Annual report of the Wisconsin State Horticultural Society for the years 1893-94. Semi-annual meeting at Kilbourn City, June 20 and 21, 1893. Annual meeting at Madison, February 6, 7 and 8, 1894. Vol....

Wisconsin State Horticultural Society
Madison, Wisconsin: Democrat Printing Company, State Printer, 1894 [covers 1893/1894]

https://digital.library.wisc.edu/1711.dl/P32CVGTSAB2NH8G

ANNUAL REPORT

OF THE

Wisconsin State Horticultural Society

FOR THE YEARS 1893-94.

Semi-Annual Meeting at Kilbourn City, June 20 and 21, 1893. Anuual Meeting at Madison, February 6, 7 and 8, 1894.

VOLUME XXIV.

A. J. PHILIPS, Secretary,

WEST SALEM, WIS.

MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTER,
1894.

LETTER OF TRANSMITTAL.

To Hon. Geo. W. Peck,
Governor of the State of Wisconsin:

Dear Sir:—I have the honor of presenting to you, in requirement of law, the twenty-fourth annual report of the transactions of the Wisconsin State Horticultural Society; embracing papers read and discussions thereon, reports of local societies in different parts of the state, together with a full account of money received and disbursed for the year 1893.

Respectfully yours,

A. J. PHILIPS,
Secretary.

West Salem, Wis, March 13, 1894.

INDEX TO VOLUME 24.

	Page.
Officers and committees	1-2-3
Life and honorary members	4
Officers of cranberry growers, bee keepers and forestry associations	5
List of members	6-7-8-9
List of nurserymen and fruit growers	10-11
Fruit lists recommended	12-13-14
Trees and shrubs recommended	15-16
Constitution and by-laws	17
Act of reorganization	19
Report of summer meeting	22
Address of welcome, by J. E. Jones	23
Response, by B. S. Hoxie	24
Possibilities of Horticulture, by Prof. C. W. Smith.— Discussion of the original paper being reproduced at winter meeting was not published here	24
"Why," by Carl H. Potter, Madison	25
"Wisconsin as a Fruit Growing State," Discussion	28
"The Garden Within," by Miss Mary D. Conway, Kilbourn City	32
"Roses for the Garden," by J. E. Wright, Baraboo	33
"Neglect of the Beautiful in Nature," by Miss Fleta Huntley, Appleton	35
"The Strawberry," discussion	39
Awards of premiums at summer meeting	40
Transactions of winter meeting	43
"Cold Storage," by C. C. Chamberlain, manager of Union Cold Storage and Warehouse Co., Chicago	45
"Apples at World's Fair," by B. S. Hoxie	47
"Will the Introduction of Russian Fruits Benefit Western Horticulture," by S. I. Freeborn, Richland Center	49
"Apples and Apple Growing in Wisconsin," by A. J. Philips, West Salem	54
"Looking Forward, by A. L. Hatch, Ithaca	60
State Interest in Horticulture and Public Schools, by Chester A. Smith, Kilbourn City	65
Not Pretty, but Practical, by Alma C. Mellville, Sun Prairie	72
A Home by Horticulture, by Prof. J. E. Colman, Evansville	76
Annual Address, by M. A. Thayer, Sparta	81
Report of B. S Hoxie, Secretary	84
Of Vie H. Campbell, Treasurer	87
Of Finance Committee	89
Of Ithaca Trial Station, by A L. Hatch	89
Of Weyauwega Trial Station, by Fred A. Harden	92
Of Visit to Sparta and Weyauwega Stations, by Prof. Goff	94
Of Distribution of Plants, by J. L. Herbst	95

	Page.
Strawberries for 1893, by Geo. J. Kellogg, Janesville	98
Experience in Starting a Nursery, by W. J. Moyle, Yorkville	104
A Year's Experience in Small Fruits, by J. L. Herbst, Sparta	107
Industrial Education, by J. A. Gaynor, Grand Rapids	114
Growing Vegetables for Market, by G. B. Smith, Green Bay	116
Notes and Observations on a Small Fruit Farm, by R. J. Coe, Fort Atkinson	124
The Local Paper as a help in Horticulture, by Mrs. H. H. Carlton, Brodhead	172
General Talk, by Prof. W. A. Henry	132
Report of B. S. Hoxie on Fruit for World's Fair	134
Hardiness vs. Quality, by J. C. Plumb of Milton	139
Report of Franklin Johnson — Fruit at World's Fair	142
One Year in a Market Garden, by T. A. Carpenter, Fond du Lac	144
Best System of Nursery Trimming, by B. Nade Hewitt, Waupun	146
Ferns and Wild Flowers, by Wm. Toole, Baraboo	148
Report of visit to University and Farm, by H. H. Charlton, Brodhead	154
Does it Pay? by J. Wakefield, Freemont	157
Conditions Affecting Fruitfulness, by Prof. Goff	160
Is Forest Cultivation in Wisconsin desirable, is it Practicable? by L. S. Cheeny	163
Report of Committee on Resolutions	171
Report of Committee on Nomenclature	172
Report of Wm. Toole, delegate to Minnesota	173
Report of M. A. Thayer, delegate to Iowa	176
Report of B. S. Hoxie, delegate to Illinois	177
Reports on observation, A. L. Hatch	180
By I. L. Fisk Omro	181
By Warren Gray Darlington	184
By Fred A. Harden and F. J. Wells	185
By W. D. Barnes, New London	186
By John Rhodes, Kansasville	187
By Daniel Williams, Summit Center	188
By W. H. Hanchett, Sparta	189
By W. A. Ramsey, Kilbourn City	190
By Mrs. D. Huntley, Appleton	191
By J. F. Case, Eau Claire	192
By J. J. Menn, Norwalk	193
Reports of local societies, Sauk county and La Crosse county	195
East Freedom, Waupaca and Omro societies	196
Report of Grand Chute	197
Reports of Wood and Eau Claire counties	198
Reports of Calumet and Freemont societies	199
Reports of Evansville and Waupaca societies	200
Reports of Janesville and Ripon societies	201
Report of Monroe county society	202
Report of Kilbourn City, Lancaster and Thorpe	203
Report of Delegate of Rushford society	204
Award of premiums	205
In memoriam	207
Dr. Joseph Hobbins	208
J. M. Smith	209
George H. Robbins	211
Letter from New Mexico, by Carl H. Potter	212
List of Growers desiring a trial station at Omro	216
Items collected by the secretary	218

	Page.
Transplanting onions	223
Report of Summer Meeting as made by Miss Grace Smith	224
Points from Iowa Horticulturalists	227
Orcharding in Northern Iowa, by J. C. Ferris	231
Apple discussion at Iowa meeting	232
Women as Horticulturists, by Mrs. Osborn	234
Notes from Minnesota	237
Biography of R J. Mendenhall	245
Why not exhibit at State Fair, by E H. S. Dart	246
Wisconsin as a Fruit State, by A. J. Philips	247
Fruit in the Northwest, by A. J. Philips	248

WISCONSIN STATE HORTICULTURAL SOCIETY.

OFFICERS FOR 1894.

L. G. KELLOGG, President, ... Ripon.
CHAS. HIRSCHINGER, Vice President, ... Baraboo.
A. J. PHILIPS, Secretary, ... West Salem.
R. J. COE, Treasurer, ... Ft. Atkinson.

EXECUTIVE COMMITTEE.

Ex-officio,

THE ABOVE OFFICERS.

By Election,

E. J. SCOFIELD, Hanover.
WARREN GRAY, Darlington.
DANIEL HUNTLEY, Appleton.
DANIEL WILLIAMS, Summit.
FRANKLIN JOHNSON, Baraboo.
PROF. E. S. GOFF, Madison.
W. D. BOYNTON, Shiocton.
J. L. FISK, Omro.
C. E. TOBEY, Sparta.
J. H. TREAT, Meadow Valley.

COMMITTEES FOR 1894.

By Appointment.

ON LOCAL STATIONS.

PROF. E. S. GOFF, } . . . . . University, { Madison.
PROF. W. A. HENRY, } . . . . . University, { Madison.
R. J. COE, ... Ft. Atkinson.
A. D. BARNES, ... Waupaca.
GEO. G KELLOG, ... Janesville.
B. S. HOXIE, ... Evansville.

NEW FRUITS.

PROF. E. S. GOFF, ... Madison
E. J. SCOFIELD, ... Hanover.
WM. A. SPRINGER, ... Fremont.

NOMENCLATURE.

J. C. PLUMB, ... Milton.
R. J. COE, ... Ft. Atkinson.
A. C. TUTTLE, ... Baraboo.

LEGISLATION.

CHAS. HIRSCHINGER, ... Baraboo.
J. A. GAYNOR, ... Grand Rapids.
MATT. ANDERSON, ... Pine Bluff.

FINANCE.

J. E. COLEMAN, ... Evansville.
F. C. EDWARDS, ... Ft. Atkinson.
WM. TOOLE, ... Baraboo.

ARBOR DAY.

PROF. E. S. GOFF, ... Madison.
B. S. HOXIE, ... Evansville.
M. A. THAYER, ... Sparta.

ORNAMENTAL SHRUBS.

J. L. FISK, ... Omro.
JAMES CURRIE, ... Milwaukee.
B. W. HEWITT, ... Waupaca.

ROSES.

GEO. J. KELLOGG, ... Janesville.
J. E. WRIGHT, ... Baraboo.
WM. TOOLE, ... Baraboo.

REVISION OF FRUIT LIST.

C. E. TOBEY, ... Sparta.
S. I. FREEBORN, ... Ithaca.
E. B. PARSONS, ... Eureka.

RESOLUTIONS.

VIE H. CAMPBELL, ... Evansville.
D. C. CONVERSE, ... Fort Atkinson.
A. L. HATCH, ... Ithaca.

COMMITTEE ON OBSERVATION.

A. O. BENNETT,	Grand Rapids.
J. L. FISK,	Omro.
J. F. CASE,	Eau Claire.
FRED HARDIN,	Weyawega.
J. L. HERBST,	Sparta.
D. C. CONVERSE,	Ft. Atkinson.
O. C. COOK,	Oconto.
PROF. E. S. GOFF,	Madison.
JOHN MENN,	Norwalk.
W. D. BARNES,	New London.
ROBERT N. FARGO,	Lake Mills.
DANIEL WILLIAMS,	Summit
WM TOOLE,	Baraboo.
F. J. WELLS,	Milton.
A. L. HATCH,	Ithaca.
MRS. D. HUNTLEY,	Appleton.
A. J. PHILIPS,	West Salem.
W. A. RAMSEY,	Kilbourn City.
WARREN GRAY,	Darlington.
JOHN RHODES,	Kansasville.

To the Members of the Committee:

You have been appointed a committee on *observation*. We wish information on several points, and I will suggest some of them so that you may take note as the season advances.

Time of fruit bloom and ripening. Date of early and late frosts. Varieties of fruits grown. Acreage in fruit, quality, where marketed and prices. The nature and quality of soil exposure and results. Location of orchard and small fruit plantations. Give the varieties of fruit grown in your vicinity either for home use or for market, noting which varieties are most satisfactory. If insect pests are more numerous, what remedies are applied to exterminate them? Are there any new methods of culture or new sorts of fruit? Have you a Horticultural and Improvement Association?

