to hold the water, then pipe it out on the place where we want it? We can produce double and quadruple sometimes by putting on the water in a dry season. This question of irrigation is one that I had hoped would come before the Society before this late hour.

One good shower last July would have brought in thousands of dollars. God has given us more rain than we have ever prayed for, but for some good reason he is withholding it now.

A. F. Collman—We had a dry season with us in Iowa. I had a little river on my place and I thought it would be a good idea to dam it up. I put in a team to work at it, and I made a little pond from which I can carry the water with pipes I carry the water and let it run between two rows, when the ground is saturated I put a little earth at the end of the rows to turn water into the next two rows, and so on, until the ground is all well saturated. My soil is a clay. When I come to your meeting next year I hope to be able to tell you of the success I have had, for I intend to try it further.

Wm. Toole—I was told that they had experimented at the experimental farm by irrigating some strawberries in much the same way.

President—Mr. Case has a paper on this subject which we will listen to now, after which we will have time for further discussion.

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### IRRIGATION OF SMALL FRUITS.

J. F. Case, Eau Claire.

As we have had so much extreme hot and dry weather for the last two or three years, the subject of irrigation has attracted the attention of a great many market gardeners and

fruit growers. There are some very dry spells almost every season in which we feel as if we could have some way of supplying our gardens with water, that it would please us very much. I felt that way and resolved that I would try it.

My little patch consists of ten acres, it is eighty rods long, east and west, and twenty rods wide; about midway east and west on the north side, I have a hill, or bluff, with an elevation of about seventy-five feet above the level of the surrounding valley. I commenced drilling a well on the top of that hill, and drilled one hundred and fifty feet, all the way through rock, except two feet. I struck water at a depth of sixty feet, but I kept the drill running as long as it would work, for I was determined to have a supply of water that would not fail, and I have it, for last season was perhaps as dry as it can ever be, and the water kept right up to the mark, with the pump running all the time when there was sufficient wind to run it. I put in a two and one-half inch tubular pump, and a twelve-foot Halliday Standard wind mill to run it. I wish now that I had put up a fourteen-foot mill. I made a reservoir by excavating the solid rock, nine feet deep and sixteen feet across, cementing it with Portland cement, it holds 216 barrels. Leading from the bottom of the reservoir is a three-inch galvanized pipe furnished at the outer end with a gate valve. It takes forty-eight hours to fill the reservoir when the pump runs steady. You have now a description of my plant for water works. I have about seven acres in small fruits, and I need, in a very dry time, about twice as much water as my plant furnishes.

My soil is a sandy loam. From two to four feet below the surface is the bed rock, of hard sand rock, that holds the water up to the soil good. The ground slopes from the hill, gradually, all around, so you see I can sub-irrigate without using pipe or tile

With the little experience I have had I think surface irrigation is the best for strawberries, but for all other kinds of fruit I think sub-irrigation is the best.

With the pressure that I have I can take my hose and knock the cabbage and currant worms senseless.

The elevation is seventy-five feet and the tower is twenty-five feet, making one hundred feet above the level. Last summer during the extreme hot, dry weather, my mill would not average over three hour's run per day, consequently I was troubled with a shortage of water. I have seen my neighbor's mill, of the same make as mine, and not more than forty rods away, with a seventy-foot tower, run all day, while mine would not make a revolution, perhaps the next day it would be right the other way. Now, I tell you, gentlemen, if we cannot depend on Providence for rain we cannot for wind. I would never advise anyone to put up a windmill for irrigating purposes, no, never.

If you are going to arrange waterworks and have to pump the water, use a Knowles pump, and run it with steam or gasoline. I have been informed that they are running engines with gasoline at very cheap rates and without much care. Any power that will run an engine will run a Knowles pump, and with one of those pumps you can force the water all over your premises; you can set them down by the creek or pond and throw the water a hundred feet high. If you have a well, curb it large enough so you can set your pump down within twenty-five feet of the water. With a pump of that kind you can pump when you please, wind or no wind, and you will not need a reservoir; you will save all of that expense by using the water direct from your pipe or hose.

You will probably say that it will cost too much for fuel to run it and for the care of it. Of course it will cost more than it will to run a windmill, but when you have to go without water in a very dry time for the want of power to raise it, you will think the extra expense and care is not to be considered.

With the pump and power of which I speak, you have it where you can handle it, and you can have water when you need it.

We Americans are a fast race, we cannot wait for Providence to shower down on us. When we want a blessing we want to help ourselves, and he who does not help himself generally gets left and has the pleasure of going without.

## DISCUSSION.

H. W. Williams—Will not the cold water from the well injure the plants?

J. F. Case—If the water comes down seventy-five feet before it strikes the ground it is warm enough for any plant. It gets pretty warm sometimes.

J. D. Searles—Windmills, in my estimation, will do for gardens, but I do not think, unless we have reservoirs that hold thousands of barrels, it will be of any value to us to attempt to irrigate.

M. Pierce—Those who are in the irrigating business know just how much it will cost to run an engine all day. I think the only way is to run it by wholesale, windmills are a failure; we've got to get steam engines.

F. L. Barney—The only way I can see is to have a reservoir to hold 10,000 barrels of water. I am satisfied I can irrigate what is necessary with an engine that would cost ninety dollars.

Fred Hanchett—We find it takes 1,500 barrels of water to give an acre a good wetting down. I have a relative who is working with the Stover Windmill company, selling irrigating plants out in Kansas. He advised us, of course, to put in a Stover apparatus. In Kansas they scrape out the soil and make a pond which will hold water. Our mill will pump about two days in the week and I am afraid it would not furnish water enough.

J. D. Searles—They carry water in aqueducts in the black hills. In Colorado, they are going to put in a system of irrigation that will irrigate 3,000 acres. I believe we haven't a spot in Wisconsin but that can be irrigated. The water is near the surface in some localities and further down in others; but it is there, and we must have it for our purpose.

L. M. Benedict—How far will the water run in ditches in Mrs. Wolcott's garden?

A.—It will not run far because it is so sandy, we have to move the pipes around.

L. M. Benedict—I saw a statement that it could be run 1,000 feet.

Secretary—I do not think the water was running more than forty or fifty feet from the well at Mrs. Wolcott's place. I was there last summer.

Prof. Goff—We have a twenty-foot windmill and we endeavored to keep a dozen plant beds looking decent with it last summer. We also wanted to keep the lawn between the beds watered, but we could not do it. We found that we could irrigate one-half an acre of strawberries in a day.

We used a ten-horse power engine, and was much pleased with it. I think we used a larger engine than we needed, I think a four-horse power would be sufficient. I think a larger pump than we used would have been better. Prof. Henry thought we saved sixty dollars on the strawberries. We made only one irrigation to make the crop, and we irrigated once after the crop was picked.

Elmer Reeves—I want to speak a word of caution in regard to making ponds. If you work in the hills, enough soil will be carried down by the melting of the snow in the spring to fill up the ponds. You can force the water from a river a mile or so, but you cannot draw the water. It does not require a very large engine to do it.

President—Mr. Collman is called for to tell us about irrigating celery.

A. F. Collman—We should be careful about making a pond; by using precaution there is no danger of land washing to fill up the pond. I plow a little furrow around the pond and just below the furrow I seed with blue grass.

A firm at Corning planted out five acres of celery. They got a twelve-horse power engine that carried the water to the upper side of the celery patch; they would dig a little trench on the upper side that would carry the water about half way across, then they would dam it up and carry it the rest of the way. Their celery brought them \$700 per acre, without the irrigating it would not have done it.

J. F. Case—A neighbor of mine, on sandy land, where the water would not run more than twenty feet any way, irrigated twenty acres of cabbages. He laid hose the whole length of

his patch, eighty rods. He puts pipes clear through, takes them apart, and puts them together again as he lays them along; he hasn't more than ten feet of head for the fall.

The apparatus I spoke of is not an engine, it is Knowles' pump.

No. 4 or 5 Knowles' pump will cost \$125 and a small boiler will run it right along. A six or eight horse boiler is sufficient. You do need an engine, just a pump and a boiler.

Prof. Goff—Our strawberries did not suffer from drouth until after the first of June. Some seasons we might have to irrigate earlier. The opinion of several was that the berries were softer than they would have been if they had not been irrigated. I think it was so, I think the flavor was also a little less than if we had rain.

J. D. Searles—I shall put in an irrigating plant by making the head. I think it will take about 800 barrels per acre.

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## TREE PROTECTORS.

Prof. E. S. Goff, Madison.

It is pretty well agreed among fruit growers that we should protect our trees in some way. I have tried four kinds of protectors, lath, paper, wire cloth and straw, and have kept an account of every item of expense. I treated the straw with Bordeaux mixture, before putting it on the trees, to preserve it and to guard against insects. With a boy to help me, I could tie the knots and cut the string just as fast as I could walk along. The straw protectors cost a little less than one cent per tree. Most of the trees had short bodies, so we cut the straw into two lengths. The objection has been raised that the straw harbored insects. I know of two parties that have used the straw for three years. I wrote to each one to ask about it and they replied that they found none, not even the curculio. It is seldom necessary to protect bearing trees, so this objection about the harboring of insects in case of bearing trees need not be raised.



Some trees have low branches, so we have to spread open the lath on account of the branches. I think the straw protection will guard against the borers. The string has not done any harm by being too tight.

It has been a protection against mice and rabbits so far as we know, although I do not think we can claim that it is a perfect protection against mice. It remains to be proved that the Bordeaux mixture is even desirable. I put it on so as to have it secure so far as possible. We used clean rye straw. We paid twenty dollars per ton for it. We agreed to pay above market price for it, but I found afterwards that we paid double the price that we ought to have paid for it. It was simply put in the machine a little ways and the heads threshed off, without being unbound. The following is the cost of the straw protectors:

58 bundles straw @ 4 cents .....	\$2 32
Material for Bordeaux mixture.....	75
Twine and tar .....	1 21
My own time, 3 3-4 days @ \$2 .....	7 50
This included making and treating with Bordeaux mixture.	
Helper, 2 days @ \$1 .....	2 00
Total .....	<u>\$13 78</u>

Fred Harden—I think wool twine is all that is necessary, for we have to take it off every year or it will cut the bark. I put the straw on as thin as I can put it on.

Prof. Goff—I think one-half an inch thick is about right, if it was thicker it would injure the tree.

A. L. Hatch—If anyone wants to use the lath protector he had better put the straw around the top. I am taking off straw protectors that have been on two years. I took the straw all apart to see if I could find any insects and I did not find any. I know of no insects that would be apt to infest, unless it be the codling moth. I am satisfied that mice would not trouble straw that was treated with Bordeaux mixture. I had mice, but they did not trouble my trees. There are near

me ten or fifteen hundred trees that have been neglected and they show sunscald on the southwest side. In no instance have I seen sunscald where the trees have been protected.

Secretary—I never heard a man advocate that the lath protector would keep the borer away. I go around in the spring and throw inside the lath a handful of ashes or hen manure or something that I would not want to crawl through myself. I am not troubled with them, but I do not know whether the treatment has prevented it or not.

I have used the lath protector for twelve years. My boys have made them this winter for three cents apiece; they will protect the tree thoroughly for seven years. Experience has taught me that it is the most practical thing that I have found.

H. R. Cotta—There is another material that is used as a protector, it is a veneer the thickness of berry box lumber.

H. R. Cotta—Another protection is common screen wire; it is a protection against borers, and does not exclude the air. They cost only half a cent apiece and they will last as long as you want protection on the trees. It is of the ordinary mesh like window and door screens. I must leave now and before I go I wish to thank you for the kind treatment I have received. I hope you will send a delegate to our next meeting.

Geo. J. Kellogg—I do not believe the flat-headed borer will ever work under the lath protector. I would go one hundred miles to see one that did.

A. A. Parsons—I used 150 of the lath protectors at first, and I found it was a good thing. I was afraid it would hurt the trees. I afterwards put it on 4,300 trees. I think it is a protection against borers.

A. G. Tuttle—The sunscald is not the work of a single season. It does not affect small trees just planted out, or up to two or three years after planting. I do not think you need to protect from sunscald under two or three years. I have taken thin-boards and nailed them together and stood them up to protect trees. I tried lath protectors on Wealthy trees and they showed a flattening on one side.

## REPORT OF COMMITTEE ON AWARDS.

Your committee to award premiums on fruit and vegetables exhibited at the winter meeting submit the following report:

Best collection of apples, A. L. Hatch, 1st premium.....	\$5 00
F. H. Chappel, 2d premium .....	3 00
Best four varieties for quality, hardiness and productiveness, F. H. Chappel, 1st premium .....	3 00
A. L. Hatch, 2d premium .....	2 00
Best three varieties long keepers, A. L. Hatch, 1st premium.....	3 00
F. H. Chappel, 2d premium .....	2 00
Best three varieties Russians, A. L. Hatch, 1st premium.....	3 00
F. H. Chappel, 2d premium.....	2 00
Best three varieties Crab apples, A. L. Hatch, 1st premium.....	3 00
F. H. Chappel, 2d premium.....	2 00
Best plate Fameuse, A. L. Hatch .....	1 00
Best plate Ben Davis, F. H. Chappel .....	1 00
Best plate Northwestern Greening, A. L. Hatch .....	1 00
Best plate McMahan, F. H. Chappel.....	1 00
Best plate Newell, C. A. Hatch .....	1 00
Best plate Plumb's Cider, F. H. Chappel.....	1 00
Best plate Golden Russet, Geo. J. Kellogg.....	1 00
Best plate Windsor, A. L. Hatch .....	1 00
Best plate Talman Sweet, F. H. Chappel.....	1 00
Best plate Flushing, Henry Tarrant.....	1 00
Wm. Stammer, Outagamie county, exhibited fifty varieties of seed- ling apples, many of which show excellence of quality, good size and great beauty, and for this exhibit your committee recom- mend a premium of .....	3 00
F. H. Chappel exhibited four varieties seedlings of excellent quality for which we recommend a premium of .....	1 00
Waupaca county exhibited five varieties of seedlings of the usual beauty and good quality.	
H. C. Wilson, Madison, exhibited specimens of a winter seedling of great promise.	
L. L. Olds exhibited ten varieties of potatoes which are a credit to the grower and awards were made as follows:	
Best display potatoes, L. L. Olds, first premium.....	3 00
Best half peck early variety, L. L. Olds, first premium.....	2 00
Best half peck late variety, L. L. Olds, first premium .....	1 00

We think the exhibit of apples ought to encourage the production and planting of more of our western apples, as it shows that we are to be ultimately supplied with home grown apples of home origin.

J. C. Plumb,  
A. D. Barnes,  
Committee.

Adjourned.

Thursday Evening, Senate Chamber.

Mrs. Janet B. Day again favored an appreciative audience with a selection from Whittier, also gave "Gossip of the Flowers." She was heartily encored, and responded with "My Philosophy," by James Whitcomb Riley.

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### LOCAL SOCIETIES AND THEIR BENEFITS.

Mrs. Lizzie Tripp, La Crosse.

When I was asked by your secretary to represent our society and also to prepare a paper for this meeting, I was well aware that he had made a great mistake as regards a writer and a horticulturist, as my knowledge of horticulture has been limited, and for me to undertake to write and read a paper in that line to this audience of men and women who have made fruit and flowers their study for years, would result in utter failure.

The subject I have chosen to write upon is one that should interest every tiller of the soil, that of Local Societies and their benefits.

For an introduction I will give you a short sketch of the society I represent, namely, the La Crosse County Horticultural, Agricultural and Dairy Association.

Some twenty years ago, a little grange was started in our neighborhood, where we used to meet every two weeks, write, read and discuss the different topics of farming. Other granges were organized and the right hand of fellowship was extended all over the county. After some ten years of successful meetings, the grange fever began to wane and the charter was given up. But a number of the members were not satisfied without a farmers' club of some kind, in fact it had become a school to them and they often wished for the opinion of their fellow farmers on different questions in farming. They longed for those social meetings and the granger's grip again, so, with a few of the horticulturists, they organized the so-

ciety we have now. The work has been taken up by younger members, and younger hands are plying the oars, but many of the same old patrons of husbandry who signed the charter in 1874, are standing firmly at the helm, steering our craft in the right direction.

Though time has plowed deep furrows in their cheeks and age has silvered their hair, yet their hearts are as young and their memories as fresh as twenty years ago.

“They lived not hermit lives, but oft  
In social converse met,  
And fires of love were kindled then  
That burn on warmly yet.”

In these meetings you will find the mother with her crowing babe, and old age leaning on his cane; there you will find the farmer with his wife, his sons and daughters, all have met for a social, good time. “Peace and Good Will” is our motto, “Industry and Uprightness” our watchwords.

Now, my friends, with this picture before you, I need not tell you what benefit is derived socially. Sociability and friendship, what is life worth without them? They help us over the rough places, lighten life’s burdens, and make us better men and better women.

As to the financial benefit, were you to ask me the exact amount in dollars and cents that is gained by these local meetings, I would be unable to tell. And so would the parent, who, day by day denies himself many a luxury and often necessity that his children may have an education, fully satisfied that there is a great gain, as a reward for their self-denial.

Is it not a financial gain for the farmers to meet and discuss the past year’s crops, that he may know what is the best crops and the best methods of cultivation in case of another drouth? Is it not a gain to know why one neighbor is reaping large crops of grain and berries, while another is scarcely paying expenses? There is a reason for all this, and the local meeting is the place to find it all out. The greatest gain is in the awakening of new interest in our vocation, that we may give it more thought and study than we have hitherto. Do not think for one moment that I mean that the farmers of today do not study or think. When we find men and women of great

learning grasping for more knowledge, and, like Napoleon of old, wishing for more worlds to conquer, should we be satisfied? Have we finished our education? Have we gained all the knowledge there is to be gained in our business? I answer no. There is not a man or woman on the face of this globe that has finished his or her education in this great study of nature and her products.

The question is often asked, what part do the ladies take in these meetings? In our society the ladies are active members. At nearly every meeting we have papers prepared and read by them. They often take part, and are as much interested in the discussions as the gentlemen. In fact we are given equal rights, which is a great satisfaction to the most of us. Our ladies are thoroughly interested in this work, and why should they not be? Is it not the vocation of their fathers and husbands? God surely intended woman should be interested in farming, for away back we find Eve, as a horticulturist, very much interested in the fruits in the garden of Eden. We find Ruth, the Moabite, as an agriculturist, gleaning in the harvest fields of Boaz; we find Rachel, as a shepherdess, herding her father's flocks by the well of Sharon. They were not ashamed of their husband's or father's calling, why should you or I be?

Sisters, I stand here tonight to plead with you to take an interest in these meetings; it stands largely with you whether they shall be a success or not. Where women have taken up church work or work of reform and become thoroughly interested, they have achieved success; they have given up home and many a sweet in life to better the world's condition. But I am not asking you to deny yourselves anything, but to bring more sunshine into your lives by helping to organize and maintaining these societies all over our land.

Let us help our brothers to elevate our calling, that the coming generation may feel that it is a noble work and worthy of the world's respect.

Get the girls interested as well as the boys. Often when I hear the short course in agriculture spoken of in the highest terms, and the young men being urged to attend, I always want to say, send your young women also; it will not make

them any the less ladies to understand every line and precept of farming. That knowledge may some day become very useful, and is easily carried around.

How often have we seen the husband taken away, and the wife left with her fatherless children, without any knowledge of farming? What is the consequence? Farm runs down; machinery goes to pieces; fences tumble down, everything goes to wreck. In a few years she must sell to save the little that is left, move to town, where the children find employment in factory or shop, where they seldom have the opportunity to advance above day laborer. Why all this? Simply because the mother had not taken interest in, or availed herself of, the knowledge within her grasp. Or perhaps she may be one of the class that does not believe that farming is a fit vocation for a woman, and that the agricultural college is not a very refined school for a lady. If the agricultural college is not fit for a lady, what must be the dissecting rooms of a medical school, or the criminal bar of the law college? And still we find women all over this land studying for these and many other professions and retaining their ladyhood.

Kind friends, I am glad to say that I belong to what I believe to be the most peaceful and industrious class of people in the United States today—the farmer. Let us not be satisfied with that, while there is yet so much to learn.

Do you not think if there was a good, flourishing society in each of the seventy counties in the state of Wisconsin, that their influence would be for good? That their power would be felt? Do you not think if they were to knock at the doors of our legislature for laws in their interest that they would be heard? We are told in "Union there is strength," and if united we would stand our strength would be felt the length and breadth of this land. It is my prayer, should the farmer ever realize the power that lies within his hand, that he may use and not abuse the power that God has given him.

"Yes, brothers of the plow,  
The nations must be fed,  
And Heaven gives the power to  
The hand that holds the bread."

## HIGHER EDUCATION OF WOMEN.

Vie H. Campbell, Evansville.

If every child has a right to be well born, every child has an unquestionable right to be well trained, so that the largest possible latitude may be given to the inherent powers of the individual. That countless thousands are deprived of this right, is strong proof of an erroneous system that stands out in striking contrast to our so-called "higher civilization."

Education means a drawing out of every human faculty, and by its means an all-aroundness is developed. Without this development a symmetrical character is an impossibility, with it all characters may be of that well-rounded type that is essential to an approximation to the estate of perfection.

If the majority of the people were asked to define the term education, the answer would be, "it is the improvement of the mind." A careful consideration of the question will demonstrate the incorrectness of the reply, and yet an investigation of the system in vogue in our schools shows that it is the common acceptance of the term. The answer is vague and uncertain, because it does not take us one step beyond the starting point.

If I were to make the statement that education means training the eye and drilling the hand for the purpose of producing a work of art, you would tell me that my theory is a fallacious one, because such an education would not develop all of the latent talent of the child; that the system is unjust to her because it cultivates some of her faculties at the expense of others. Instances illustrating the proof of these statements are found on every hand. People educated in one direction, like parts of a machine, when obliged to depend upon their own resources are almost helpless, and are of little value in this practical work-a-day world; they are like the housewife's plants which she has kept standing in one position until they have developed a one-sidedness in which there is no symmetry; beautiful they are if you only look upon the one side, but bare and unsightly if you look at the other side.



That system of education is the most complete, the most perfect, that develops, draws out all of the God-given powers, and any system that fails to accomplish this, falls so far short of its real mission that it is not worthy of our patronage. We should look with distrust upon a system that develops the receptive faculties to their utmost tension and fails to take cognizance of any other endowment. It is a law of nature that the equilibrium between brain and hand work must be maintained or the individual must suffer. If we are wholly occupied with the work of our hands the brain must suffer; if you exercise the brain only, the hand will be dwarfed.

Our teachers should be of a universal order of mind, with large charity and broad sympathy, quick to grasp an advantage, quick to see the qualities that need the most favorable conditions thrown around them for their development, and as quick to discern those that must be repressed. If the child loves literature and art, and hates the practical things of life, she must be kindly led to understand that without the practical knowledge she cannot expect to succeed in that direction for which she has a natural tendency.

The injustice which parents, rich or poor, do their daughters, in not educating them for some vocation by which they may become self-supporting and thus lifted up out of their condition of pecuniary dependence, cannot be estimated. That mother love evinces no wisdom that shields her daughter from, rather than prepares her to meet with true womanliness, the grave responsibilities of life. The world is full of demands for skilled labor, and in justice to our girls, they should be carefully educated to meet those demands. The changed conditions of life, or rather the new conditions, which confront women, compel a higher education than has heretofore been deemed necessary. The last decade has witnessed a wonderful stirring of the sympathies and quickening of the impulses and energies of woman, and the result of this awakening has been an ascent in the social, intellectual and industrial scale, a gravitation toward a self-reliant, self-supporting and dignified state of womanhood, and with it has come the desire for power and ability to properly discharge those duties which she regards as sacred trusts and,

"I think there's scarce a soul among us all  
Who has not sometimes felt a glorious thrill  
Of quick response to some inspired call  
For earnest purpose and devoted will,—  
Who has not felt the heavenly life so real  
That, rising by this mortal life, God-given,  
She might attain her loftiest ideal  
And prove her kinship to the saints in heaven."

The old theory (and it is not so old but most of us here tonight can remember about it) that it was not necessary for a woman's education to go beyond "the three R's and a domestic training," has now come to be considered as one of the errors of the past.