These suggestions and queries will, I trust, prompt you to make observations and send me your report by December 1st, 1894, that they may be transferred in our annual report for the benefit of Wisconsin horticulture.

Respectfully,

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.

HONORARY LIFE MEMBERS.

O. S. Wiley, ex-Secretary,	Madison.
F. W. Case, ex-Secretary,	Chicago, Ill.
Prof. Wm. Trelease,	St. Louis, Mo.
J. S. Stickney,	Wauwatosa, Wis.
A. G. Tuttle, ex-Pres.,	Baraboo.
B. F. Adams,	Madison.
F. K. Phoenix,	Delavan.
Peter M. Gideon,	Excelsior, Minn.
E. Wilcox,	La Crosse, Wis.
Geo. P. Peffer,	Pewaukee.
Wm. A. Springer,	Fremont.
J. C. Plumb,	Milton.
J. S. Harris,	La Crescent, Minn.

ANNUAL HONORARY MEMBERS.

W. B. Lloyd,	Chicago, Ill.
Jonathan Periam,	Chicago, Ill.
James S. Judd,	Chicago, Ill.
Prof. W. A. Henry,	Madison, Wis.
Prof. A. J. Cook,	Lansing, Mich.
Edgar Sanders,	Chicago, Ill.
T. T. Lyons,	South Haven, Mich.
Geo. E. Morrow,	Champaign, Ill.
Chester W. Smith,	Kilbourn City.
F. A. Hutchins,	Madison, Wis.
John Corse,	Wisconsin Agriculturalist, Racine.
W. P. Thurston,	Farmers' Review, Chicago, Ill.
H. W. Ash,	West Union, Iowa.
R. C. Keel,	Rochester, Minn.
L. W. Hartwell,	Dixon, Ill.
H. F. Thurston,	Farmers' Review, Chicago, Ill.
Clarence A. Shamel,	O. J. Farmer, Chicago, Ill.

OFFICERS OF THE WISCONSIN STATE CRANBERRY GROWERS' ASSOCIATION FOR 1894.

W. S. BRADDOCK, President, ... Mather.
S. A. SPAFFORD, Vice-President, ... Grand Rapids.
J. H. TREAT, Secretary and Treasurer, . . Meadow Valley.

EXECUTIVE COMMITTEE.

H. O. KRUSCHKE, ... Auroraville.
C. J. KRUGER, ... Dexterville.

OFFICERS OF THE WISCONSIN BEE KEEPERS' ASSOCIATION FOR 1894.

C. A. HATCH, President, ... Ithaca.
FRANK WILCOX, First Vice-President, . . . Mauston.
JACOB HUFFMANN, Second Vice-President, . . . Monroe.
L. LATHROP Recording Secretary, ... Browntown.
DR. J. W. VANCE, Corresponding Secretary and Treasurer, . Madison.
EXECUTIVE COMMITTEE, . . President, Secretary and Treasurer.

OFFICERS OF THE WISCONSIN FORESTRY ASSOCIATION FOR THE YEAR 1894.

Date of Organization, April 6, 1893.

PAUL BECHTNER, President, . . Milwaukee.
B. S. HOXIE, Vice-President, ... Evansville.
L. S. CHENEY, Secretary, ... Madison.
C. R. BARNES, Treasurer . . . . . Madison.

ADDITIONAL MEMBERS OF EXECUTIVE COMMITTEE.

H. C. PUTNAM, ... Eau Claire.
ALBERT SALISBURY, ... Whitewater.
MOSES HOOPER, ... Oshkosh.

LIST OF ANNUAL MEMBERS, 1894.

Anderson, Hon. Matt. . . . . Pine Bluff, Wis.
Anderson, Mrs. Matt. . . . . Pine Bluff, Wis.
Adams, W. C. . . . . Eleva, Wis.
Ames, A. R.. . . . . Madison, Wis.
Alsmeyer, E. C. . . . . De Forest, Wis.

Baur, Miss Lillie. . . . . Kilbourn City, Wis.
Borst, Theron. . . . . Kilbourn City, Wis.
Babcock, E. F. . . . . Sparta, Wis.
Barnes, A. D. . . . . Waupaca, Wis.
Barnes, Mrs. A. D. . . . . Waupaca, Wis.
Bingham, D. E. . . . . Ithaca, Wis.
Brimmer, Otto. . . . . White Creek, Wis.
Byrne, Isabel T. . . . . Madison, Wis.

Conway, Miss Mary. . . . . Kilbourn City, Wis.
Case, J. F. . . . . Eau Claire, Wis.
Case, Mrs. J. F. . . . . Eau Claire, Wis.
Coe, R. J.. . . . . Fort Atkinson, Wis.
Coe, Mrs. R. J. . . . . Fort Atkinson. Wis.
Converse, D. C. . . . . Fort Atkinson, Wis.
Converse, Mrs. D. C. . . . . Fort Atkinson, Wis.
Carpenter, L. A. . . . . Fond du Lac, Wis.
Coleman, J. E. . . . . Evansville, Wis.
Coleman, Mrs. J. E. . . . . Evansville, Wis.
Chappell, F. H. . . . . Oregon, Wis.
Chappell, Mrs. F. H. . . . . Oregon, Wis.
Cripps, Elon . . . . . Columbus, Wis.
Campbell, Henry . . . . Evansville, Wis.
Campbell, Mrs. Vie H. . . . . Evansville, Wis.

Elliott, Arthur . . . . . Baraboo, Wis.
Eiffmeyer, O. J. H. . . . . Baraboo, Wis.
Edwards, F. C. . . . . Fort Atkinson, Wis.
Edwards, Mrs. F. C. . . . . Fort Atkinson, Wis.

Fogle, Mrs. O. G. . . . . Kilbourn City, Wis.
Fisk, J. L. . . . . Omro, Wis.

Fisk, Mrs. J. L. . . . . Omro, Wis.
Freeborn, S. I. . . . . Richland Center, Wis.
Freeborn, Mrs. S. I. . . . . Richland Centre, Wis.
Favill, S. . . . . Madison, Wis.
Fisher, O. C. . . . . Centre, Wis.

Goff, Prof. E. S. . . . . Madison, Wis.
Goff, Mrs. E. S. . . . . Madison, Wis.

Hatch, C. A. . . . . Ithaca, Wis.
Hatch, Mrs. C. A. . . . . Ithaca, Wis.
Hatch, A. L. . . . . Ithaca, Wis.
Hatch, Mrs. A. L. . . . . Ithaca, Wis.
Hirschinger, Chas. . . . . Baraboo, Wis.
Hirschinger, Mrs. Chas. . . . . Baraboo, Wis.
Hotchkiss, H. B. . . . . Eau Claire. Wis.
Hauser, John . . . . . Onalaska, Wis.
Hanson, John . . . . . Sturgeon Bay, Wis.
Herbst, J. L. . . . . Sparta, Wis.
Hoxie, B. S. . . . . Evansville, Wis.
Hoxie, Mrs. B. S. . . . . Evansville, Wis.
Huffman, Jacob . . . . . Monroe, Wis.
Hewitt, B. Wade . . . . . Waupun, Wis.

Inglis, Robt. . . . . Bayfield, Wis.

Jewett, Z. K. . . . . Sparta, Wis.
Jewett, Mrs. Z. K. . . . . Sparta, Wis.
Jenkins, Mrs. . . . . Kilbourn City, Wis.
Johnson, Franklin . . . . . Baraboo, Wis.
Johnson, Mrs. F. . . . . Baraboo, Wis.
Jacobson, L. M. . . . . Clinton, Wis.
Jeffery, Geo. . . . . 2726 Lisbon av., Milwaukee.

Kellogg, L. G. . . . . Ripon, Wis.
Kellogg, Mrs. L. G. . . . . Ripon, Wis.

Lloyd, W. B. . . . . Glen Ellyn, Ill.
Loope, T. E. . . . . Eureka, Wis.
LeClaire & Manning . . . . . Rochester, N. Y.

Maxwell & Helgeson . . . . . North Prairie, Wis.
Moyle, W. J. . . . . Yorkville, Wis.
McVicar, John . . . . . Madison, Wis.
Mead, Robert . . . . . New Lisbon, Wis.
McKerrow, Geo. . . . . Sussex, Wis.
McKerrow, Mrs. Geo. . . . . Sussex, Wis.

McKenny, Edward . . . . . Kansas City, Mo.
Maynard, H. W. . . . . Waukesha, Wis.
Meixner, J. W., Jr. . . . . North Bristol, Wis.
Menn, J. J. . . . . Norwalk, Wis.
Menn, Mrs. J. J. . . . . Norwalk, Wis.

Northup, S. S. . . . . Clinton, Wis.

Olds, L. L. . . . . Clinton, Wis.

Parsons, A. A. . . . . Eureka, Wis.
Philips, A. J. . . . . West Salem, Wis.
Philips, Mrs. A. J. . . . . West Salem, Wis.
Philips, C. S. . . . . West Salem, Wis.
Pearsall, Merton . . . . . Waterloo, Wis.

Robbins, Mrs. Lelia . . . . . Platteville, Wis.
Read, L. N. . . . . Grand Rapids, Wis.
Riley, A. S. . . . . Pardeeville, Wis.
Rice, Miles . . . . . Milton, Wis.

Stowell, W. . . . . Kilbourn City, Wis.
Sjolander, C. A. . . . . Holman, Wis.
Sjolander, Mrs. C. A. . . . . Holman, Wis.
Spry, J. . . . . Fort Atkinson, Wis.
Smith, Geo. B. . . . . Green Bay, Wis.
Smith, Alfred . . . . . Madison, Wis.
Scofield, E. J. . . . . Hanover, Wis.
Stone, Fred C. . . . . Eureka, Wis.
Seymour, A. N. . . . . Mazomanie, Wis.

Treat, J. H. . . . . Meadow Valley, Wis.
Treat, Mrs. J. H. . . . . Meadow Valley, Wis.
Thompson, O. N. . . . . New London, Minn.
Thayer, M. A. . . . . Sparta, Wis.
Thayer, Mrs. M. A. . . . . Sparta, Wis.
Tobey, C. E. . . . . Sparta, Wis.
Tobey, Mrs. C. E. . . . . Sparta, Wis.
Tarrant, H. . . . . Janesville, Wis.
Tarrant, Mrs. H. . . . . Janesville, Wis.
Tuttle, A. C. . . . . Baraboo, Wis.
Tuttle, Mrs. A. C. . . . . Baraboo, Wis.
Toole, Wm. . . . . Baraboo, Wis.
Toole, Mrs. Wm. . . . . Baraboo, Wis.
Torry, D. M. . . . . Schiocton, Wis.
Torry, Mrs. D. M. . . . . Shiocton, Wis.

Topping, C. W. . . . . Delavan, Wis.
Townsend, Geo. . . . . Baraboo, Wis.

Winslow, A. A. . . . . Appleton, Wis.
Winslow, Mrs. A. A. . . . . Appleton, Wis.
Whitcomb, H. P. . . . . Byron, Minn.
Wells, F. J. . . . . Milton, Wis.
Wells, Mrs. F. J. . . . . Milton, Wis.
Williams, Daniel, ... Summit Center, Wis.
Walstram, J. F. . . . . Otsego, Mich.

Yahr, Solon . . . . . West Bend, Wis.

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.