In the primeval days, before the human family had attained a position of tranquility or comfort, it was necessary for man to act the defensive, to be the warrior and the hunter, and woman's lot was to build the shelter and till the land, she was a burden bearer. As conditions changed and man became less warlike, woman's work became more domestic, her hands ground the meal and fashioned the clothing. Further progress brought us to the age of mechanical invention which lightened the labor of men and women, and gave them opportunity for mental development.

Olive Schreiner, in an unique, but impressive manner, illustrates the condition of woman in the past and her path of progress through the centuries. She said: "I thought I saw two great figures in the desert, one lay upon the sand with its neck stretched out, and one stood by it. I asked the guide who stood by me, who this creature was lying on the sand? and he said, it is woman. I asked why she laid there motionless with the sand piled around her? He answered, 'Ages and ages long she has lain here, and the wind has blown over her. The oldest, oldest man living has never seen her move; the oldest book records that she lay here then as she lies here now, with the sand about her.'

"I asked, why does she lie there now? And he said, 'Ages ago the age-of-dominion-of-muscular-force found her and put his burden of subjection on her back and tied it on with the band of Inevitable Necessity.' Then she looked at the earth

and sky and knew there was no hope for her, and she lay down on the sand with the burden she could not loosen and has lain there ever since, because in all the ages the band of Inevitable Necessity has not been cut.' I looked and I saw in her eyes the terrible patience of the centuries; the ground was wet with her tears and her nostrils blew up the sand. I asked, has she ever tried to move? He said, 'sometimes a limb has quivered, but she is wise; she knows she cannot rise with the burden on her.' And I asked, why does not he who stands by her, leave her and go on? He said, 'He cannot, Look'—And I saw a broad band passing along the ground from one to the other, and it bound them together.

"He said, 'while she lies there he must stand and look across the desert, he does not know why he cannot move.'

"Then I heard a sound of something cracking, and I looked and I saw the band that bound the burden to her back broken asunder and the burden rolled to the ground. The guide said, 'The Age-of-muscular-force is dead. The Age-of-nervous-force has killed him and has crept up to the woman and with the knife of Mechanical Invention he has cut the band that bound the burden to her back. The Inevitable Necessity is broken, she might rise now.' I looked at her as she lay motionless on the sand with her eyes open and her neck stretched out. She seemed to look for something on the far-off border of the desert, that never came. I wondered if she were awake or asleep. As I looked, her body quivered, and a light came into her eyes, like a sunbeam that breaks into a dark room. I saw that the thought had come to her that she might rise. She raised her head from the sand and I saw the dent where her neck had lain so long. She looked at the earth and the sky, and at him who stood by her, but he looked out on the desert. I saw her struggle and try to rise, but she was very weak, she had lain there so long. I said, surely he who stands by her will help her. The guide said, 'He cannot help her, she must help herself, she must struggle till she is strong.' And I said, at least he will not hinder her! See, he moves farther from her and tightens the cord between them, and he drags her down. And he answered, 'It is because he does not under-

stand. When she moves she draws the band that binds them and hurts him, and he moves farther from her. The day will come when he will understand, and will know what she is doing. When she rises he will stand close to her and look into her eyes with sympathy.'”

Woman has struggled to her feet and is fast becoming emancipated from the isolation and drudgery that characterized her former position. She has been taught to read, think and aspire. Her new conditions call for greater development, for the higher education that will enable her to maintain a dignified position of noble womanhood, to plan for her future, to determine what will be for her highest good and her largest usefulness.

The business woman has come to stay. A combination of events has forced her into prominence and she is kept there by the combined forces of her own efficiency and of the terrible fact that 150,000 men are annually incapacitated for labor by the drink curse.

The wonderful inventions of the past twenty-five years and the perfection of machinery are important factors in the employment of women. Every year sees more and more of the world's work that requires physical strength, done by machinery which requires skill to direct as well as dexterity and judgment. The industrial world has discovered that woman possesses these characteristics, and thousands of women are now employed in industrial vocations.

Our duty is, not to study how we can avert these changed conditions, but how we can best prepare ourselves to meet them and to occupy with credit the places we shall be called upon to fill.

If the industrial world has a place for women the religious world has also a claim upon her. She has already heard the call to “preach unto all nations” and is preparing herself to respond. Woman has the natural qualifications that are so essential to the successful teacher, and it is surely fitting that she should teach from the vantage ground of ample opportunity which the pulpit affords her. Her impulses are strong, her sympathies are kind and tender, and with her willingness to consecrate her gifts of intellectual

power to her sacred work, she promises to be a great factor in opening the eyes of the spiritually and morally blind; in bringing the deep significance of life to those who regard it too lightly. To her has been given the ability to bring the human mind into contact with Divine revelation. It is the Divinity within us that elevates and saves, and no person is so low in the scale of human development that he does not possess the Divine spark which by careful effort may be fanned into a redeeming flame. It is woman's blessed privilege to minister unto the needs of the sin-sick and weary whose pathetic eyes and pinched features reflect the hungry, half-starved soul within, and to apply the healing balm to the wounded heart.

This field of labor for woman is a large one. More women are needed to preach the gospel of temperance to the drinking classes, the gospel of thrift and the gospel of cleanliness that means godliness to the poorer classes, who are suffering physically and spiritually because this gospel, which gives life "more abundantly," has not been preached to them; that class who live in the lower strata, between whose wretched homes and the church door there yawns a wide, impassable chasm.

Woman's efforts in this direction will have a threefold action. In helping others she will help herself and she will also obliterate the sex line in the realm of ecclesiastical office and power. From her broadened outlook she sees,

"The whole round world in every way  
Bound by gold chains about the feet of God."

"For truth can draw no boundary line,  
And God encircles every zone."

And she is doing more to cause the crumbling of the walls that separate church societies, and to bring about that unity of thought and feeling which illustrates "the fatherhood of God and the brotherhood of man," than all other forces combined. The church that today opens its doors of ecclesiastical freedom to woman is the church of gospel triumph and heavenly benediction, its power for good is unlimited because it avails itself of its every resource.

If the church needs woman the nation also needs her. Intemperance, lawlessness and unrighteousness, in seeking to promote their own base purposes, threaten to engulf home, church and state.

Who can estimate the extent of the danger that threatens us when the men who stand behind the bars of the dramshops wield a greater power in our political arena than those who stand in our pulpits?

Men, good and true, find themselves powerless to stay the oncoming tide that is causing the very foundations of our government to tremble and they are saying, "we must have woman's effort and woman's ballot to help us in our struggle to save our homes and our children."

The conviction is yearly growing stronger in the minds of thinking people, that in a civilization where law is the crystallization of public sentiment, and all revolutions and reforms are brought about at the ballot box, women especially need that weapon which is the most potent factor in government for all social and moral reforms. And we find that the more decided woman is in her opinion about the great questions of the day, the more desirous she is of having it counted. The old objection that "it is unwomanly for women to have anything to do with politics" is fast giving place to the expression, "anything a woman does in a womanly way, whether it be to circulate a petition, raise money for her pastor's salary or to record her protest where it will be counted on election day, will command the respect of intelligent people." Is it unwomanly to provide for the safety of our children? God has implanted in every woman's heart qualities that prompt her to care for and protect her offspring; they are feminine attributes, essential to the woman. If we can protect our boys and girls better by going to the polls and voting out vices that threaten their ruin, are we unwomanly? Those of you who have read "Sweet Cicely" will remember how quaintly, yet how forcibly, Samantha puts the question to Josiah, when she tells him she has always noticed that it is the old hen which flies around to shelter her chickens when she hears a signal of danger, and nobody calls her un-henly."

Shall we teach our boys patriotism and then tell our girls to be patriotic is unwomanly? Nay, that which is unwomanly is unmanly also.

Woman and the saloon represent the two extremes of the nation. One stands for the preservation of the home, the other seeks its destruction. Truly did Secretary Windom say: "The saloon is in the field of American politics and it has come to stay until victorious or vanquished." Men pour their dimes and nickels into the till of the saloon-keeper, which, while they deprive their wives and children of the necessaries of life, help to furnish the sinews of a business that wages its unholy and relentless war against their homes and the best interests of their families, and yet, poor crazed humanity bewails its wrongs, denounces the oppressive hand of capital and begs for bread. The remedy will be found in an educated womanhood at the ballot box.

Women are the reserve force of the nation. All old soldiers who were in active service will tell you that in time of battle the hardest and most trying position they ever occupied was when they were held in reserve. How they stood on the heights watching the battle from afar; how they saw fresh troops ordered up only to be mown down by shot and shell before the enemy's fire; how every fibre of their being was thrilled, how every brain was racked and tortured by the agonizing thought "why do they not call out the reserve? If they would only order the reserve to the front we could rush up take the places of the brave ones who have fallen and vanquish the enemy, drive him off the field and stop the fearful slaughter." But they see them move leisurely up, keeping step as one man, only to fall before the terrible fire, until the reserve becomes almost frantic, almost uncontrollable as they see one after another fall in the fierce contest. And so women are watching the arena today from the heights of mother love, hoping, praying that the reserve will be called out, ere it is too late; ere the enemy has gained the stronghold and has wrought ruin and desolation everywhere.

The belief that still lingers in the minds of some people that woman has no responsibility in this direction, that she must not share with man any duties that are of a public nature, is

an erroneous one; it put woman in a false position because it assumes that she is not a responsible person. Take away responsibility and you weaken the character of the individual and narrow the influence for good.

The position of woman should never be secondary. Her interests are identical with man's. Humanity needs both, and in every condition of progress, both must necessarily be included. The government that holds her accountable for violation of the statutes equally with man, should allow her the right of equal expression. The clock, that strikes the hour for our century, points with unerring hand to the time when woman must aid in the solution of the great moral and social problems that are of vital import to her and all she holds dear.

Ruskin says: "Generally we are under the impression that a man's duties are public and a woman's private." But this is not altogether so. A man has a personal work or duty, relating to his own home, and a public work or duty, which is the expansion of the other, relating to the same. So a woman has a personal work and duty, relating to her own home, and a public work and duty, which is also the expansion of that.

Now, the man's work for his own home is, as has been said, to secure its maintenance, progress and defense; the woman's, to secure its order, comfort and loveliness. Expand both these functions. The man's duty as a member of a commonwealth is to assist in the maintenance, in the advance, in the defense of the state. The woman's duty, as a member of the commonwealth, is to assist in the ordering and the comforting of the state. What the man is at his own gate, defending if it need be, against insult and spoil, that also, not in a less, but in a more devoted manner, he is to be at the gate of his country, leaving his home if need be, to do the more incumbent work there.

And, in like manner what the woman is to be within her gates, as the center of order and the balm of distress, that she is also to be without her gates where order is more difficult and distress more imminent.

When women form a part of our law making bodies the mother love will be manifested in more just laws, and those



infamous laws that make little girls over twelve years of age the legitimate prey of the designing and unscrupulous, will be erased from our statutes.

The growing individuality and independence of woman will require of man a higher standard of character and purer habits of life, it will demand a white life for two; it will establish that single standard of purity that will not,

“Stone the woman and let the man go free.”

That will not

“Let one soul suffer for the guilt of two.”

The woman whose life lines are cast within the home circle, which by no means is a narrow radius, needs a higher education to prepare her for her work. The old idea that every woman is endowed with a mother's instinct which is of itself a sufficient guide in the training of children, has been too long assumed.

As civilization advances “new occasions teach us new duties.” Woman's relation to her home and her children are vastly different now from what they were twenty-five years ago. And, in view of these facts, how much are we doing to prepare our girls for the great responsibilities of wifeness and motherhood—they who are to take charge of the mortal bodies and the immortal souls of the children upon whom all the interests of the world's future depend? How much does the present accepted curriculum in our schools and colleges do towards preparing young women to understand child nature and the relation of mother life to that of her child? Is not such an education essential? The mother must build day by day that which is forever to adorn or to disfigure, for

“Souls are built as temples are” and

“Every hand may make or mar.”

Woman's work demands the broadest education, it needs a many-sided, multiform culture, so that the heights and depths of human life will not be beyond the reach of her mental vision. She needs the strength that comes from knowledge, and the magnanimity that springs from strength.