Chappell, F. H., Oregon, grower and dealer in nursery stock.
Coe & Converse, Fort Atkinson, nursery and small fruit.

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

Freeborn, S. I., Ithaca, Pioneer nursery.

Hatch, C. A., Ithaca, bee-keeper and fruit grower.
Hatch, A. L., Ithaca, Hill Crest fruit farm.
Hirchinger, Chas., Baraboo, orchardist and nursery stock of all kinds.

Jewett, Z. K., Sparta, 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.
Loudon, F. W., Janesville, small fruits; originator of Jessie Strawberry.

McKerrow, Geo., Sussex, importer and breeder of mutton sheep.
Maxwell & Helgerson, North Prairie, nurserymen and fruit growers.

Plumb J. C., & Son, Milton nursery and dealer in nursery stock.
Peffer, Geo. P., Pewaukee, nursery and small fruit.
Phillips, A. J., West Salem, orchard and nursery, introducer of Avista and Eureka apples.
Parsons, L. L., Eureka, orchard and small fruits.

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

Springer, Wm. A., Freemont, the Freemont nurseries, originator of Wolf River apple.
Seymour, A. N., Mazomanie, small fruits.

Tuttle, A. G., Baraboo, small fruits.
Tuttle, A. C., Baraboo, nursery and small fruits.
Thayer, M. A., Sparta, small fruits.
Tobey, C. E., Sparta, Thayer fruit farm.
Thompson, O. N., New London, Minn., agricultural machinery and live stock.

Wells, F. I., Milton, choice strawberries and pop corn.

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

FRUIT LIST.

APPLES.*

Four kinds for poorest location.— Tetofsky, McMahan, Hibernal, Oldenburg.

Five very hardy kinds.— Oldenburg, McMahan [pronounced, Macman], Hibernal, Longfield, Wealthy.

Ten good hardy kinds.— Wealthy, Fameuse, Newell, Longfield, Wolf River, Scott's Winter, Talman, Sweet, McMahan, Yellow Transparent, Switzer.

Additional list for special locations—Willow Twig, Golden Russet, Fall Orange, Fall Spitzenberg, Walbridge, Pewaukee, Plumb's Cider, Antonovka, Northwestern Greening.

Other varieties promising to be valuable, well tested in some localities—Avista, Eureka, Windsor Chief, Wisconsin Russett, Patton's Greening Charlamoff, Lowland Raspberry, Borsdorf, Arabska, Lubsk Queen.

SIBERIAN APPLES.

Transcendent, Hyslop, Sweet Russett, Whitney, Gibb, Martha, Virginia.

PEARS.

Flemish Beauty, Bessimianki, Early Bergamot, Keifer.

PLUMS.

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

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

---

* 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 cultvation before July 1st each season.

CHERRIES.

Hardiest—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.—Pocklinton, Niagara, Green Mountain.

BLACK RASPBERRIES.

Nemaha, Gregg, Ohio, Older.
Early—Palmer.

RED RASPBERRIES.

Marlboro, Cuthbert, Brandywine, Shaffer.
For trial.— Superlative, Royal Church.

BLACKBERRIES.†

Snyder, Ancient Briton, Stones Hardy.

DEWBERRIES.

For trial.—Lucretia, Bartel.

---

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

† Winter protection recommended.

CURRANTS.

White Grape, White Dutch.
Red.—Prince Albert, Victoria, Holland, Red Ducth.
Black.†—Lee's, Black Naples.

GOOSEBERRIES.

For General Cultivation.—Houghton, Downing.
For trial.—Red Jacket.

---

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

TREES AND SHRUBS RECOMMENDED.

EVERGREENS.

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

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

For lawns and cemeteries.—Norway Spruce for back grounds; For groups—American Arber Vitae, Hovey's Golden Arbor Vitae, Pyramidali's Arbor Vitae, Siberian Arbor Vitae, Juniper Excelso.

For small lawn decoration.—Juniper Sucica, 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 Spicrosa, Elm American, Elm Scotch, Elm Weeping, European White Birch.

SHRUBS FOR CEMETERIES.

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

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

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

ROSES.

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

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

CONSTITUTION.

ARTICLE I. This society shall be known as the Wisconsin State Horti cultural 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.

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.

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 money expended during the year, in addition to such matters as are now specified in the law relating to the same.

CHAPTER 526, LAWS OF 1889.

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

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Horticultural Society, ten copies to each county agricultural society, and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of each of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university; to the governor, lieutenant-governor, secretary of state, state treasurer, attorney-general, state superintendent of public instruction, railroad commissioner and insurance commissioner, twenty-five copies each; to the state superintendent of agricultural 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 117, LAWS OF 1893.

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

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

SECTION 1. There is hereby appropriated the sum of fifteen hundred dollars out of the general fund, annually, to the Wisconsin State Horticultural Society, in lieu of all other appropriations to said society.

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

Approved April 8, 1893.

REPORT

OF THE

TRANSACTIONS AT THE SUMMER MEETING

OF THE

Wisconsin State Horticultural Society,

At Kilbourn City, June 20, 21, 1893.

In the absence of President M. A. Thayer, the meeting was called to order by Vice president Chas. Hirschinger, and the following committees were appointed:

Program.—Prof. Chester W. Smith, Kilbourn City; Arthur Elliot, Baraboo; B. S Hoxie, Evansville.

Resolutions.—J. E. Wright, Baraboo; J. E. Jones, Kilbourn City; Mary Conway, Kilbourn City.

Fruits and Vegetables.—George Campbell, John Stowell, Mrs. Woodruff, Kilbourn City.

Plants and Flowers —Arthur Elliot, Baraboo; Mrs. Maggie Hopkinson, Kilbourn City; Vie H. Campbell, Evansville.

Special Prizes.—Wm. Fox, Alice M. Wright, Baraboo; J. L. Herbst, Sparta.

Secretary B. S. Hoxie.—I am sorry to be obliged to state to you that President Thayer will not be with us at this meeting; he has been unable to procure a competent person to take charge of his business in his absence. As there is nothing further to come before this meeting, Mr. Chairman, I move we adjourn until 2 P. M.

Motion prevailed.

2 P. M.

Meeting opened with instrumental music by Miss Ella Smith, Kilbourn City.

ADDRESS OF WELCOME.

By J. E. JONES, Kilbourn City.

Mr. President, Ladies and Gentlemen of the Wisconsin State Horticultural Society:—Two years ago I had the pleasure of welcoming you to this hall, and I must say there is a noticeable difference in the attendance then and now, but there is a reason for it; the World's Fair with its many and varied attractions allures all, so that whatever a man may, or may not, do is affected by the great fair.

Those of you who have read of the magnificent reception given to Eulalia will see a great difference between her reception and yours here. The press spoke of her, Carter Harrison welcomed her with stately courtesy, whatever that may be, and kissed her hand; flowers were strewn along the way to be crushed under foot, and noted men and women vied with each other to bid her welcome. You will see that no great dignitary like Carter Harrison was designated to welcome you, there has been no hand kissing, no flowers strewn along the way to be crushed under foot, although fine ladies are among you, but you are welcome nevertheless. We are glad you have come among us again, and we feel that you will do us good, that you will benefit, will strengthen our local society. I believe that holding conventions is one of the best things for these societies; every individual is strengthened by the interchange of thought, experiences are compared and results noted. The literature of nature that we study as horticulturists, is the literature of God, and to comprehend nature is to comprehend God. He who walks under the shadow of the trees, listens to the rippling of the water, and notes the fragrant flowers unfolding in beauty by the wayside sees and hears the manifestation of God; if he can say, "There is no God," he is an infidel, indeed.

Two years ago when you were here there were two members with us whom I feel that it is a justice to mention, Mr. Chanter, who met with a sudden and horrible death a few months ago in Chicago, and his wife, who was equally interested in horticultural pursuits, are both now lying in our village cemetery; the sun of only two days has been shining on her grave. These are sad instances, although they are common to life.

We do not wish to wear you out with our protestations of welcome or to make you weary of your visit before you enter the house, but we tender you the keys of the city, the police are chained and the calaboose is open at both ends. Again in behalf of the Horticultural society of Kilbourn City, in behalf of its citizens, I extend to you a cordial welcome.

RESPONSE.

By B. S. HOXIE, Secretary Wisconsin State Horticultural Society, Evansville.

We gladly accept your kindly greetings and proffers of hospitality and return to you our sincere and heartfelt thanks. When we met here two years ago I believe you did not have your police chained up or your calaboose open at both ends so that we could walk right through.

It is with a great deal of sadness that we think of the death of Mr. and Mrs. Chanter; the few that are interested are always sadly missed.

It was a question with us for some time whether we would hold a meeting this summer or not, or where we would hold it, whether in Chicago or elsewhere. Several places extended a cordial invitation to us, but, of them all, the one that seemed to offer the most attractions was Kilbourn City. As was said in the address of welcome, Chicago and the World's Fair have drawn the people away. Perhaps it will not be becoming to me to speak of our exhibit at the great white city; its educational influence is great. When the fair was opened no state showed a greater exhibit or variety of apples than Wisconsin; it was a surprise to many to know that we could grow such apples, and some even went so far as to make the asser tion that we did not grow them, we bought them; this was a compliment to us, and I am glad to know that the committee on nomenclature, and the jurors on awards said, "Wisconsin is a long way ahead, a long ways on the road." This remark was made with reference to the apples originated in this state.

Through the efforts of the Wisconsin State Horticultural Society the law regarding the observance of Arbor Day was placed upon the statutes. This year the students of the schools voted for a state tree and the maple was chosen. The observance of Arbor Day by our public schools has awakened a great interest in horticulture, and this interest will increase as the years go on; the children are learning about plant life and its needs for successful growth, the hitherto mysteries of leaf, stem, bud and flower are becoming familiar lessons to them, objects of interest.

Again I thank you one and all for your kind welcome.

THE POSSIBILITIES OF HORTICULTURE.

By Prof. CHESTER W. SMITH, Kilbourn City.

(Not in my possession.)

Chas. Hirschinger—This is an excellent paper; and I think perhaps you may not have listened to so good a one on the subject of horticulture as this is.

J. E. Jones—Your suggestion that we may not have heard so good a paper I will take up because I have heard both papers that will be read here at this meeting by Kilbourn people. Prof. Smith is teaching those things right here; and the result of it is we have one of the best schools in the state. I do not believe we have ever had anything that has done as much towards elevating the school children as the Arbor Day exercises.

Prof. Smith—There is in all countries a great deal of theorizing. I thought so this morning when I came into this hall, before you came in, and as I looked up I saw the motto of our class still hanging on the wall, "Doing, not wishing." I thought why not leave that motto for the Horticultural society? I do not believe in introducing the teaching of horticulture pell-mell. I think there should be a carefully prepared system about it. I think something can be done, perhaps by the committee on resolutions, in bringing this subject before the teachers. I think Secretary Hoxie can be instrumental in bringing something before our State Teacher's association for discussion and in that way interest them in introducing it into their school work.

Secretary—Our state superintendent and his assistants are in hearty sympathy with the work and are very much interested in Arbor Day. Here is the vote for the state tree. (Reads.) Not one-half of the pupils in our high schools could have told the different kinds of trees, or the number of kinds in their school grounds before this canvass was made.