The call for the higher womanhood has gone forth and women throughout the world are coming forward in response to the summons. It calls from ignorance, from indolence,

from superstition and subjection. The barriers which have surrounded woman are fast crumbling to decay, and in proportion as the law of force is becoming obsolete and the law of love and reason is taking its place, just in that proportion will the equal claims of women receive their just recognition, and we shall see a marvelous union of womanly tenderness with manly courage and strength. We shall see a reign of gentleness, goodness and purity; a reign of temperance, of charity, of philanthropy and of all the graces and virtues. We shall have better fathers because we shall have better mothers and the whole world will be homelike.

Much is expected of woman today. At no time has there been so much to inspire her to action as now, and to the resolute spirit there are no impossibilities, no such word as fail.

It is hers to reap a golden reward in the freer life and the enlarged opportunities which the higher education will bring to her.

“This is an age of progress, wisdom, light,  
When science soaring takes an upward flight;  
When knowledge, truth and reason should control  
And lift from ignorance the growing soul.  
No fields in space so rich and manifold  
But wisdom’s key unlocks the shining gold.  
Be up and growing! Let some truth divine  
Shine on your pathway, o’er the sands of time!  
All things are moving, systems roll in space,  
Nothing needs progress like the human race.”

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## HORTICULTURE IN THE SOUTH.

S. F. Bizzelle, Tuskegee, Alabama.

In order that you may get the necessary data concerning this subject, I think that one who has made a special and thorough investigation into the matter should address you, which is not true of myself. Hence what I shall endeavor to say on the subject will simply show the way that it has appeared to me while passing to and fro in the south.

The term horticulture in its fullest meaning covers a broad

field—the culture of fruits, the culture of vegetables, the culture of seeds, the culture of mushrooms, the culture of trees, and last, but not least, floriculture, the culture of flowers.

To my regret, I must say that this industry (and a grand one it is), has as yet received but little attention in the south.

The fact that the most of our horticultural literature comes from the north, east and west plainly shows that this industry holds a secondary place in the south.

Science teaches (and who can dispute it?) that there is a cause for every effect. This being true there must be a cause, or causes, for the short-comings of this industry in the south, which causes I shall endeavor to give.

In the first place it is to be remembered that, compared with other industries, horticulture is a new industry in the United States, and it seems to be true that the people of the south have not as yet realized the fact that it is a paying industry, and not only so, but it is to be remembered that horticulture is both a science and an art, and there are but few, if any, scientific horticulturists in the south.

For one to engage in this industry he should know the fundamental principles thereof; otherwise should a disease take his crops he would feel like saying with the senator, "where am I at?"

As far as the aesthetic division of this subject is concerned, that seems to be regulated by culture. In some places in the south if there is a bed of flowers it is bashfully hidden as if afraid of being in some one's way.

I agree with Mr. Scott in saying that the people of the United States have not as yet reached the point in culture that they can enjoy the beauty of nature. Especially is this true of the majority of the people of the south.

It is generally thought by the southern farmer that monster cotton is the crop of crops, which has proven detrimental to the majority of the people, by their extensive growing of the same.

The majority of the people of the south do not own land, and hence the crop that they will plant is not left altogether with them to decide.

For one to engage in this industry, especially if he is to give

much attention to the fruits, he must be able to invest money in the purchase of fruit trees and wait some years for its return, this, the majority of the people of the south are not able to do, especially is this true of the sons and daughters of Ham.

Hence there is a disposition on the part of the southern people to engage in those industries which bring immediate returns, such as mining, sawmilling and so on, for which they are not well paid.

All of these things, as you can readily see, have been impediments to horticulture as a special industry in the south.

In some cases there is a sufficient amount of such products grown for home consumption, but none for market. Florida, I think deserves credit for her orange production.

But you would ask, what are the possibilities of success at this industry in the south?

This question I would answer by asking, what success have the manufacturers of New England had in placing their mills on the Merrimac river?

In the first place the climate is so very favorable and land can be obtained at a very low price; and in the second place, one would have no trouble in finding a market, since the southern people instead of sending north, east and west for such products, would patronize the home market, which would be better for them, and also for the producer.

There are things which grow in the south which cannot be successfully grown in this climate because of the cold and the shortness of the season. The sweet potato, melon, and the pear which flourish in the south, do not prosper in this climate.

A gentleman, in speaking of this climate, said that we have six months of cold weather and six months of winter. Of the south I can say, generally we have six months of warm weather and six months summer. Because of this, in some cases we are able to raise two crops of the same kind in the same year.

With the exception of the strawberry, the berries of the south receive no attention. The blackberry, gooseberry and huckleberry are not cared for.

Hence you can readily see the condition of the horticultural

industry in the south. There is consolation in the thought that the twentieth century predicts a change for the better along this line.

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B. S. Hoxie—I suppose almost every one in this audience has heard of Booker Washington and has heard him speak, as he spoke at Monona Assembly last year. Mr. Washington is at the head of Tuskegee Normal and Industrial Institute and Mr. Bizzelle, who has just read the paper, has been a student of that school, and is now in our university.

By request, Mrs. Day gave another selection.

Adjourned.

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#### REPORT OF TRIAL STATIONS.

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#### REPORT OF TRIAL STATION AT WEYAUWEGA, WIS., FOR 1894.

Fred A. Harden.

It is needless for me to say that it was another poor year for trees and small fruit especially strawberries, for you all had the same experience, I presume, that I did with the drouth. However, I received and set for trial the following:

Apples—Two Eicke, two Green Streak, from H. R. Cotta.

Plums—Two Dye House, from H. R. Cotta.

Pears—Two Vermont Beauties, from Green's Nursery Co.  
All of which are doing well.

One tree of each variety of all the apple trees are protected with straw.

Last spring those that were protected with straw had from 25 to 50 per cent. less blossoms than those that were not protected, they were also a little later in leaving out and blossoming. Quite a number of trees were affected with blight,

those that were affected most were, Scott's Winter, Raspberry, Yellow Transparent and Talatoret. The whole top of the Besimenaka pear and two or three limbs of the Idaho blighted.

In 1892 were set two Malinda apple trees, one died last winter and I think that perhaps the other may die this winter, as the heart of it is turning black.

I sent Prof. Goff one or more specimens of fruit from nearly all the trees that bore fruit the past season, who, I presume, will make a report on the same to you.

The names of those that fruited are as follows:

Duchess, Scott's Winter, Palmer, McMahan, Newel's Winter, Duchess No. 2, Gold Drop, Windsor Chief, Arabian, Yellow Transparent, Borloff, Longfield, Glass Green, Noble's Winter, Hartshorn, Duchess No. 6, Duchess No. 4, Good Peasant and Hoadly apples.

Rockford, Marianna and Wild Goose plums.

Grothe Du Nord, Double Natte, B. Branme and Spats Amerable cherries.

Of the apples, Longfield, Windsor Chief, Yellow Transparent, Noble's Winter, Good Peasant, Duchess No. 6, and McMahan were the most productive.

Longfield and Good Peasant I think are one and the same variety.

Noble's Winter is very much like the Haas and am inclined to think it is the Haas.

The Marianna plum tree is perfectly healthy, it has a large, thick top and is very productive.

Spates Amerall is the best cherry.

Strawberries, with a Short Description.

Aroma, S.—Picked first berries June 18, good size and quality. Fairly prolific. Firm.

Auburn, P.—Picked first berries June 13, small, fair quality. Soft.

Barton's Eclipse, P.—First picking June 17. Fair size. Good quality, and very productive. Soft.

Bederwood, S.—First picking June 12. Medium size, quality good. Firm, a shy bearer.

Beverly, S.—First picking June 18. Fair size, good quality and very productive.

Boynton, P.—First picking June 10. Fair size, good quality and productive.

Clever, S.—First picking June 18. Large, firm and fair quality.

Crawford, S.—Not any.

D. and D., S.—First picking June 11. Medium size, quality good, fairly prolific.

Edgar Queen, P.—First picking June 18. Small, poor quality, soft and very few berries.

Enhance, S.—First picking June 11. Large, firm, vigorous plant, fair quality and fairly prolific.

General Putnam, S.—First picking June 14. Medium size, good quality, not very productive, soft.

Gillispie, P.—First picking June 15. Small berries, of fair quality. Firm.

Gov. Hoard, S.—Not enough to pick.

Greenville. Late, small, good quality, and a few firm berries.

Héwitt's Seedlings, S.—Large, good quality, firm and fairly prolific.

Lady Jane—Not any.

Leader, P.—Not any.

Martha, P.—Not any.

Michel's Early, S.—First picking June 5. Medium size, fair quality, fairly productive, firm.

Monadnox, S.—Not any.

Mrs. Cleveland, P.—First picking June 10. Large size, vigorous, good quality, productive, not very firm.

Mt. Holyoké, S.—First picking June 10. Large, plants vigorous, quality good, fairly productive, firm.

Parker Earl, P.—First picking June 11. Medium size, fair quality, fairly productive, firm.

Pearl, S.—Not any.

Phillips Seedlings, S.—First picking June 13. Large, good quality. Firm, not very productive.

Plow City—Not any.

Princeton, P.—Small, good quality. Firm, not very productive.

Sanders, S.—First picking June 13. Medium size, fair quality. Soft, fairly prolific.

Shuster's Gem, S.—First picking June 12. Large, quality good, fairly prolific, not very firm.

Smith's Seedling—Not any.

Southand's, S.—First picking June 13. Medium size, rather soft, and not very many berries.

Standard—Not any.

Van Deman, S.—First picking June 11. Medium size, good quality, fairly prolific, firm.

Warfield, P.—First picking June 12. Fair size, good quality, productive and firm.

Westlawn, P.—June 12 first picking, small, poor quality, very few berries.

Yankee Doodle, P.—First picking June 14, small, firm, and of fair quality, very few berries.

Barton's Eclipse and Beaverly were the most productive of all the strawberries.

#### Expenses.

Work .....	\$12 00
Express, postage and twine.....	3 08
Rent .....	15 00
	<hr/>
Total .....	\$30 08

To Prof. E. S. Goff:—Herewith I submit report of Hill Crest experiment or trial station for 1895.

The following fruit trees were added to the trial orchard:

Two Patton's Greening apple; two Eicke apple; two Green Streak apple; two Dye House cherry; two Vermont pear.

The following apple trees planted in 1891 bore fruit: Yellow Transparent, Hoadley, Baraboo Newell, McMahan, Windsor Chief, Scott's Winter. The Yellow Transparent trees blighted considerably. Baraboo is evidently a seedling of Duchess, but may be a little later, and seems to be in every way a good tree. Hoadley is likewise a Duchess style of apple, but apparently later in season. Scott's Winter trees are very handsome in shape and style of growth, and the fruit was much larger than that grown the previous year. As there seems to be little doubt of its hardiness it certainly promises to be valuable as a late keeping apple for Wisconsin. While Windsor Chief is not so good an orchard tree in shape and



style of growth, it bore nicely of what I should think good keeping, winter apples.

Rockford plum bore a few specimens, and I was very much surprised to find the fruit very different from the native or American plums heretofore fruited by us. The style of flesh and appearance of the plum is very much like Lombard and the European varieties. Mr. C. G. Patten, of Iowa, writes me that he is sure it is a native and that my observations of its European style of quality corroborates that of others. Perhaps this may mark a new departure in our native plums, and is certainly of interest if not importance. Cheney bore a few specimens of nice size and quality.

There is every indication of many additional varieties of apples, cherries and plums fruiting next season.

The small fruits except a few shrubs have been abandoned at this station. Several kinds of raspberries fruited, but there was nothing to report not heretofore noted.

We still have some gooseberry bushes not yet in fruit that are in good growing order.

For additional varieties of fruit trees that may be tried at this station I would name the following:

Apples—Blushed Calville, Anisette, Lubsk Queen, Rosy Repka, Gipsy Girl, Mallette, Arabskoe, Bognadoff, Sklanka Bognadoff, Aport, Romna Boiken, Winstead Pippin. All of the above can be obtained from Prof. Budd, of Iowa. Harry Kamnpf and Malinda should also be included, while Eureka, Avista and perhaps other Wisconsin sorts, certainly should be.