J. E. Wright—There is no chance for discussion on this paper; we all agree with it.

Prof. Smith—I suppose the object of this discussion is to get the subject before the state meeting of teachers for their discussion.

WHY?

By CARL H. POTTER, Madison.

Secretary—Mr. Potter is a member of our society whom we are proud to own, he and his wife are graduates from the university. Mr. Potter has given us some valuable papers with thoughts far beyond, many of his years, and I am sorry to say that on the table before me lies his resignation as corresponding secretary. His health is failing and he will probably go south or to some climate more favorable. (Reads resignation.)

WHY?

Throughout the dim vista of bygone ages one can distinguish the ever present gleam of the light of inquisitiveness shining, though often with but feeble ray, along the paths which mankind have trod, ever encouraging them onward and upward by revealing faint glimpses of worlds and of

truths unknown to them. Even our allegorical ancestors who ate of the forbidden fruit in the first famous horticultural grounds of the east, were through their inquisitiveness and desire for knowledge, placed in the pathway, which, with many turns and angles, has led finally to all the known facts in the fields of science.

Until man has begun to doubt, until he has begun to ask why this and why that is true, or is not true, he has not progressed beyond his then present attainments. In olden times men were often forced to find the solution of some difficult natural problem through penalty of a forfeiture of life. In our time the despot who imposes such tasks upon us is usually Economic Necessity, enraged and kept in a continual passion by competition.

We are compelled to compete not only with ourselves in the production of our crops and in the development of our enterprises where a rational system of coöperation would be eminently more beneficial, but we must also compete with the elements and with our insect, fungus and bacterial enemies.

The dawn of the day when man shall coöperate with man in all his efforts is at hand, and while this noble result is pushing forward to achievement let us ask *why* and *how* we can more fully coöperate with nature as represented by climatic elements and by living organisms. Why is water in abundance more necessary to the recently transplanted plant than it is some days afterward? To us the answer is very simple, but how many of the "laity" understand that there is so much less surface of root hairs available to the plant, and that to meet the constant evaporation of water from the foliage water must be supplied in greater quantities? As large as large as this number is, there is a vastly greater number who think that water is, under any and all circumstances, of great benefit to plants. Why? only a few days ago as I sat in my easy chair after a hard day's work was done, and watched the gardening operations of my near neighbors, I was completely shocked to see them turning large quantities of water upon their cabbage plants, plants that had been set only a few hours, and that in land so rich and wet that it could scarcely be inverted with a spading fork. The plants stood erect and vigorous, and what possible use could they have for more water? And yet day after day those plants and others were doped and drenched with water, often in the full glare of the noon-day sun, which soon dried and parched the surface of the ground! *Why* do people make such use — nay, such *abuse* of this health and life giving fluid? Why? Should they but stop and ask themselves the question and then attempt to answer it and learn the real effects of their actions from a rational standpoint, there would then be hopes of progress in them.

And this statement holds throughout all our horticultural operations. If people would only ask themselves why they do this, or that, or the other thing in their thousand-and-one operations, our profession would soon be evolved to a much higher plane than that which it occupies at present.

This ever present query can just as well be asked of many or most of our nurserymen and fruit growers. For instance, why is there such an indiscriminate use of the knife made in pruning instead of that more rational system of summer pruning by pinching — in shoots and removing buds, thereby greatly conserving the energies of the tree or plant and accomplisning the desired end in a much superior manner?

Why do we cultivate shallow at one time and why deep at another? Why leave the ground open and in ridges at one time and at another make it level, smooth and compact?

Why not grow and propagate some of our present choice seedling apples from root cuttings as does our friend J. C. Kramer, of La Crescent, Minn., instead of from grafts as is practiced by most of us? And, while speaking about grafting, why not perform this operation "just as the moon is breaking up" if this will insure better success?

Why plant blackberries, raspberries, currants, etc., in hedge rows when if planted in hills 5½ to 6 feet apart each way in check rows, they could be, much more thoroughly cultivated and would produce an equal quantity of superior fruit?

Why cultivate more land than you can well for a poor crop, when the higher cultivation of less land would yield much more satisfactory results?

Why have things arranged, or rather disarranged in a confused, heterogeneous mass, instead of in a systematic manner? In short, why have things inconveniently instead of conveniently arranged? Why use an old fashioned square hoe in your light cultivation and weeding about the nursery and garden, when with the shoulders cut off the same from the outer corners to the shank it would be much lighter, more convenient and serviceable in every way, except where it is desired to move large quantities of soil? Why does our old fogy Janesville nurserymen say that "such a hoe will do for a lazy man," when it is only the lazy, ignorant or shiftless man who will do without it after having its merits pointed out to him?

I might go on with hundreds of whys: Why use dull tools at a disadvantage instead of sharp ones advantageously? Why do with a common hoe and the fingers what a five dollar wheel hoe would do in a much more rapid and superior manner? Why handle all your potatoes and onions by hand when a wire scoop shovel would reduce the labor manyfold? These and hundreds more whys will occur to most of you as much or more forcibly as to the writer.

What is desired by this article is to stimulate a more general exchange of opinions and discussions upon these little details of our profession than has been the case in the past. It is all simple enough to some of you old gray-headed fellows — pardon the expression — but there are many younger members, both in experience and in years, and many, very many more, who will but read our transactions; there are many such people who are or would become interested in horticultural matters in general and our work in particular, and who could be materially aided in their work, were

you to treat your subjects more in detail and tell us why you do this and that and the other thing, in short what things you do, and what and how little things are done. Let us encourage our children and our less professional friends to ask and help them to find out why some forms of insect, bacterial and fungus life are beneficial and why others are injurious, and why thousands of other things are as they are.

And again, why do we poor deluded, self-conceited mortals continue to live and toil and sweat and starve in this rain-soaked, flood-scourged, sun-scorched, drought stricken, blizzard-swept, snow bound, fog cursed country when there are millions upon millions of acres of fertile, irrigable lands in the sunny southwest, anxiously, imploringly awaiting the coming of northern enterprise and capital to divert the waters of the mountain streams and lower lying rivers from their now next to useless courses to quench their thirst, for which generous act they will gladly yield as choice fruits and other products in such a profusion and of such quality as the most fastidious could desire?

Why, I ask, do we submit to "all the evils that flesh is heir to," why do we so complacently contemplate the existing order of things when it is so easily in our power to better our own condition and the conditions of others? Again I ask "Why?"

Chas. Hirschinger—This seems to be a paper of "Whys," and there are a good many "Whys" in it. The writer asks why we are living in such a froze-up, hide-bound country? Wisconsin is good enough for me, and about that hoe, I have used one and I think it is a foolish thing.

Moved by W. A. Ramsey that the executive committee appoint some one to fill the vacancy caused by Mr. Potter's resignation. Carried.

[Secretary read letter from Mr. Van Deman explaining why he was not present, also read letter from M. A. Thayer explaining cause of his absence.

WISCONSIN AS A FRUIT-GROWING STATE.

Discussion opened by Chas Hirschinger: In treating this subject I will say something in favor of the apple. It is a fact well known that Wisconsin is a fruit growing state as far as apples, grapes and small fruits are concerned. The apple is the fruit of all fruits. I do not care what you may say of other fruits; you may tell us of the peach and the pear so melting, and about the goodness of the strawberry, but the melting peach and pear will melt away into insignificance beside the apple; it stays by us when the peach, the pear and the strawberries are gone. We see on the table before us two apples grown last year that were shipped from a

foreign land. I have heard people say so many times: "You can't raise apples in Wisconsin." One man told me he had spent $500 trying to raise apples and his trees were all dead. I was interested in that $500, and I went to investigate the matter. I found he had invested his money on a little spot of ground about as big as this hall, he had put out trees in the sod, he bought and paid fancy prices for trees that "would not sprout." I asked him where he put the $500; he figured around and I found that he had paid about $30 for trees, the rest he had spent in forlorn hopes and he was a man who knew we could not grow apples in Wisconsin. One difficulty in the way of successful apple culture is the scab, and some people say this difficulty will prevent Wisconsin from being a fruit growing state, but every other state has this to contend with. Michigan has it worse than Wisconsin, and yet no one says Michigan is not a fruit growing state. Professor Goff is at work experimenting and we will soon know how to do away with this difficulty. When the worms were so bad some said we must kill the worms or we would never raise apples successfully here.

The difficulties in raising apples are no worse nor no more in Wisconsin than in any other state. We have Newell, Duchess, Switzer, McMahan; and I could name many others that are profitable. We must consider the conditions of the soil and location if we want to make a success. I might try to raise apples on low land, but it would not be profitable; the trees would die; they would not be long lived. You can't raise apples on every location in Indiana, Illinois or any other state I know of. You must study the habits of your trees; you must have the same faith as the old preacher who said, "Trust in the Lord and keep your powder dry." If you do not believe you can raise apples come and see me and I will show you what you can do. Take proper care of them and you can raise them. See those roses! if they had not been given proper care they would not have grown; if they had been left to trail in the dust, if sheep had been turned in among them to browse them, I would say, Mr. Wright had better save his money for something else.

W. A. Ramsey—Mr. Hirschinger made me think of a story I read of a woman who asked a friend to take tea with her, she thought she must apologize for her supper, so she said, "It's good enough what there is of it, oh no! I mean there is enough of it, such as it is." And it is about the same with our fruit. Mr. Hirschinger has eulogized the apples and the roses. I want to ask him if there isn't something in the soil down there at Baraboo that they can grow trees that people here think they cannot grow? I know they grow apples in Waupaca that we cannot grow here.

Chas. Hirschinger—I found that three fourths of the Waupaca seedlings were too tender. The Fameuse will almost die, then pick up again and do a little better while other trees will kill all at once. I do not know about all of the Waupaca seedlings, "The Wolf River is hardy" they say up there while it is too tender with us down here.

If you will take all the good land there is in Wisconsin, i. e., good for apples, and use it, it will not be many years before you will raise all the apples that you want. In less than five years there will be people all over the state cursing nurserymen for worthless fruit for they have bought the crab-apples and worthless fruit. I have always said we could raise apples in Wisconsin and I believe it; the seasons are changing, the land is changing. In York state, where I used to live, it takes five times as much labor to raise a bushel of apples. I have been fooled by tree agents that are going all over the country. I bought one half dozen trees that cost me six dollars and I found they were nothing but crab-apples grafted

Q. Is it profitable to plant Russian apples? I find that mine blight. I have Fameuse twenty-three or twenty-four years old; three years ago they bore and this year they are loaded with fruit again.

Chas. Hirschinger—Did all of your Russians blight?

A—Yes, they all blighted.

Chas. Hirschinger—You must bear in mind the Duchess is a Russian that does not blight. Michigan people have written to me that they have no apple that will fill the place of the Duchess in the Chicago market and asked me for the refusal of my crop of Duchess. Will you name some of the Russians that blight?

A.—Transparent, Switzer. I do not remember all of the kinds. I have about twenty kinds that I bought of Tuttle, but they all blight.

W. A. Ramsey—I have seen places in New York where the soil was so poor they could hardly raise grass-hoppers, but they raise good apples. I do not think stones would prevent good apples growing.

J. E. Wright— I have been to the World's Fair, and when I saw Wisconsin's apples I did not think the state needed to take a back seat, although our state has no money especially appropriated for her apple display, while most states have money to keep up their exhibit.