In pears, Flemish Beauty and Keiffer should be put on the list. In plums, Lombard, Green Gage and several other European varieties should be planted. In cherries, Montgomery, like Gov. Wood, ought to be on the trial list.

Respectfully submitted,

A. L. Hatch.

Cash Account, 1894.

Labor, planting, plowing, etc.....	\$4 50
Express charges.....	2 40
Rent of land.....	6 25
Total .....	\$13 15

## REPORTS OF LOCAL SOCIETIES.

## JANESVILLE HORTICULTURAL SOCIETY.

October 29, 1894.

The twenty-eighth annual report of our Society shows that we have lived to some purpose, and while there is not as much interest taken in the Society as in former years, yet the city shows the effect of our labors.

The Society has held its usual number of meetings, the attendance being up to former years. While no regular program has been given, many pleasant informal discussions on horticulture have taken place. The exhibits at the Rock county and other fairs of this vicinity, made by members of our Society, have been very fine, and the members have taken many premiums, our president, Mr. Geo. J. Kellogg, being very fortunate this year. The annual meeting of the Society was held October 29th, 1894, and the following officers were elected for the ensuing year:

President—Geo. J. Kellogg.

Treasurer—J. B. Whiting.

Secretary—E. B. Heimstreet.

The treasury is in good condition, and all things considered, the Society is in as good shape as it has been for many years past.

E. B. Heimstreet, Secretary.

## WOOD COUNTY HORTICULTURAL SOCIETY.

Centralia, Wis., March 5, 1895.

Mr. A. J. Philips, West Salem, Wis.

Dear Sir:—At our annual meeting the following officers were elected for the ensuing year:

President—A. S. Robinson, Centralia.

Vice President—Peter Brown, Rudolph.

Secretary—N. H. Robinson, Centralia.

Treasurer—Mrs. Wm. S. Miller, Grand Rapids.

Librarian—B. M. Vaughan, Grand Rapids.

## VERNON COUNTY HORTICULTURAL SOCIETY.

Vernon County Horticultural Society held its annual meeting at Viroqua, January 30, 1895.

The officers elected for the ensuing year are as follows:

President—Dr. F. L. Barney.

Vice President—M. V. B. Richards.

Secretary—J. R. Hall.

Treasurer—G. T. Fortun.

Dr. F. L. Barney was elected a delegate to attend the annual meeting of the State Society at Madison, Wis.

The subject for discussion at the next meeting is Soil, Location and Preparation.

J. R. Hall, Secretary.

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## CALUMET COUNTY HORTICULTURAL SOCIETY.

We have held during the last year five meetings.

Our numbers are few, but considerable interest has been taken and the meetings have been entertaining and instructive. The officers are:

President—E. S. West, Chilton.

Vice President—C. P. Crawford, Hilbert.

Secretary—G. A. Cressy, Hilbert.

Treasurer—J. S. Dixon, Hilbert.

G. A. Cressy, Secretary.

Dated January 14, 1895.

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## SAUK COUNTY HORTICULTURAL SOCIETY.

The year 1894 was a prosperous and profitable year with this Society. The year closed with an annual membership of forty, the bills all paid, and a balance in the treasury.

In February we held a meeting of two half-day sessions and one evening session. Among the questions discussed were, Shall we Spray? by Wm. Toole; Small Fruit Culture, by R. J. Coe; Best Varieties of Russian Apples, by A. G. Tuttle; Horticulture in the Short Course, by L. H. Adams, of Madison.

In May the Society held a wild flower show. Nearly one hundred and fifty entries of flowers were made, and the audience

was so large that late-comers could not find even standing room.

The officers for 1895 are:

President—Wm. Toole.

Vice President—Franklin Johnson.

Secretary—Mrs. Hugh Kelly.

Treasurer—Mrs. Marriott.

Mrs. Franklin Johnson, Secretary.

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#### EAU CLAIRE COUNTY HORTICULTURAL SOCIETY.

This Society numbers thirty-six active members. Nine regular meetings were held during the year.

The subject of Fruit Exchange has been somewhat discussed and it is to be hoped it will materialize.

The principal fruits grown in this section are strawberries, raspberries and blackberries. The two seasons past have been discouraging to the fruit grower, but we live in hopes of a change for the better.

The officers are:

President—R. Elwell.

Vice President—James Bonell.

Secretary—J. R. Pierce.

Treasurer—Mrs. Anna Lufkin.

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#### REPORT OF RIPON HORTICULTURAL SOCIETY.

The annual meeting of this Society was held January 16, 1895.

Fruit growing in this vicinity is confined to small fruits. But few apples are grown.

The severe drouth of the summer of 1894 caused great loss to the growers of berries.

The winter thus far has been favorable for trees and berries. The coldest weather to date has been 18 degrees below zero.

Following is a list of officers for 1895:

President—W. T. Innis.

Vice President—R. O. Goodrich.

Treasurer—E. Woodruff.

Secretary—A. S. Crooker.

Mr. W. T. Innis was chosen as delegate to represent our Society at the annual meeting of the state Society, February 5th to 8th.

A. S. Crooker, Secretary.

Dated Ripon, Wis., Jan. 31, 1895.

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#### REPORT OF GRAND CHUTE HORTICULTURAL SOCIETY.

The season of 1894 will long be remembered as especially trying to the horticulturists in this vicinity. But indomitable energy and the best methods which could be obtained have done much towards gaining the victory over drouth, heat, bugs, blights, etc. The fiercer the enemies and the more of them, the harder the battle for the horticulturists of Grand Chute. But it is evident they are not discouraged, for there seems to be an increase in growing small fruits, although the yield is much lighter than last year. Early or fall apples were raised in abundance, but winter apples are almost unknown at this time.

Garden vegetables have fairly outdone themselves. Gardeners have been obliged to go elsewhere to market them, although the home market, strengthened by the pickle factory in this vicinity, has served us well.

Our meetings are held quarterly and the average attendance is about sixty. The strawberry festival held the first Thursday of July was largely attended and proved to be very interesting. The flowers added much to the beauty of the tables, which were spread under a large awning on the lawn, and there was a goodly supply of both strawberries and raspberries, although the season of the former had come and gone, while our meeting was about one week in advance of the raspberry season.

C. E. Bushnell, our delegate to the state horticultural meeting at Madison in June, gave a detailed account of the proceedings for the benefit of those who were unable to attend.

At our last annual meeting Mr. J. Finkle was chosen delegate to the next state meeting at Madison, February 5, 1895.

The large number present at our last meeting and the interest evinced by all, indicate the present and prospective

prosperity of our Society. Farmers and horticulturists of this vicinity do not meet too often, and such occasions afford opportunities for social greetings and exchange of views on many subjects, as well as those which concern our occupation. Such opportunities should be, and evidently are appreciated. The advantages derived from such gatherings are too obvious to require any description in detail. They may be reckoned with truth as coming under the heads of educational, social and financial.

An institution like this we are justly proud of, and we hope to maintain its usefulness, not only by our own exertions, but any favor shown us outside of our own circle will be duly appreciated.

At each meeting we have two essayists, previously appointed, and occasionally original papers are read and opportunity given for discussion.

Balloting for officers for the coming year resulted in the election of the following:

President—Charles Abbott.

Vice President—M. B. Johnston.

Treasurer—A. A. Winslow.

Secretary—Mrs. C. E. Bushnell.

Mrs. C. E. Bushnell, Secretary.

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#### EAST FREEDOM HORTICULTURAL SOCIETY:

The East Freedom Horticultural Society at its annual meeting, January 18, 1895, elected the following officers:

President—Herman Voll, North Freedom, Sauk county, Wis.

Vice President—Chas. Shellenberger, North Freedom, Sauk county, Wis.

Treasurer—August Zochert, Baraboo, Wis.

Secretary—Chas. Hirschinger, Baraboo, Wis.

Executive Committee—Leonard Roser, Frank Voll and Fred Bower.

Herman Voll was elected delegate to the State Horticultural Society, and Charles Hirschinger, alternate.

This Society now has thirty-six members; and quite an interest is being taken in the meetings, which are now held every two weeks.

Charles Hirschinger, Secretary,  
Baraboo, Wis.

## REPORT OF SPARTA HORTICULTURAL SOCIETY, 1894 AND 1895.

Two meetings were held during the past year. The first was a special business meeting called at the city hall May 23d, 1894. The object of this meeting was to formulate plans for the handling of what promised to be the largest fruit crop ever raised in this vicinity.

After some discussion it was decided to form an association separate from the Horticultural Society for this purpose. A committee was accordingly appointed to draft a constitution, and the meeting adjourned to May 26th, when a constitution was adopted and officers elected. The benefits derived from this association soon became apparent in better facilities secured for shipping the crop, and in removing the tendency which had existed among growers to cut prices. The subsequent cutting short of the crop by frost and drought somewhat curtailed the usefulness of this association this season, but the fruit acreage is being rapidly increased and its future usefulness is apparent.

The annual meeting was held January 26th, 1895, and the following officers elected:

President—L. S. Fisher.

Vice President—E. A. Richardson.

Secretary—W. H. Hanchett.

Treasurer—Ed. Babcock.

Chairman Executive Committee—G. A. Freeman.

Delegates to winter meeting of State Society—L. S. Fisher, Ed. Babcock, Z. K. Jewett, Jesse D. Sarles, John Herbst, Wm. Hanchett.

Wm. H. Hanchett, Secretary.

## OMRO HORTICULTURAL SOCIETY.

We have a membership of sixty-eight, some were new members during 1894. This Society has held twelve meetings the past year, which have been well attended, and we find that we are not only benefited in the horticulture and floriculture work, but socially. We had in connection with our society a chrysanthemum show in November, 1894, which was a grand success. It was our first attempt and was beyond our expectation.

Mrs. Jos. D. Treleven, Secretary.

## THORP HORTICULTURAL SOCIETY.

Thorp, Clark Co., Wis., Jan. 15, 1895.

A. J. Philips, Esq., West Salem, Wis.

Dear Sir:—Our horticultural society is still in existence, and to an outsider it might seem that we have not accomplished much. But in the Society there is a growing desire for more information in horticulture and agriculture. Several of the members set quite a number of fruit trees and other shrubbery. Last year the members decided to plant a larger acreage of potatoes, and although the yield was very short, yet the parties that did it were well paid for their labor. This year we think of offering a premium for the largest yield per acre of potatoes, oats and other grains and small fruits.

At our last meeting papers were read on the benefits derived and to be derived from farmers' institutes. At our last annual meeting the following officers were elected:

President—Thomas Dunn.

Vice President—J. J. Hayes.

Treasurer—B. J. Brown.

Secretary—S. Gorman.

Yours respectfully,

S. Gorman, Secretary.

## REPORT OF DELEGATE FROM RUSHFORD.

The Rushford Horticultural and Improvement Society, at its first regular meeting in January, elected the following members as officers for the year 1895:

President—W. Carley.

Vice President—Mrs. M. Penniman.

Secretary—H. H. G. Bradt.

Treasurer—Mrs. J. M. Franklin.

Executive Committee—A. A. Parsons, T. E. Loope, P. Beaulin.

Delegate to annual meeting of State Society at Madison, A. A. Parsons.

Mr. President, Officers and Members of the State Horticultural Society:—My report on the fruit crop of 1894, and conditions at present time is as follows:

Apples set for a large crop, except some varieties that were injured by severe storm of sleet and frost on May 21st to 27th.



Those not so injured started well and grew until June 15th, then commenced dropping off, resulting in a loss of one-half of the crop. Cherries, almost a failure, owing to storm and frost. Strawberries, where protected by mulch, wintered well and produced about two-thirds of a crop, caused by drouth in June. Warfield fertilized by Saunders and Enhance doing best. Raspberries, red, wintered fairly well, and budded for a large crop, but owing to aforementioned storm with high wind bruising fruit buds, causing a loss of one-half of the crop. Marlboro and Brandywine doing best. Black raspberries where not covered too deep wintered well and gave a good crop. Gregg and Nemeha, best. Blackberries where properly laid down and covered wintered well and blossomed very full, but owing to the excessive drouth in August, they produced only one-quarter of a crop. Ancient Britons best. Currants a good crop. Gooseberries good. Downing and White Smith best. Grapes are a good crop. Worden, Concord, Brighton, Delaware, Niagara and Diamond best.