Secretary—Some of the other states and other countries labor under the same disadvantages that we do, while others have plenty of money to do with; some of the counties in California have given almost as much toward an exhibit as Wisconsin has received for her whole state exhibit, and when people see it they think we make a poor show, they think we ought to do as well as those states having lots of money. New York has shut out the view by her fine furniture, of the little state of New Jersey and also shuts off Wisconsin. The judges say, "Wisconsin is a long ways ahead in apple culture." Apples originated in Wisconsin have been sent away down to Aroostook county, Maine, and into Canada. The World's Fair will be an education and will be a grand, good thing. We not only see fruit, but we learn what it costs to produce it, while we adopt other peoples' methods and they will adopt ours, it will be instructive and beneficial.

W. A. Ramsay—I have made a partial arrangement with the steamboat company for an excursion up the river to the Dells to-morrow morning, and I move that we finish the work of the convention this evening.

Motion prevailed. Adjourned until evening meeting.

TUESDAY, 8 P. M.

Meeting called to order by Vice-President Hirschinger, who called Prof. Smith to the chair.

Secretary—I presume some of you are disappointed because we did not succeed in obtaining reduced rates on the railroads. The officials would not make a reduction unless I could guarantee an attendance of one hundred; this I could not do, so we had to pay full fare.

Music was rendered by the Kilbourn City band.

Committee on Resolutions reported the following:

Resolved, That the Wisconsin State Horticultural Society does hereby express its appreciation of the efficient and able services of Carl H. Potter, as corresponding secretary of this society, and of his uniform courtesy and generous aid in all matters relating to his office, and that in his resignation the society has lost a most capable officer and enthusiastic worker. It is the hope of the members that his impaired health, which was the occasion of his resignation, may be perfectly restored.

Resolved, That in the death of C. A. Chanter, last winter, through an accident in Chicago, and in the death of his wife in Kilbourn City, June 17, the interests of horticulture have lost two enthusiastic and able supporters; and be it further

Resolved, That the state society expresses sincere regret at their loss and sympathy to the sons and friends and to the local horticultural society of Kilbourn City.

Resolved, That the Wisconsin State Horticultural Society does hereby recommend that school officers and teachers institute a series of discussions and exercises on horticulture in public schools, educational institutes and conventions wherever the same may be practicable and in harmony with established rules, these discussions and exercises to be in a line with the knowledge of plant life, species, habits, etc., of all varieties of trees, shrubbery, flowers, fruit, and the thoughts and sentiment incident to the study of nature.

Resolved, That in the manner of entertainment, the generous hospitality and universally agreeable treatment of the members of the state society by the citizens of Kilbourn City, the work of the summer meeting has been carried out under especially pleasant conditions, and the visit of members made particularly agreeable. This society hereby expresses its appreciation of the well-known hospitality of the people of Kilbourn City, the beauty of the Dells and the town and the many pleasant features to be found by visiting societies.

Adopted.

J. S. Harris—These are very good resolutions. I find in going about the country that the farmers' wives and children and even the farmers themselves cannot tell the names of the trees on the farms on which they live, and I believe if we ever are to replace the forests they have cut off, we must commence at the very foundation, with the children themselves.

THE GARDEN WITHIN.

By MISS MARY CONWAY, Kilbourn City.

In choosing a subject relative to horticulture inquiry extends to nearly all the agencies that either consciously or unconsciously influence the life of man. So vast is the scope, and so numerous are the functions of horticulture, that they are comprehended only in the unlimited experiences of cultivation and development.

We may have horticulture in the garden within, as well as in the garden without. In each are plants, having gone through the same stages of development, viz.: sprouting, growing, blossoming and bearing fruits. The beauty of each garden depends, firstly, upon the seed sown; secondly upon the light, heat and moisture given, and thirdly, upon the vigilance with which the wise horticulturist uproots the weeds and cultivates the desirable plants. Although all persons are not horticulturists in the common acceptance of the term, yet to each and every one is given a garden within, and,—

> "'Tis a field will yield as we make it—
> A harvest of thorns or of flowers."

Whatever we make it can not be hidden from view by lattice work, by hedges, or by screens. Its thorns or its flowers are ever visible in the face and in the voice.

We often see the garden of flowers, and alas! also the garden of thorns. Who has not seen the garden cultivated by years of noble living, crowned with such a halo of loveliness as no mere accident of color or form could impart.

There are persons whose souls — the gardens within — are so radiant that we scarcely see the tabernacles of flesh and blood in which they abide, but look straight through at the glory within, and it inspires us. It awakens our better faculties; it makes us conscious that there are elevations that we have not reached — and, indeed, we have only dimly seen — and arouses us to effort. We feel, for the time at least, able to do anything that is duty, strong enough to overcome any obstacle, and determined enough to resist any temptation. Would that there were more of the gardens that make such faces, our upward path would be firmer! But such gardens can be cultivated as surely as ever a flower garden was made to bloom in beauty. Every thought is a seed planted, and brings forth fruit according to its kind. Hence in selecting our seed, we should select thoughts that are prompted by love for "work that is earnest, and brave, and true," and we should uproot all that are born of selfishness, malice, or envy.

That delightful plant, cheerfulness, is worthy of our most watchful care. It is indigenous to every healthy mind, and flourishes alike in cottage and

palace, in the poorest soil as well as the richest, if the noxious weed, selfishness, is not allowed to divert the sunshine and poison the atmosphere. If we succeed in rearing cheerfulness to a vigorous growth, the greater part of the work of our garden is done. The beautiful blossoms and fruits will soon follow in kind words and noble deeds. We can make the conditions necessary for a healthy development of all good and worthy plants in this garden within by doing every duty, however small. By living at our best every day, our best to-morrow will be better than our best-to-day, and so on. By subordinating everything to the simple question: What is the right thing to do?

This is the culture which yields the truest joy, which wins the greatest victory, which holds in its compass the power to lift into a higher and sweeter existence the humblest toiler, while he, as necessarily, makes the world brighter and better, in the same manner that a fragrant flower perfumes the air in which it blooms. Since there constantly emanates an influence, fragrant and inspiring, or depressing, if not deadly, from this garden within, as surely as there emanates the sweetness of the rose or the deadliness of the nightshade in the garden without, it is plainly our duty to keep this garden pure. We are thus in one sense, our brother's keeper. We are surely the keepers of the children. Their gardens furnish a most promising field for this part of horticulture. This horticulturist must think good thoughts, speak helpful words, do kindly deeds and live an honest life. Then is he prepared to become a true horticulturist in the garden without. Then are his senses given to their holy use, and the goodness of God passes into his heart. Then does he love the wood, the wild flowers, with all their infinite changes of color and scent and sound, the rippling stream, and rolling mists. These will haunt him like a passion, the face soon shows the radiant garden within and he is completing his preparation for the eternal culture in Glory Everlasting.

ROSES FOR THE GARDEN.

By J. E. WRIGHT, Baraboo.

This paper is a continuation of the paper that I had the honor of presenting at the February meeting of this society, entitled "A Garden of Roses." In that paper I did not attempt to recommend any *one* rose for cultivation in Wisconsin, but having been placed upon a committee to recommend a list of roses, I found that the more experienced member thereof did not agree with me. Hence, I the more shall write on my topic, "Roses for the Garden," meaning roses suitable for growth in the open garden at Baraboo, Wisconsin. As I am alone responsible for the statements herein, and the society is in no way implicated should any rose fail, I write the more boldly

confining my paper only to my own experience under the method set forth in my former paper.

First, there is *no best* variety to recommend; a glance at the specimens placed on the tables for exhibition to illustrate this paper will convince you of that fact. What do we desire in the rose? Beauty of form, of color, of odor, of fragrance and of plant, then add profusion of bloom, continuance, permanency, health and hardiness. No one variety has all these in perfection, or is even superior to others on all points.

To-day is the twentieth day of June, 1893; the season is late and only the earliest roses are out. Look at this climbing Victor Verdier from a plant on the east side of my cottage. Which one of the varieties recommended by our society is its equal in appearance, viz.: Queen of the Prairie, Gem of the Prairie. Baltimore Belle or Mary Washington? My Queen is not yet in blossom, nor is the Belle, both of which are on the same side with the Victor Verdier. My Baltimore Belle suffered much last winter, but Victor, although claimed to be of a more tender kind, is strong. When we know that this bush will bear blossoms throughout the summer and fall, as it has done on my place for some years, why not recommend it for cultivation? In short, it is a rose with beauty of form, of color and foliage, it is also profuse, continuous, permanent, healthy and hardy. One more climber I also recommend, the climbing Jules Margottin; it has this additional quality, it is fragrant.

As for moss roses, I do not care to add to the list, published by our society, any other than Capt. Ingram and Glory of Mosses.

All mosses seem hardy; if any suit your taste, set them out.

In other classes our society recommends the following only: Persian Yellow, Yellow Harrison, Madam Plantier, Gen. Jacqueminot, La France, Gen. Washington, Paul Neyron, Magna Charta. The Persian Yellow remains in bloom about a week and then quits.

Madam Plantier comes late, remains in bloom for a time and is wholly done for the season. Gen. Jacqueminot is worthy of recommendation; but Fisher Holmes is an improvement. La France, though liable to die, must be grown.

Paul Neyron and Magna Charta are both worthy. But must our list end here? Shall we limit the two senses that cannot be surfeited to these few samples, when hundreds of others, just as pleasing, are at hand?

I can see why this society would more highly recommend a *few* apples to the exclusion of the many, but when we come to roses, any variety is to be recommended which possesses, in a fair degree, beauty of form and color, especially if healthy, hardy and continuous.

I recommend in addition to the above, Clotilde Soupert, a polyanthus, vigorous, introduced by Soupert et Notting in 1890; it is hardy, healthy, continuous, permanent, odorous and profuse.

Dr. Hogg—A very distinctive rose, as you notice, Hybrid Ramontant, free, sent out by Laxton in 1880.

Dinsmore—A vigorous Hybrid Ramontant sent out by Peter Henderson in 1887.

Etoile de Lyon—Yellow tea, Guillot, 1881.

Hermosa—A Bourbon, moderate growth, always in blossom and, like most Bourbons, cannot die; no garden should be without it.

Appoline—Of the same class, must be grown also; it will have flowers for you until the frost cuts them off.

R. D. Baxter—Hybrid Ramontant; by Paul; not fragrant.

Souv. d'un Amie—Tea, free; 1846.

The Bride—Tea, free; 1885 by J. N. May; sport from Catherine Mermet.

Triumphe d'Angier—Hybrid Ramontant.

Meteor—Vigorous, Hybrid tea; 1889 by Bennett; the most permanent red rose.

This is the state to grow roses in, and there not is not one rose of upwards of 200 varieties now growing in my little garden that is not, in my opinion, worthy of recommendation; but look for yourselves at the roses here exhibited and judge; they are all garden grown at Baraboo. Perhaps those I have especially recommended you do not think superior to the others shown. They may not be, but if I can get the sixteen varieties named above added to the society's recommended list and the people of Wisconsin to try them, I know there will be added joy and contentment in many homes.

J. S. Stickney—I do not know that I have ever heard anything more admirably presented, more calculated to inspire enthusiasm than this paper. There is, however, one rose, my old friend, that I should hate to see drop into disfavor; it is easily propagated, can be successfully grown in everybody's hands, while many others cannot; it is the Madam Plantier.

J. E. Wright—I do not wish any one to think I want any rose taken from the list. It's a good rose for the cemetery; you cannot kill it.

NEGLECT OF THE BEAUTIFUL IN NATURE.

MISS FLETA HUNTLEY, Appleton.

A love of the beautiful is inherent in the heart of man (and no one will contradict me when I say the heart of woman too). The higher the civilization the more do we see this love developed and crystalized in forms of art and sculpture, until nature herself is rivaled and well nigh but done.

The more degraded and embruted a people become the less we see of this sentiment until in the abject poverty of the slums of our great cities the the struggle for a scanty subsistence comprises the sole life of its victims and this higher nature is crushed before there is a chance for development. In our boasted land of the free where the laboring man can receive the fruits of his toil and enjoy some leisure for study and culture, we should

expect to find a constant rise in the standard of art, an increasing love of the beautiful among the middle and lower classes as they better their temporal condition, and with it an increasing demand for all that is artistic and beautiful. And this is just what we do find; and so we are not surprised that the peasant laborer of Europe who never trod a carpet nor wore aught but a wooden shoe, after a few years of life in America, accumulates luxuries about his home that to his friends across the sea would seem like visions of fairy-land. His children associating with those of more educated parents imbibe this sentiment, and as they grow up enlarge the little home, bring in carpets and curtains, books and pictures, and later —alas, for the example, tidies and drapes and throws! Many such a little home have I seen transformed when the oldest girl went out to teach and came home with new ideas as well as a purse that to her held the promise of many changes in the lives of her brothers and sisters.

So universal has the sentiment become that the co untry home is rare in which many if not all of the beautiful surroundings are not found which American ingenuity can devise, while in the more wealthy home all this goes without saying.

But in this mad rush after what we have been gracious enough to call evidences of a refined and intelligent home, one phase of beauty is quite neglected until a new standard is created which calls for the gaudy stamp of fashion and is lost to the beauty of naturalness. One of the evil tendencies of this age of inventions and prosperity is to cultivate a love for the artificial.

We have only to look at the grounds along some of our stylish streets for an illustration of this perverted love for the artificial. Not a delicate fringe of June grass dare show itself along the pavement, not a clover blossom dare raise its sweet heed from the grass; ever ydandilion is treated as a criminal, and even the bright autumn leaves which the children love are bagged and burned by a man hired for the business, while there is not a flower to be seen. What an illustration of money misspent and effort misdirected. Is it any wonder that a love for nature dies in the child life of to-day in such an atmosphere? Poor overworked lawn mower! I wonder how they got along without it in the garden of Eden? Doubtless the critics would have called it an unkept, neglected looking place.

Right in connection with this evidence of the perverted taste of to-day is the strange fact that people do not know they have it. The most ardent devotees of fashion who ignore the gifts of nature are of the opinion that they have a great love for them. And it is an amusing as well as a deplorable spectacle to hear people declaring their love for flowers in that I-wish-I could have-them tone, but depending on us to supply them because they "really haven't time and don't know how to grow them." At the same time they are spending not only their time and money, but the best effort of their lives to perfect themselves in every other accomplishment and amusement It is a strange kind of love, surely, that these people pro-

fess — curious, often alarming in its manifestations. Open beggary is practiced everywhere, and thought nothing of when it is flowers that are begged; stronger than this there is a pretty kind of mob violence which some of us have met with when passing through a school yard with flowers in our hands. And alas! even theft is sometimes practiced by those who would not think of taking anything else. Many people seem to labor under the false belief that whatever grows is common property (every farmer has met this in the town people), and in a certain way they are in the right of it, too, I believe. Flowers should be common property. No one need go without. This earth was covered with them in the beginning, and only man has made it otherwise.

These people do not know themselves. They think they love one thing when there lives are a living contradiction of it. The artificial environments of their life and its many requirements are not only robbing their time and money, but perverting their tastes, lowering their ideals and blinding their perceptions to the beautiful. Christ said, "Consider the lilies of the field, how they grow." It is some of the best advice he ever gave. Every one is glad he said it because it is such a pretty little verse to quote and put on cards, and very convenient as long as it remains in print on their shelves. But making it a life precept never enters their idea.

With all our improved methods and labor saving inventions the average woman has not the leisure for flowers that her grandmother had. But the hammock and the bicycle were unknown to the latter. These devices for rest and recreation belong to the modern girl; and while they are entirely proper, they certainly have usurped more than their share of her time and energy. Show me a girl that is devoted to the bicycle and I will show you one that decorates her room with paper flowers, scent bags and drapes instead of pansies, roses and ferns. And what a world of difference in the moral influence of the two. One of the strongest arguments in favor of the cultivation of trees and flowers is the ennobling influence they have upon the soul, the incentives they give to a higher and purer life. But to-day while these are wanting, their opposites are gaining a stronger hold on the minds of young and old; and this means a cultivation of lower tastes and pleasures at the expense of the higher life. The great attention paid to dress and artificial adornment seems to say: "I am a body; I have a soul, instead of I am a soul; I have a body." So much is sacrificed for mere bodily adornment at the expense of the intellectual life and the æsthetic nature, that the young ladies of the period are in danger of leaving the higher and nobler realms of their lives desolate and neglected.

A young lady from one of the fairest villages in southern Wisconsin, a village which lay like a picture among the hills with its beautiful lake, its pleasant drives and the old trees clustering everywhere, was heard to remark after a few weeks of city life that she would rather live in a garret in Chicago than in the pleasantest home in her native town. Showing that it was a mere life of novelty and excitement that appealed to her.

When such things can be true, are we putting it too strongly when we call this love for the artificial a dangerous life tendency.

Too often we see a second-class theatre drawing a larger crowd than a concert, a dime museum than a lecture, a circus than a horticultural meeting. We noticed in one building at the World's Fair a large show case of French lay figures heavily loaded with gaudy silks and velvets, holding a greater attraction for some than the marvelous grace and beauty of laughing faces and dainty childish forms carved in white marble. Would that some Keeley cure might be discovered to restore these perverted appetites of our æsthetic natures!

Aside from the refining influence on moral life, flowers and all forms of plant life offer a most practical means of adornment for person and home.

It is a mistake to think they should be worn only when one graduates or marries or dies. A few suitably chosen from a garden full form a much more novel and perfect effect upon a simple gown than any expensive passamentarie; while, to the woman who must economize, vines, plants and vases of flowers are a wonderful help in decoration, and she grows to love them more than any artificial drapes.

If then the beautiful in flower, plant and tree forms so great a factor in the refinement of the higher nature, if their moral influence is so great, why are they not made more of? If the women of this age still have a vague, inherent love for nature — shown in the sentiment of pretending to love the flowers so strong sometimes that they really believe they do; if the various forms of plant life form a decoration so inexpensive, so rare, so beautiful, why are flowers so neglected?

One reason, we think, is the effort it costs to grow them. It is a pretty picture undoubtedly — the little maid in short and dainty gown, garden hat and gloves, a watering can in hand, — but to be honest, this is a fanciful picture, and if one raises many flowers she will certainly soil her skirts, burn her cheeks a little perhaps and sometimes suffer a little from the backache. But all these discomforts as surely follow the tennis player, or the summer camper. The difference is here; the one is called work and is unpopular, the other fun and is all the rage, and the truth forces itself upon us that the cultivation of flowers is neglected only because it is not the style.

But consider the wonderful transformation of this earth if it could become the rage, and win as devoted followers as the tennis court, the ball game or the dance hall

The effort in the Arbor Day exercise is a step in the right direction; the time will come when flowers will be as much a necessity as carpets and drapes, and win as much devotion as the crochet hook, the paint brush, the novel and hammock, if not as much as the art of music.

———

Prof. Smith—I wish we might have more just such papers. I do not

know that this lady is a teacher, but I hope she is and that she teaches children just such things as this paper leads up to.

THE STRAWBERRY.

Discussion led by J. L. Herbst, Sparta:--Last year I was in the same condition that I find myself this year. I was chosen to represent our society at Baraboo, and when I got there I found that those who were to have discussed the question with me were not there, and this year I find it is the same way— Prof. Goff, Mr. Thayer and Mr. Johnson are not here.

The Warfield constitutes the main crop grown on our farm. Michel with you last year, was not popular, was not thought to be valuable, but with us there is none better this year. Do not discard it nor the Jessie. Sandoval is looking better than last year; last year it rusted to some extent but there is no sign of it this year. The foliage, and general appearance of all of the different varieties we are growing, is healthy and they are all looking better than last year I will not endeavor to give you an idea of all of the different varieties, but if there is any one present who would like to know something about any one variety I can give it in detail.

J. S. Harris, having been called upon to talk on this subject said: I think I need a little practice after being down to the World's Fair, seeing the princess Eulalia, the orange towers and all of the fine display, because to come down from all that height and to try to talk about the little strawberry is getting down pretty low. On my own place, the little time I have had to look around, the Warfield is in a very bad condition. We shall not get over one third of a crop from it; the Michel has never been a success; the trouble is they set the rows too near together so they can not develop fruit buds. Another trouble is with what we call false chinch bug which, in the dry weather, has sapped the leaves. Another reason is, last summer the honey bees all died and there was not a sufficient number of insects to pollenize.

To those who are amateurs in strawberry growing I would impress upon them the necessity of giving thorough cultivation all through the season. I would not let the late crop of weeds grow, because the insects are looking to see when you have left the bars down where they can deposit their eggs for the next season. If I could not keep them down I would do as Mr. Thayer does, keep the runners cut off until late in the season.

I like the Beder Wood as it is shown on these tables. I think the Warfield is all right if grown and thinned properly, and I would not like to see it given a black eye.

REPORT.

To the President and Members of the Wisconsin State Horticultural Society: Your committee on award of premiums for plants and flowers respectfully submit the following:

Best collection house plants:
W. A. Ramsey, Kilbourn City, first premium $3 00
Best show wild flowers:
Lillie Bauer, Kilbourn City, first premium 2 00
Grace Smith, Kilbourn City, second 1 00
Best collection roses in variety:
J. E. Wright, Baraboo, first premium 2 00
Mary Conway, Kilbourn City, second 1 00
Best table bouquet roses:
Lillie Bauer, Kilbourn City, first premium 1 00
J. E. Wright, Baraboo, second 50
Best bouquet white roses:
J. E. Wright, Baraboo, first premium 1 00
Mary Conway, Kilbourn City, second 50
Best bouquet roses other than white:
J. E. Wright, Baraboo, first premium 1 00
Best collection foliage plants:
W. A. Ramsey, Kilbourn City, first premium 2 00
Best show pansies:
Mrs. O. C. Fogel, Kilbourn City, first premium 2 00
Mary Conway, Kilbourn City, second 1 00
Best collection fuchsias:
Lillie Bauer, Kilbourn City, second premium 1 00

ARTHUR ELLIOT, Baraboo.
MAGGIE HOPKINSON, Kilbourn City.
VIE H. CAMPBELL, Evansville.

REPORT OF COMMITTEE OF AWARD ON SPECIAL PREMIUMS.