Prices on all fruit extremely good, except on grapes.

There has been a loss of five hundred fruit trees, three hundred from mice and rabbits, one hundred from borers, ten from sun-scald, thirty failed to grow, balance from blight. Mostly Wealthy. Blight did more damage to apple trees in southern locations and where planted with corn. Wealthy, Fameuse, Alexander being affected most, in the order named. Those doing best were Haas, McMahan, Duchess, Hibernial, Longfield and Utter's Red.

Spraying was not practiced as much as it ought to have been. Where properly done a decided benefit could be seen.

The prospect for a crop in 1895 on apples is poor, cherries, good; strawberries, poor; raspberries, fair; blackberries, good; currants, good; gooseberries, good; gapes, good.

There will be a small increase over the loss on apple trees by planting in spring of 1895. There will be a net increase of eight acres in planting fifteen acres of small fruit, mostly of raspberries. There is an increased amount of interest being taken in horticulture. There will be better culture given to all fruit and better adapted varieties planted. Our state reports are more eagerly sought for, and more carefully read by

the people. On the whole, we are gradually gaining toward more successful horticulture.

A. A. Parsons, Delegate,  
Eureka, Wis.

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### FREMONT HORTICULTURAL SOCIETY.

Fremont, Wis., January 12th, 1895.

This Society met at the house of Harvey Randle, in Fremont, for the election of officers, and the discussion of questions connected with horticulture. The meeting was called to order by President Eaton.

The following officers were chosen for the ensuing year:

President—C. F. Eaton.

Vice President—Paul Schiesser.

Secretary—J. G. Hildebrand.

Treasurer—Jacob Steiger.

Executive Committee—A. Randle, Dr. Stanton, John Ratsburg.

Wm. Springer was elected delegate to attend the convention of the State Society. After having a good time, the Society adjourned. The next meeting is to be called by the committee sometime during the summer.

J. G. Hildebrand, Secretary.

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### WAUPACA COUNTY HORTICULTURAL SOCIETY.

The Waupaca County Horticultural Society, at its annual meeting, January 26th, 1895, elected the following officers:

President—Hon. E. W. Brawn.

Vice President—J. Jenney.

Treasurer—A. Smith.

Secretary—Fred A. Harden.

Executive Committee—Wm. Springer, Wm. Masters and J. Jenney.

H. Gipson was elected delegate to State Horticultural Society, and J. Jenney, alternate.

There was a good attendance and a lively interest taken by all present.

Fred A. Harden, Secretary,  
Weyauwega, Wis.

## STRAWBERRIES.

By Geo. J. Kellogg, February 1st, 1895.

Mr. President, Ladies and Gentlemen—Sometimes we unlearn more in a year than we really learn. One of the lessons of the past season of frosts and drouths is a depletion, in many parts of the country, of the pocketbook. Against the elements we may not successfully contend. Even irrigation may be overdone in time of drouth, as at Madison station last June, just before a heavy rain. We may very materially aid the strawberry plantations by timely mulch, and other small fruits not only by mulch, but by constant shallow cultivation; do the best we can, frosts and drouth will tell. But, because of forty failures, is it any use to lie down in the furrow and die? Up and at it. Earnest, persistent, thoughtful, careful effort will succeed along any difficult beaten path.

A few notes on varieties may not be out of place. The longer I grow strawberries, the more I know about kinds, the more uncertain it is to form correct conclusions until three to five years of trial. After three years of careful comparison, with good cultivation, we ought to discard an unproductive variety. I will not go into an extensive list of the seventy-five kinds we are growing; if we could reduce the best kinds to four or even to eight, I should be much pleased. There is nothing yet that comes anywhere near perfection. Bederwood is the only staminate named by Minnesota that I can recommend, and this is going by rust, unless we can spray to prevent; Enhance, late, although often ill-shapen and rather tart, has more dollars and bushels than anything else we have grown for five years, of the perfect flowering kinds.

Gandy gives a few pickings of large, nice berries about in the flush of the crop, but does not prolong the season; is not a late berry, except that it starts late. Jessie and Hoard, twin brothers, are retained for special soils and locations only. Lovett is valuable for pollen and fruit; season medium early. Leader is one of the best tried new varieties. Parker Earle overdoes the fruiting; we have never been able to sustain the

plant to perfect its entire crop; I believe it can be done by heavy manure mulch applied early in April. Rio gave wonderful promise last spring, but frost took all but the first three pickings of the earliest fruitage. Southard is a paying variety for mid-season. Splendid, from three years' trial. I know nothing better. Saunders is another good kind very near the front. Van Deman did just like Rio, made the best of promises, but only matured the early settings. Woolverton, we count among the best.

Of these fourteen varieties, we must retain at least four to head the list, Enhance, Saunders, Splendid and Woolverton. Of pistillates, there is a pretty general agreement that Crescent, Haverland, Warfield and Bubach stand as best four for dollars and cents. Occasionally Bubach fails, and from the best sources of information I think Greenville will take its place and be more profitable. Eureka is profitable as a late berry, but it is by no means perfection. Edgar Queen is very satisfactory. Eclipse should have a place with the first four. Princess for near market is profitable. Stayman's No. 1, will pay among the best. Timbrell, we fear, will prove unprofitable in many locations. Shuster's Gem we prize and hope it will disappoint no one.

While we have many varieties that have wonderful qualities and some that are novelties, we will not go beyond this list of twenty-six, nor would we advise the average farmer to go beyond the best eight we have named, but it is just as easy for a farmer to plant early, medium and late as to plant all of one season. Of the novelties for home use it may be well to try the Shuckless, but because anyone offers a new variety at \$10 per dozen, like Marshall, it is no sign of its value, except to the originator. It is well that new varieties are protected; but it is of vastly more consequence that the public be also protected.

Every new fruit should be put into the hands of our best trial stations from east to west, and without their careful endorsement the community should have no confidence in them.

Soil, climate and location are great factors in adaptation and success. With us, after four years' faithful trial, Michel's Early is not worth a cent an acre. There are doubtless loca-

tions where every variety foisted on the public has some reputation. I know of no way to find out the best of the wonderful varieties without testing them, and just here is where our trial stations should step in and save us millions of dollars by their outspoken, fearless, commendation or condemnation of all kinds of new fruits.

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### FRUIT OBSERVATIONS IN NORTHERN WISCONSIN.

By Geo. J. Kellogg, February 1st, 1895.

From our notes and observations in St. Croix, Pierce, Dunn and Pepin counties, we find that where Duchess, Hislop and Transcendent were a success ten years ago, they are now utterly ruined by fire-blight and black-heart. One man offered \$50 for an apple tree that would keep healthy and bear a bushel of apples in St. Croix county. They reported that there was not a healthy apple tree in that county, and yet they have white oak timber ridges and clay soil. In Dunn county one man assured me that the thermometer had registered 70 degrees below zero, a few years since, but I could not find record below 60. The apple and crab apple all became subject to black-heart and in a few years died. Small fruits were reported a success except where drouth and frost prevailed, winter protection being necessary to the tips of raspberries and blackberries. Grapes, in favorable locations, seem profitable and give good returns, if proper selection of varieties. The apple and the crab seem a failure. A few instances of success could be learned, but of no lasting promise. I think if any part of our state needs a trial station it is just such counties as these where it seems impossible to raise even the Duchess and crabs; and while I did not try to find a location or a man willing to care of a tree station, I think I did find such a man who is one of the most energetic, wide-awake young men I have met in the state, and from his systematic push in his private business, I think I could vouch for a station under his care at very little expense.

As a member of the committee on trial stations I would state that each of the three stations as now established, only have a local application to Wisconsin horticulture and are of no special value to the state at large. Waupaca is a favored county for fruit; Richland county station is too far from any railway, and is not doing as much, even in that location, as a private enterprise, while the station at Sparta, I am creditably informed, is doing nothing compared to private enterprise and will never be a success in tree fruits. I would recommend that the subject of trial stations be referred to the executive and trial station committees with power to close out either or all of the three stations and establish any that might be demanded for the advancement of Wisconsin horticulture.

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#### THE LOUDON RASPBERRY.

We, the undersigned, as committees of the Wisconsin State Horticultural Society and of the Minnesota State Horticultural Society, certify that we have on this 12th day of July, 1895, visited and carefully examined the raspberry plantations upon the grounds of F. W. Loudon, Janesville, Wis., and freely certify that the new seedling variety originated by him, in the year 1880, and bearing his name, is the most promising sucker variety of red raspberry that we have ever seen, for productiveness, size, quality, flavor, firmness of fruit, and hardiness, vigor and health of plant.

John S. Harris, Pomologist, Minn.

Chas. W. Sampson, Small-fruit Grower, Minn.

L. G. Kellogg, Pres. W. S. H. Soc.

A. J. Philips, Sec. W. S. H. Soc.

R. J. Coe, Treas. W. S. H. Soc.

D. C. Converse, Small-fruit Grower, Wis.

Geo. J. Kellogg, Small-fruit Grower, Wis.

## REPORT OF COMMITTEE ON FIELD TRIALS.

We, the committee on field trials, would respectfully report that we have considered the matter, and have selected the following subjects, and have selected the following names of persons suitable to take those experiments and ask for volunteers:

## FIELD TRIALS AND INVESTIGATIONS.

1. Observations on fruit branches, buds, leaves and growth of raspberries and blackberries—Hanchett, Tobey, C. A. Hatch, France.

2. Removal of bearing canes of raspberries and blackberries during the growing season, to determine the effect upon the new growth—Will Hanchett, J. L. Herbst, C. A. Hatch, J. F. Case, E. C. Alsmeyer.

3. Nitrate of soda upon fruits—J. S. Stickney, E. J. Scofield, E. S. Goff, J. D. Searles, R. J. Coe.

4. Wood ashes upon strawberries with special reference to varieties—Bingham, L. G. Kellogg, Geo. J. Kellogg, J. F. Case, N. H. Robinson, J. D. Searles.

5. Trapping codling moths and curculio by lights, liquids and traps—Tuttle, Geo. J. Kellogg, A. L. Hatch.

6. Strawberries in hills; also with four new plants as runners—Geo. J. Kellogg, R. J. Coe, J. D. Searles, F. L. Barney.

7. Pinching vs. not pinching on new growth of raspberries and blackberries—E. S. Goff, C. A. Hatch, Bingham, R. J. Coe, F. H. Chappel, J. F. Case.

We recommend that these trials be made as practicable as possible and the reports be made short and to the point, and that they shall include methods and results rather than history and reminiscence.

Respectfully submitted,

N. E. France,  
J. S. Stickney,  
A. L. Hatch,  
Committee.

## REPORT OF COMMITTEE ON TRIAL STATIONS.

To the President and Members of the Wisconsin State Horticultural Society:—

Your committee on trial stations, having duly considered the subjects entrusted to them, believing that our present trial stations, owing to their respective locations, are not likely to prove safe guides to the selection of varieties of tree fruits for the more trying localities in our state, would respectfully offer the following recommendations:

1. That no further planting be done at any of the three trial stations now under the control of this Society, and with the exception of such trees or plants as it seems desirable to remove, the stock now growing on these stations be allowed to revert to the respective owners of the land.

2. That the sum of five dollars per year shall be paid by this Society to such of the owners of the land now occupied by these stations, as shall agree in writing to permit all fruit trees left on such land to remain standing so long as they continue to thrive; to take reasonably good care of the same, and to present a written report as to the success or failure of each variety at the annual winter meeting of this Society, such sum to become due at the acceptance of said report by this Society, which Society reserves the right to procure samples of fruit or cions from said trees at any time, and to cancel this engagement whenever it seems desirable so to do.

3. That one new trial station be established in some locality in the northern part of our state where soil and site are favorable for the growth of tree fruits; such location to be selected by a committee to be appointed at this meeting, of which the president and secretary of this Society shall be members *ex-officio*, who shall be empowered to acquire permanent title to not less than ten, nor more than twenty acres of land for this purpose, and to make necessary arrangements for the planting and care of such land, and to select such varieties as shall seem to them most likely to yield valuable results. Provided, that nothing shall be constructed to interfere with, or abrogate existing contracts.



B. S. Hoxie—I move the adoption of this report.

A. L. Hatch—There are three signed, sealed and delivered contracts with regard to these trial stations. I hold one between this Society and me, the contract does not expire until next spring. I have culmbered my grounds. There are some things that you haven't results from and you ought to leave them until you get results. It is no advantage to me to have the station there. I think you had better vote to leave the matter with your executive board.

B. S. Hoxie—We make provision if we adopt this report to pay five dollars per year for the use of the land for the trees. We as a society must live up to those contracts.

R. J. Coe—I do not think this committee contemplated annulling those contracts in the least, but they do not recommend any more planting there.

Geo. J. Kellogg—We have had three or four meetings and the impressions were that the contracts run out the coming spring, and that we had better not have any more planting, but reserve the ground for the trees.

President—The committee has spent a good deal of time over this report and I think we ought to dispose of it here. Providing these contracts expire this spring, would this report be satisfactory to you, Mr. Hatch?

A. L. Hatch—I would be in favor of your keeping it up until you get some further results.

President—Would the report be satisfactory to you, Mr. Harden, providing five dollars be paid for reporting to this society?

Fred Harden—Yes, it would, provided no damage would be done to the trees.

A. G. Tuttle—I do not think for market purposes, the trees on that land would be worth anything at all.

Geo. J. Kellogg—I think it is necessary that we take some action at this meeting; as the contracts read, they are five years, or longer, and if action is not taken it will run longer.

Franklin Johnson—I have a good deal of confidence in the report of the committee and I call for the question.

Report adopted.

## REPORT OF COMMITTEE ON PLANT DISTRIBUTION.

To the President and Members of the State Horticultural Society:—

Your committee to whom was referred the question of the distribution of plants for the year 1895, would respectfully recommend:

That the distribution of plants be continued for the coming year under the patronage of the State Society, and that all stationery used shall be so printed that is used in correspondence.

R. J. Coe, Committee.

Moved to adopt.

Geo. J. Kellogg—There has been a good many plans and conflicting desires brought before this committee. If plants could be furnished and distributed from one center, it would be a good thing for us to take hold of. I do not see that we have received any more members to our Society for this distribution. But if plants could be furnished so they would be sent out in that way, I would be in favor of it.

A. L. Hatch—The objection that has been made to the plant distribution ought to be eliminated if possible. Let those who wish to furnish, put up their plants ready for mailing, sending them to the corresponding secretary for him to send out when he is ready. I do not think there would be any objection to saying that these plants were furnished by such growers. I do not think we should compromise the Society in any way. I do not think we should put in with those plants, circulars, catalogues or anything of the kind. Require those who put up plants to put them in certain packages sent to the corresponding secretary. Unless more than three of the growers contribute, I would be in favor of discontinuing it.

Geo. J. Kellogg—There is one objection to that plan. It is better to mail them direct than to send them to the corresponding secretary to be remailed.

B. S. Hoxie—I see no harm, nor impropriety if three or four contribute, but I do think the plants should be sent out by the Society. A little printed slip could go with them, with the

name of the grower, but let the printed matter emanate from the Society.

President—I would suggest that it be imperative that the grower put on his name and address so that the identity of the place where the plants come from be not lost to the Society.

J. L. Herbst—There seems to be an impression among a few of our members that Mr. Boynton did not send out any printed matter. I know Mr. Thayer did not, because I sent out the plants.

Franklin Johnson—I think the question to be considered is whether it pays this Society, and not whether it is an advantage to any individual member.

M. Pierce—I do not think the State Horticultural Society should have any interest in this, whatever, because it is not in the business. I think every nurseryman that sells plants should have the privilege of sending out those plants.

President—How many are there who will furnish plants? We will take the names.

Thayer fruit farms, 10,000 plants; J. D. Searles, 1,000 plants; R. J. Coe, 500 packages; Pres. Kellogg, 1,000 or 2,000 Marlboro; Fred Hanchett, 500 packages raspberries; Parsons and Loup, 500 packages Cuthbert.

R. J. Coe—I will not send any poor plants, they will be all good varieties. I will put six strawberries and three raspberries in a package.

Report adopted.

J. D. Searles—Why can you not get your printed matter, as you do your stationery, for the corresponding secretary to send out from all parts of the state from the grower? I think the idea is a good one. I know that everything will be carried on as straight as a string, if carried on by the corresponding secretary.

D. C. Converse—The solution of this whole matter can be found at the university. We own that experimental farm as much as any one does. It seems to me a small plat of ground could be taken there and plants grown for this distribution under the supervision of Prof. Goff.

Franklin Johnson—The suggestion of Mr. Converse is a good

one, but we would not be in a position to do anything this spring if we adopted it.

Moved and carried that the details be left with the corresponding secretary.

A. L. Collman—I feel as though I had a little interest in this state, when I was a little boy my father lived in Milwaukee, and so I feel interested in this state. I have a very valuable cross of an apple. I sent a specimen to Washington to the Pomological Society and they named it the Collman. It is a good deal better looking than I am. It is colored higher than the Jonathan. I have one or two seedlings of my crossing that I think are very good, I will be glad to donate them to this society if you will accept them for trial.

Geo. J. Kellogg—I move we accept Mr. Collman's offer with thanks. Carried.

M. Pierce—I am propagating an apple from a tree that has stood for forty years; it is top grafted on the Lieby, and I will donate some of them to this society

Geo. J. Kellogg—I move they be accepted with thanks. Carried.

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#### REPORT OF COMMITTEE ON RESOLUTIONS.

Resolved, that this Society heartily endorses the efforts being made by the Wisconsin Academy of Science to secure the completion of the geological survey of our state, and that we recommend the appropriation by our present legislature of such a sum as may be needed for this purpose.

Resolved, that the fruit, tree and shrub lists of this Society be published in catalogue form in our transactions on a plan similar to that of the American Pomological Society.

Whereas, the by-laws governing the duties of the secretary of this society does not require him to edit the transactions and,

Whereas, there are some papers read at our meetings that are not in accordance with the experience of practical horticulturists, and are misleading to the public.

Resolved, that by-law III be so amended as to require the secretary to edit all subject matter for the volume of transactions and correct the proof of the same.

Resolved, that in the death of S. I. Freeborn, Richland Center, this Society has lost a very valuable member, and horticulture has sustained a great loss.

Resolved, that a suitable memorial be prepared for publication, in our next volume, concerning Mr. Freeborn and his work in fruit culture.

Resolved, that a committee be appointed to investigate his fruit farm and report to this Society. Also that a copy of these resolutions be forwarded to his family.

Whereas, we recognize in the Northwestern Greening a Wisconsin seedling of great promise in some portions of our state, and in testimony of our appreciation of the efforts of E. W. Daniels, Auroraville, in bringing this apple before the public.

Resolved, that E. W. Daniels be enrolled as "Honorary Life Member" of our State Horticultural Society, and the secretary be instructed to send him a copy of these resolutions and the greetings of the society.

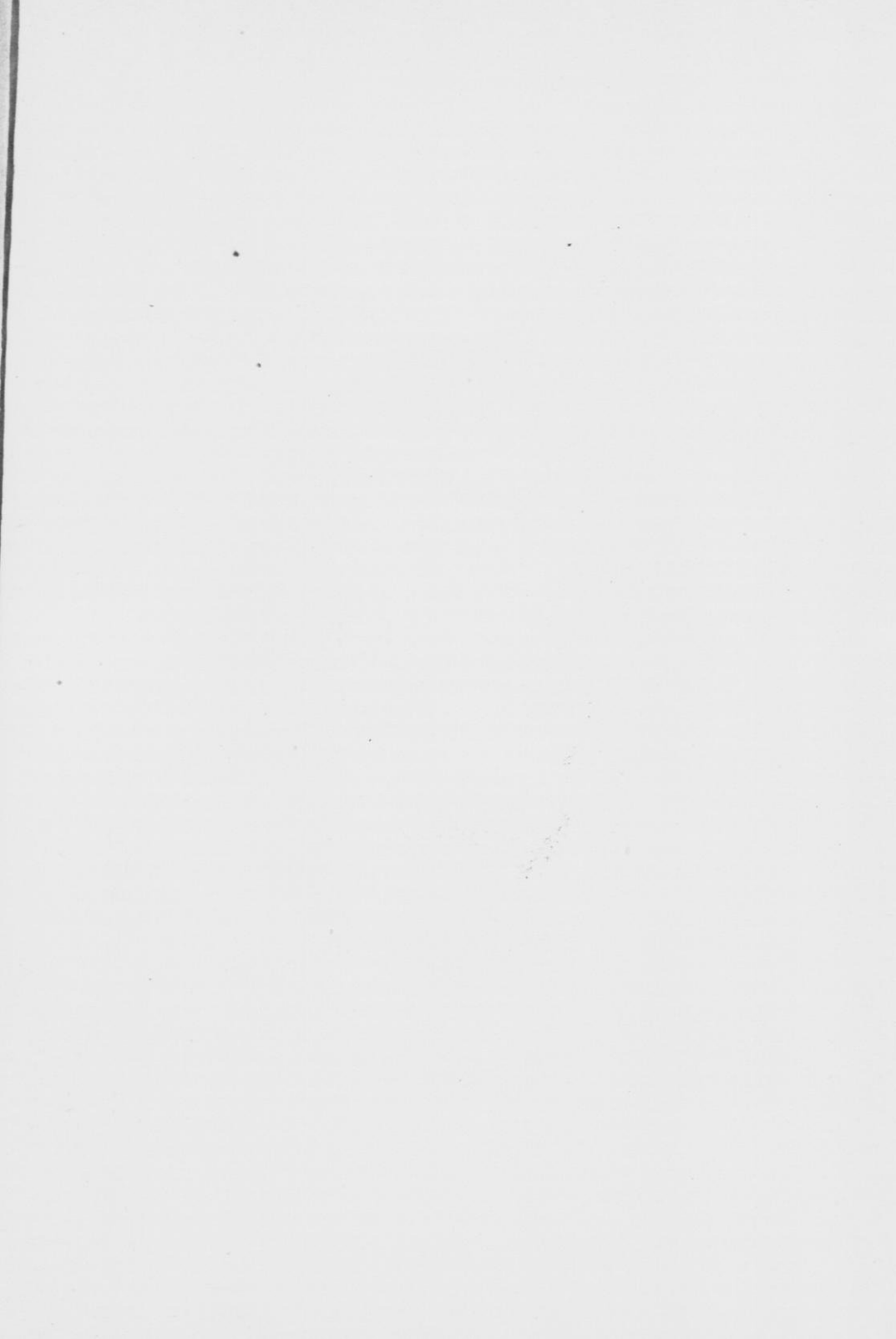
Resolved, that the Wisconsin State Horticultural Society tender thanks to the senate for the courtesy in extending the use of the senate chamber for the Wednesday and Thursday evening meetings.