Your committee reports as follows:

Etta Johnson, Olin, Adams Co.
Charles Johnson, Olin, Adams Co.
Fred Johnson, Olin, Adams Co.
Verdilla Stowell, Big Springs.
Belle Stowell, Big Springs.
Lillie Bauer, Kilbourn City.
Herbert Bauer, Kilbourn City.
Ida Weber, Kilbourn City.
Alfred Weber, Kilbourn City.
Glenn Wood, Kilbourn City.
Annie Bayerline, Kilbourn City.
Jennie Ramsey, Kilbourn City.

have each furnished a bouquet for the officers' table and are each entitled to twenty-five strawberry plants; Jennie Ramsey having furnished the best

table bouquet is entitled to six grape vines, per offer of President M. A. Thayer.

Respectfully submitted,
WM. FOX, Baraboo.
J. L. HERBST, Sparta.
ALICE M. WRIGHT, Baraboo.

REPORT OF COMMITTEE ON STRAWBERRIES.

Best display of strawberries not less than ten varieties:
M. A. Thayer, Sparta, first premium $4.00
Geo. J. Kellogg, Janesville, second 2.00
Best seedling never before exhibited for premium:
J. L. Herbst, Sparta, first premium 2.00
Best quart for general cultivation:
Warren Stowell, Big Springs, first premium 1.00
Theron Borst, Kilbourn City, second ..... .50
Best quart any variety:
Mrs. Maggie Hopkinson, Kilbourn City, first premium 1.00
Warren Stowell, Big Springs, second ..... .50

The sum of Fifteen Dollars is hereby appropriated for the use of the committee on fruit to be awarded on best quart of such varieties of strawberries not to exceed fifteen as may be considered worthy of cultivation by Wisconsin fruit growers.
Awards under above provision:

Geo. J. Kellogg on plates of the following varieties, one dollar each:
Parker Earle, Haverland, Beder Wood $3.00
Warren Stowell, plate of Jessie 1.00
M. A. Thayer, Michel, Van Deman 2.00

Respectfully submitted,
GEORGE CAMPBELL, Kilbourn City.
J. D. STOWELL, Kilbourn City.
MRS. E. C. WOODRUFF, Kilbourn City.

REPORT OF COMMITTEE ON VEGETABLES.

Best exhibit garden vegetables:
Arthur Elliot, Baraboo, first premium $3 00
Best pick peas:
Arthur Elliot, Baraboo, first premium 1 00
Best half dozen heads of lettuce:
Arthur Elliot, Baraboo, first premium 1 00
Best half dozen bunches radishes:
Arthur Elliot, Baraboo, first premium 1 00

Best half dozen bunches beets:
Arthur Elliot, Baraboo, first premium $1 00
Best half dozen onions:
Arthur Elliot, Baraboo, first premium 1 00
Best half dozen bunches asparagus:
Arthur Elliot, Baraboo, first premium 1 00
Best six stalks pieplant:
Mrs. Jenkins, Kilbourn City, first premium 1 00
Arthur Elliot, Baraboo, first premium 50

GEORGE CAMPBELL, Kilbourn City.
J. D. STOWELL, Kilbourn City.
MRS. E. C. WOODRUFF, Kilbourn City.

Reports of committees were adopted.

The exercises of the evening were interspersed with vocal music and also selections by the band.

Adjourned *sine die*.

TRANSACTIONS OF THE 24TH ANNUAL MEETING

OF THE

WISCONSIN STATE HORTICULTURAL SOCIETY,

Held in Madison, February 6, 7, 8, 1894.

SENATE CHAMBER, Tuesday Morning, February 6.

Convention called to order by President M. A. Thayer, and the following committees were appointed:

Program—Geo. J. Kellogg, A. J. Phillips, J. L. Fisk.

Awards—Wm. A. Springer, H. W. Ash, R. J. Coe.

Resolutions—Vie H. Campbell, Prof. E. S. Goff, C. E. Tobey, B. F. Adams.

President—In commencing this session let us remember all that makes such a meeting interesting, all that is helpful in discussion. I see a good many young members present, and I want you to feel that this is your meeting. We want everything that will be of benefit, all of the first principles of horticulture discussed and facts brought out here; we want this to be a meeting of inquiry. Let us not forget, in our work, that we want to be acquainted with each other and to have a free interchange of thought.

The credentials of H. W. Ash, West Union, Iowa, and R. C. Keel, Rochester, Minnesota, were presented, and the secretary moved that they be elected honorary members for one year.

Motion prevailed.

The Secretary read a letter from C. K. Adams, President Wisconsin University, inviting convention to visit the University Farm:

UNIVERSITY OF WISCONSIN,
Office of the President.
MADISON, January 9, 1894.

MR. B. S. HOXIE,
Secretary of the Wisconsin State Horticultural Society, Evansville, Wisconsin.

My Dear Sir:—Observing that the twenty-fourth annual meeting of the Wisconsin State Horticultural Society is to be held in Madison during the early days of February, it gives me great pleasure to invite the members of the society and all persons in attendance to visit the State University, and especially to inspect the new building for the department of horticulture.

Hoping that you may find it convenient to accept of this invitation, and wishing you in every way a very prosperous meeting, I am,

Very respectfully yours,
C. K. ADAMS,
President of the University.

Secretary read a letter from Missouri State Horticultural Society with regard to the hand-book on Horticulture.

President—The question of Horticulture in schools is being agitated in all of the schools, more or less, and it seems to me there ought to be a hand book for their use. There are certain general principles that we have in common with other states, but when we come to adopt a hand book for Wisconsin we may find that we have more in common with Minnesota. In a general way we ought to co operate with all societies.

A. J. Phillips—I think this is a matter of some considerable importance. There is to be a paper presented relating to the same subject, and after it is read, I move that a committee be apppointed by the chair to which the matter shall be referred. Motion carried.

R. J. Coe—Mr. President, with your permission, I would like to present a petition which has been sent by the fruit growers of Winnebago county:

WHEREAS, The county of Winnebago, Wisconsin, is a rich, agricultural region, a populous section, and one in which horticulture is an important industry, and is also surrounded by counties largely interested in horticulture; and,

WHEREAS, This entire section is different in soil and general surroundings from our nearest trial station; therefore,

Resolved, That we, the horticulturists of Winnebago county respectfully ask that a trial station be established in this county and that the location be made on the fruit farm of Parsons & Loope, near Omro.

Eureka, Wisconsin, January 13, 1894.

Signed by eighty-four fruit growers.

Referred to committee on trial stations.

Secretary—Some of the farmers in Barron county are raising apples quite extensively, and also all around Sturgeon Bay.

A. L. Hatch — There is a region under the peculiar influence of the lake region from Green Bay extending along the peninsula and I am sure there are possibilities there that we little dream of. We have put our money into it and shall conduct some experiments that may prove valuable, but it is not necessary for you to do so. I think they will do up at Sturgeon Bay, about as we say about it, if we say drop it, they will do so. We will make our trial on a commercial scale, and will cover the ground better than you can with the small trial station.

Geo. J. Kellogg — The variation of the ground between Waupaca and Winnebago is very dissimilar. We have never had an application for a trial station backed up by so many as this one for a station at Mr. Parson's. The station at Waupaca is located in entirely different soil and is not accessible to the growers of our society, because it costs us so much to get there.

H. W. Ash—How many trial stations have you, and how much money do you appropriate for them?

A. L. Hatch—We have three, and an attempt to experiment at Madison, but on account of lack of proper fencing, it has not been so satisfactory as

it ought to have been. The actual cost of Crest Hill station would not exceed fifty dollars per year.

President — Our local station does not exceed twenty dollars per year, the expense is very small.

Secretary — The whole cost of our stations will average about seventy dollars per year. Prof. Goff has ordered all of the stock for the stations. They are trial stations, not experimental stations. We test new varieties and there is nothing from these stations sold for profit. I think there are other points in the state that need trial stations more than we do in southern Wisconsin.

Geo. J. Kellogg — In regard to Mr. Ash's question on expense; the stations are only in the embryo, we do not know what they may develop in a few years at the rate they are doing. We want something that we can tie to.

Secretary read a letter about a system of cold storage.

CHICAGO, January 30, 1894.

To the Wisconsin Horticultural Society:

GENTLEMEN: —The undersigned company lately received from Mr. B. S. Hoxie, your secretary, the compliment of a request that we submit to your annual convention, a short paper on the subject of cold storage for fruit.

We so highly esteem this compliment that we willingly tender a short paper, which however is not intended for anything more than a sort of chatty letter, which perhaps you will prefer to a technical pretentious effort.

Until recently cold storage has been simply the carrying of goods in rooms which were cooled by bodies of ice stored in upper chambers. The temperature and humidity of such rooms was very imperfectly controlled, hence decidedly irregular

Mechanical refrigeration has enabled those who have "learned their trade" to control temperature and humidity in rooms, to a nicety, so that first having ascertained the degree of temperature and the percentage of humidity best adapted to the preservation of an article of food, they can produce and maintain those conditions. Of course there are varying degrees of excellence according to the character of the mechanisms, processes and the skill and care of the operators.

But be it plainly understood, the cold storage man cannot convert a stale egg into a sweet one, or a defective apple into a sound one; although many unreflecting people seem to think he should. He can only supply uniform temperature and humidity.

There is no mystery in so-called cold storage. Almost every raiser or handler of fruit knows about what conditions are most favorable to the keeping of his fruit, but he cannot select a day which is just cold enough and just dry enough, and order such weather continued so long as suits his pleasure; but he can order the cold storage man to furnish him that kind of weather indefinitely in lots to suit, viz.: in storage rooms.

But who is to determine just what conditions are most favorable? The cold storage man adopts a general rule. Regarding for example, apples; he decides that for a sound ripened apple of one of the so called winter varieties, the average desirable temperature and humidity is so and so. Accordingly he so treats all that are confided to his care. But, it goes without saying that these apples vary greatly in degrees of ripeness, in soundness, etc., etc.

Probably no two varieties of apples should be treated exactly alike, and certainly no two apples go into storage in exactly the same condition. Very likely the difference in structure, and the difference in proportions of acids, etc ,accounts for the difference in the so-called keeping qualities of apples.

We suggest that your learned men might make up a tables howing how long eachv ariety should keep before commencing to decay, provided all were held in same temperature, basing such table of course upon the chemical proportions of each variety. Such a table would be of great value.

Generally speaking, sound apples, packed tightly, so they will not rattle and get bruised, will keep satisfactorily in a temperature of about 34 degrees, *provided the temperature is uniform*.

This may be taken as a reply to the question asked us, viz.: "Whether it be practical for the fruit grower to operate his own cold storage at home."

He could improve but little upon the old fashioned way, and probably he would find it more profitable to patronize a well conducted mechanical refrigerator. What results these last can accomplish was brought to your notice during the "World's Fair."

Very respectfully,

UNION COLD STORAGE & WAREHOUSE CO.,

BY C. C. CHAMBERLAIN, *Manager*.

I addressed them because I found that their system was the most practical of any in operation at the World's Fair.

A. L. Hatch—What proportion of our fruit that was stored came through?

Secretary—Some of the barrels scarcely had one poor apple in them, in some, three fourths were good, but those that were put into cold storage on the ground were a complete failure; it would have been better to have left them in cold storage in the city, where they were at first placed. The barrels came out about alike. To save expense and trouble in getting them just as we wanted them, I had them moved.