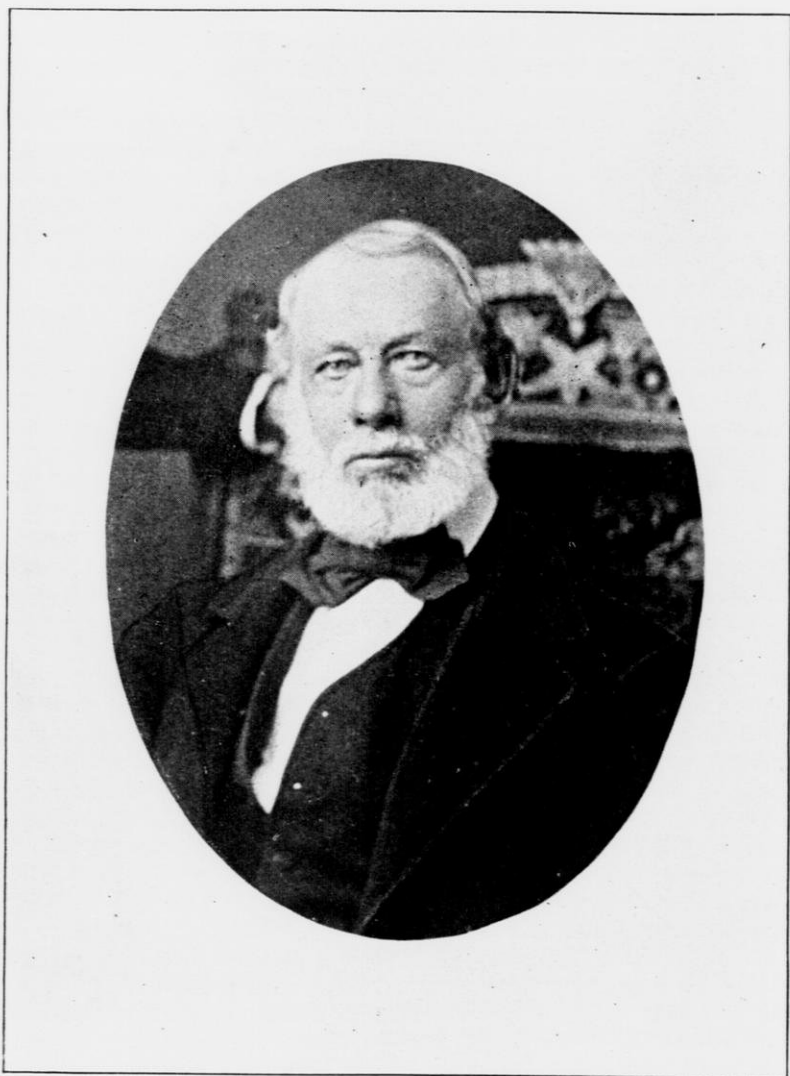
Resolved, that a vote of thanks be extended, with a copy of this resolution, to the superintendent of public property for the use of room 100 for our meeting, and for other favors shown us.

Resolved, that the thanks of this Society are due and are hereby tendered to Mrs. Crouch, Baraboo, for the very fine oil paintings which she sent to ornament the head of the tables of our fruit exhibit, and we recommend that the Society award a premium of five dollars for the exhibit.

Vie H. Campbell,  
A. L. Hatch,  
D. C. Converse,  
Committee.

Adopted.





EPHRAIM WILCOX.

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## In Memoriam.

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Ephraim Wilcox.

G. J. Freeborn.

George V. Peffer.

O. C. Cook.

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## MEMORIAL OF EPHRAIM WILCOX.

A. J. Philips, West Salem.

In memory of Ephraim Wilcox.

He was born in Saratoga Co., N. Y., in 1812, and died at La Crosse November 12th, 1894. He lived with his estimable wife fifty-nine years, she dying in 1892. He left a family of seven children. Since 1862 he has lived in Trempealeau and La Crosse counties, being engaged in horticultural pursuits all the time. He founded the nurseries named, Mount Hope, by J. S. Stickney, in 1878. He was an honest man, true to his convictions of right, and wonderful ambition and perseverance. He spared no time, and used his means liberally, to make fruit growing in the north a success, and many who are left will remember his wise counsels. He was a strong abolitionist before the war and as determined a prohibitionist since that time. At the time of his death he was a life member of both the Wisconsin and Minnesota Horticultural Societies.

His was a well spent life. I attended his golden wedding nine years before his death, and one noticeable feature of the occasion was that those who had known him longest respected him the most. Before leaving Trempealeau he donated the evergreens to the ladies' society to beautify and adorn their village cemetery. And the sight of those now tall trees will always be a reminder of the life and character of the pair that now rest there, after a long and pleasant life. He was one of the first to advocate top working to increase hardiness in apple trees, and many who once thought his teachings of little value, have now learned that Uncle Wilcox was "right and verily he builded better than he knew," for this plan of growing trees is becoming very popular.

The writer has spent many happy hours in his company, and has growing in the orchard many monuments to his memory, and can truly say in conclusion that he believes that the world is better for Uncle Wilcox having lived in it.

## S. I. FREEBORN.

A. L. Hatch.

Mr. S. I. Freeborn, born in Niagara Co., N. Y., April 30th, 1833, died at Richland Center, Wis., February 5th, 1895.

Mr. Freeborn was one of the most enthusiastic fruit growers of southwestern Wisconsin. He began the nursery business at Ithaca, in Richland county, in 1868, which he continued more or less until the time of his death. On his farm in the valley considerable small fruits were grown and on his ridge farm he planted a large orchard and vineyard to which he was constantly adding new and hardy kinds from all sources. His collection of Russian apples, begun in 1870, was one of the largest in Wisconsin, and his paper before our Society a few years ago on this subject is one of the most modestly truthful and valuable of any in our records. Besides his older orchard of one hundred kinds of apples in bearing, he top grafted and planted two hundred varieties in orchard as a practical trial of other kinds. Several kinds of pears, plums and cherries are in his orchard, and bearing considerable fruit each year. His vineyard embraces about sixty varieties and produces several tons of grapes each season.

It was Mr. Freeborn's practice for several years to plant the seed from a peck of some one kind of good, hardy apple grown near other good kinds. In this way he produced a lot of what may be termed "pedigree seedlings," that altogether were very hopeful and promising. No horticultural work engaged his interest more than this, and during his last sickness he expressed regret that he could not be spared to carry on that work that promises so much for the future horticulturist.

While more extensively engaged in the nursery business, his firm introduced, many years ago, the McMahan apple, which stands today as one of the rugged sorts of the orchard, and a blessing to Wisconsin fruit culture.

Mr. Freeborn was a cheerful contributor to the display of fruit by our Society at the world's fair in Chicago, and his beautiful products added very materially to the credit of our own

state. He was also an extensive beekeeper, having had, one season, of his own producing, twenty-two and a half tons of honey—the largest crop ever secured we think by one person in Wisconsin.

Although gone from among us, his work and influence still live and will leave its impress upon our horticulture for time to come, for like many other earnest workers in the field of fruit culture his work tended to cheapen fruit to many people, and to bring into prominence one of the best resources in the great business of home making.

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A TRIBUTE TO THE MEMORY OF MY FRIEND,  
GEORGE P. PEFFER.

By H. E. Van Deman.

George P. Peffer died September 11th, 1895, aged 73 years. He was one of the pioneers of Waukesha county, living there since 1842. As a horticulturist he had a state and a national reputation. His counsels in our meetings were always listened to with interest. Having been asked by his family to prepare his obituary, I will add some words of remembrance sent by his friend, Hon. H. E. Van Deman, of Parksley, Virginia.

A. J. Phillips, Secretary.

As we contemplate the death of our venerable friend, George P. Peffer, it may be truly said, that one of the pillars of American horticulture has fallen. He was one of the pioneers of this great industry in the northwest, having moved from Pennsylvania to Wisconsin when a very young man. He there soon developed that inborn love for gardening and general fruit culture which characterized his whole life; although he for many years followed carpentering as a trade. His love of horticulture led him to plant all varieties that were likely to prove suitable to the climate of his home at Pewaukee. He also planted seeds of the most promising fruits, and originated many new varieties, some of which are today scattered all over the northern part of this continent, and are being tested





S. I. FREEBORN.

in foreign lands. The Pewaukee apple is the most conspicuous of these seedlings.

Mr. Peffer did not have the privilege of acquiring, in his youth, what is called a liberal education, but he made the most of the advantages he had. He literally dug out his education, and it was by no means a poor one. His mind was naturally gifted and his abilities were of the solid, substantial kind. All scientific questions interested him, and he was not slow in coming to conclusions in such matters, that were usually quite correct, and sometimes in advance of the more learned men of science. He was perhaps the first in discovering the fact of the propagation of pear and apple blight through their blossoms.

It was not an easy matter to deceive him. A humbug was sure to receive a severe overhauling at his hands, and he was not backward about expressing his thoughts of it. He knew a good fruit when he saw it, and was always ready to give every such thing due praise. There were few men in America who had such keen pomological discrimination, as all pomologists know who came in contact with him.

At the meetings of a horticultural nature in his own state and those of a national character, he was nearly always found. He was rather retiring, and decidedly unobtrusive, but he was free to take part in discussions, when occasion required, and gave what he could from his store of information. His words were always fraught with plain, common sense, backed by experience. His tall form was easily observed in any company, and his peculiar German accent when speaking, was a pleasant feature, long to be remembered by his many personal friends. He leaves behind a memory in the horticultural world that will be a continual inspiration to higher attainments in this noble calling.

My acquaintance with him began at the New Orleans exposition, where we were engaged in exhibiting the fruits of our respective states. The laurels which were won by Wisconsin at that world-famed pomological contest should be largely credited to his efforts in exhibiting fruits of his own growing. The whole of the winter 1884-5 was spent by us in daily examination of the fruit exhibits from all parts of this country

and from many foreign nations. Many and long were the conferences we had over those interesting specimens. He was not long in acquiring a concise knowledge of the peculiarities of each variety as grown under different conditions of soil and climate. While he was a standard authority on the fruits of the far north, he soon became well informed as to the relative value of varieties of the orange, lemon and other southern fruits.

It was my privilege to visit at his home near Pewaukee in 1886, and I there saw the trees and vines from which he repeatedly gathered the fruit that did so much credit to his state. The orchards and ornamental trees about his home are living monuments to his skill and labor.

Mr. Peffer was one of the members of the American Horticultural Society, who composed the party that crossed the continent in January, 1888, to attend two meetings of that body in California—one at San Jose in the famous Santa Clara valley, and the other at Riverside among the orange groves. He and I occupied the same section of the Pullman car during the entire trip there and back, and a more jolly traveling companion would be hard to find. He was full of droll stories, which, being told in his quaint German style, were peculiarly amusing. He thoroughly enjoyed the scenery, noted the changes of climate, studied the various systems of culture, and critically scanned all that came within the vision of the most observing.

He spent some weeks visiting me at Washington, D. C., in June, 1892, and many and long were the consultations we had as to the various phases of horticulture, and the best plans for conducting the division of Pomology in the United States department of Agriculture, of which I was then the chief. In fact, it was he, who, when at New Orleans in 1885, made a suggestion which led me to conceive of the establishment of that branch of the government service. His words were always fraught with plain, common sense. We walked and loitered together in the parks of that beautiful city, and it was a pleasure to witness his enjoyment of every tree, shrub and flower.

The last time we met, was in the great white city by the lake, the world's fair at Chicago, in June, 1893. There, we

again together studied the fruits of every clime with old-time interest. He was feeble in body, but as young as ever in spirit. When we meet again, I trust it will be in the gardens of the Celestial City.

H. E. Van Deman.

Parksley, Va., Jan. 3, 1895.

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O. C. COOK,

By Rev. Guido Borshard, Oconto.

Osmer Clark Cook was born at Batavia, New York, August 9th, 1827. He was the youngest of four sons. His youth was spent in his native state, he having taught school there in 1846 and '47, when he started for California, by the Atlantic ocean, gulf of Mexico and isthmus of Panama. On his arrival at the isthmus he was kept from going further owing to severe illness. On his recovery, he was employed by the company then constructing the Panama railway, and, later. Some time was occupied by his travels about those parts and a short residence on the island of Cuba. In 1849 he was married to Lucretia Cole and soon after his marriage removed with his young wife to the state of Michigan. Here their twin sons, Wallace and Willard, who today are in the lumber business in Oconto, as the firm of W. P. Cook & Bro., were born. When these sons were three years of age, the family moved to Columbus, Wisconsin, where they remained a number of years. During their residence in that city their sons, Charles and George, were born. In the year 1865, the family left Columbus and moved into Oconto county. Two more children, Sheldon and Alice, were born to them here. In 1878 his wife died, and in the same year, the 11th of August, his son, Charles, was drowned.

In 1880, Mr Cook was married a second time to Dorcas F. Churchill, who with the five children of his first wife, survives him. On March 15th, 1894, Mr. Cook was thrown from his buggy while driving into Oconto, his horse having been



frightened by a locomotive at the Northwestern railway crossing. From injuries received by this accident, he died four weeks later, April 12th. His funeral was held on April 14th, from the Presbyterian church, Oconto, and was attended by one of the largest gatherings of people ever seen in Oconto.

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B. S. Hoxie—I move that Mrs. Campbell be instructed to prepare a copy of the memorial to Geo. P. Peffer, and send it to his family. Carried.

Mrs. Campbell moved that all unfinished business be referred to the executive committee. Carried.

Adjourned sine die.





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