A. L. Hatch—When those apples were taken out of the cold storage in the city, did you leave them out any length of time before putting them into the cold storage on the grounds, and did you, when you took the barrels out of cold storage, leave the apples in the barrels any length of time before unpacking them?

Secretary—No: We took the apples out of the barrels as soon as possible. When they were taken out it was so cold that we had to work with our coats on.

Grapes are kept perfectly fresh in cold storage until mid-winter. The principles of cold storage now are a little different from what they have used for eggs and butter. It does make a difference whether the apple is over ripe or under ripe; apples under ripe kept much better than those that were ripe. Mr. Zettle's apples were in better condition, when we opened them, than Mr. Hatch's, and I presume it was because they were not so fully ripe. Mr. Zettle's Duchess stood up longer and seemed to be firmer and heavier, showing a difference in soil or climate that affected the fruit.

H. W. Ash—We have a very large cold storage at our place. The condition of the fruit when it is placed in the cold storage is of the utmost importance. There were about 500 barrels of apples put in during the extreme warm weather and there were a number of barrels put in later, when it was not so warm, and when they were taken out they showed a

great difference between those put in at a warm temperature and those put in when it was colder. With ice cold storage you can not so perfectly regulate the humidity as with the other system.

Adjourned.

SENATE CHAMBER, Tuesday, 2:00 P. M.

President Thayer in the chair.

President – I will appoint as a committee on a Horticultural Hand Book, B. S. Hoxie, Prof. E. S. Goff, Prof C. E. Smith.

APPLES FROM THE WORLD'S FAIR.

B. S. HOXIE, Evansville.

Here are the apples and perhaps they are better than anything I can say on the subject.

A few days before the close of the World's Fair I called on some of the exhibitors of apples to get specimens of some leading varieties but more particularly to get such varieties as we can or do grow in Wisconsin for an object lesson to show the same fruit grown under different conditions of soil and climate. I found that however many varieties one state or province had on exhibition that the number of really good apples was very limited. Canada, embracing the provinces, had 309 varieties on exhibition, and this is the list of the best:

Ontario.— Astrachan, Duchess, Gravenstien, La Rue, Northern Spy (Best), Wealthy and Ontario, a variety originated with them.

Quebec. — Northern Spy, Duchess, Alexander, Fameuse, Mackintosh, Red, Scott's Winter, Canada Baldwin, Wealthy, Bethel (from Vermont), Pom de Fair.

Novia Scotia.— Gravenstein (best), King Apple, Golden Russet, Alexander, Northern Spy, Rhode Island Greening.

British America.—Spitzenburg, McMahan (*small*), Yellow Belleflower, Fameuse, Ben Davis.

Kansas.—Jonathan, Missouri Pippin (*fine*), Smith Cider (does well, Fallow Water.

New Mexico.— Pewaukee (very large and fine), Wealthy (small, and not well colored), Yellow Belleflower.

Missouri.—Ben Davis and Jonathan.

Washington.—Newtown Pippin (exceedingly large and fine), Blue Pearmain (very large), Wolf River (compares well with ours in Wisconsin), Yellow Belleflower (large conical and ribbed like a quince).

Colorado.—Wolf River, Pewaukee, McMahan, Ben Davis, Wealthy, Walbridge, Alexander, Peck's Pleasant.

Nebraska.—Winter Wine Sap, Genetin, Walbridge, Ben Davis, Jonathan, Iowa Blush.

Oregon.—Alexander, Yellow Belleflower (long conical ribbed), Spitzenburg, Newtown Pippin.

Maine—St. Lawrence, Baldwin, Porter, Jonathan, Gravenstien, Mother, Fameuse, Drop d'Or, King Calvert and Nod Head.

I have here a few of the varieties and I am happy to find them in as good condition as they are. They were kept in the University barn cellar. Here are Belleflowers from eight states; Ben Davis from ten states. The apples from Maine were small compared with those from other states. Here is a little apple that they think a great deal of there; it is called the Nodhead. My object in getting these was to find out whether we had better go on through the list, or whether we had better cultivate a few varieties such as are demanded by the market. Three of the best six varieties grown in Colorado originated in Wisconsin.

J. C. Plumb—Have you noticed that those Pacific varieties have less trouble, are less affected by the scab?

Secretary—I do not know but that they are. I think Illinois is worse off than we are. I do not think it is any use to try to raise thirty or forty varieties for the commercial orchard; it is out of the question, and it applies to the general farmer as well.

J. C. Plumb—I would like to remark on that list. I think the exhibition of those varieties will bear very close study. The apples grown on the Pacific coast differ very materially from those grown here, and the difference is not all on the outside. A lady who came to my house gave my wife two apples for the children. She called my attention to them and I said, "They are California apples; if you will cut them you will find them a pumpkin," and so they proved. Now how many of these apples are of any commercial value to us?

Wm. Toole—The thought impressed me very forcibly that the kinds we can stand by are those which experience of long years has taught us are the best for us.

S. I. Freeborn—Where is the man who can point out the seven, eight or ten varieties that are the best for Wisconsin?

Mr. Hitchcock—What altitude were those apples grown?

Secretary—The man who had the apples on exhibition was the man who had the oranges; the apples grew on high land and the oranges in the valleys. The apples are not of so fine a flavor as those grown in Wisconsin, they are more insipid. When you come to Canada, New York and Michigan you get the fine flavored apples, just as we find them here, and I believe Wisconsin is not going to take a back seat. When I went to look at the Colorado exhibit, I asked them what they considered their best six

varieties, and I was surprised to hear them name three that were originated in Wisconsin. It was hard for many to believe that the apples we exhibited grew in Wisconsin, and I was glad to hear them say that we were a long ways ahead.

Q.—What three varieties did Colorado get from Wisconsin that they called their best varieties?

A.—Wolf River, Pewaukee, McMahan.

WILL THE INTRODUCTION OF RUSSIAN FRUITS BENEFIT WESTERN HORTICULTURE?

S. I. FREEBORN, Richland Center.

It might occur to some that no argument is needed to prove the fact, that the introduction of Russian fruits has been a benefit to us. Some have never doubted their utility; others that doubted at first, are slowly acknowledging their virtues. Many nurserymen opposed them after their introduction, for years called them trash, said the apples were all summer or fall apples, and were rotten as soon as ripe, or before, claimed we had fall and summer varieties enough, and good enough, claiming long keepers were needed, but doubted our getting the long keepers from Russia on account of difference in climate.

Many that could see no good in the Russian apples have claimed that the way out of our difficulties was to make the best of our American varieties, and grow seedlings, and that time would give us all we needed in the way of hardiness, long keepers, etc. By spending time enough this might be done, but we would be advancing much faster by using the hardy varieties we have from Russia that have taken them centuries to select and test.

Much time has already been wasted in Wisconsin on varieties too tender for the climate.

For forty years or more we have been planting trees of the grade of hardiness of Fameuse Plumb's Cider, Talman, Golden Russett, Walbridge, Pewaukee, and many sorts more tender than the above.

All those of much experience know the result.

In some of the best locations and soil, it has proved a paying investment, but with the large majority it has resulted in dead trees and disappointment.

It is no wonder that the average farmer, after harvesting four or five crops of dead trees, should refuse longer to buy or plant trees, and claim that it was cheaper to buy than attempt to grow apples.

We need something in Wisconsin more hardy than the old sorts; we need varieties as hardy as Duchess that will furnish apples for the differ-

ent seasons of the year. It seems like folly to me to expect to obtain hardiness by planting seed of kinds that we have found by experiment to be too tender for our climate.

Our hardiest known varieties so far have come from Russia,— Alexander, Tetofsky, Duchess, and later the Department and Iowa importations.

Our observation of the Russian apples runs through a period of twenty years or more, commencing with the Department importations. As several varieties were sent us to experiment with, we made root grafts of them, and when large enough, set a number in the orchard. We did not, at our first planting, set all of our varieties we had in nursery, but governed our choice by the growth and looks of the trees. The selection by looks would hardly be a safe way to select trees.

In our first setting we chanced to include Switzer, Repka, Red, White and Yellow Transparent, White Pigeon, Winter Pear, White Swan, Red Wine, Hibernal, Garden, Longfield, etc. In a later setting we added Antinovka, Arabska, Borsdorf, Bogdenoff and Boiken, the last five said to be long keepers.

In the years following we made other plantings, till the collection includes 200 or more of the Russians. To return to our first planting, I will say that we watched with interest to see how the imported apples would thrive and what particular qualities they would develop, as compared with the natives; as they came into bearing we found that we had not in this lottery of haphazard planting drawn a prize in every instance; in fact there were more blanks than prizes, as far as quality and long keeping were concerned, but for bright skinned fruit and hardiness the prizes were frequent.

As we can not enter into a lengthy description of many varieties, we will confine our remarks to a few that have peculiarities worthy of notice: First. We will mention the Switzer, three trees planted in '75, they soon came into bearing and proved productive, two best crops in '91 and '93; in '91 forty-five bushels of apples and in '93 forty bushels. They are of a bright red color, a little larger than Fameuse and of fine quality, and if rightly handled will keep till early winter; it is a fine grower in nursery and makes a splendid orchard tree; the three trees mentioned, now in their twentieth year, are sound and vigorous. Thousands of seedlings should be raised from this variety, as it promises to be very valuable for this purpose. The Switzer and its seedlings attracted much attention at the World's Fair.

Lubsk Queen No. 444. Budd in his bulletin of '86 classes this variety with the Wealthy for hardiness, but in his report of '93 says, "hardy as Duchess." I have set several in orchard and at different times, and have not noticed as yet any injured by winter in twig or body.

It makes a fine orchard tree, much larger (ten years from planting) than Duchess. For quality Budd says, "Fine quality, sub-acid and very good for so large an apple."

We have not thought it more than second rate for eating, though many do not object to it for this purpose. What it lacks in flavor it makes up in looks; beauty is a quality that has always been in demand through all ages. Lubsk Queen is certainly the queen of beauty among apples. I talked with a gentleman (of a great deal of experience) a few days ago who said he wished he had a large orchard of Lubsk Queen. Cross fertilization with Lubsk Queen, Borsdorf, and Boiken ought to bring valuable seedlings.

Hibernal, No. 378. The Hibernal family seems to be a hardy one; I have never known one hurt by the winter: it carries good leaves, and is an all around iron-clad, will probably thrive as near the North pole as any apple we have. Budd says, "Fruit large, even size, handsomely colored, and of best quality for culinary use." The Hibernal was the only variety Mr. Peffer found alive of the Department importation on his second visit to Washington; all others had succumbed, the climate of Washington being too much for them. According to Darwin the fittest survive, and likely the Hibernal was one of the fittest. Had Mr. Peffer had the gift of divination to discern what a valuable variety was before him, he might have greatly benefited himself and others by obtaining the cions of the two trees before mentioned and propagating them largely.

One might do worse than set a whole orchard of Hibernal, as it would be long lived, and productive. Our four trees twelve years old paid ten dollars each last fall. A cross of the Hibernal with some of the long keepers would be desirable.

Longfield—The first I knew of this variety to notice any of its peculiarities was one tree planted in the spring of 1883. It was first to bear apples in an orchard of nine hundred trees of different kinds, of both American and Russian sorts. It bore two bushels of apples before any other tree in the orchard bore one One hundred trees of Longfield, five years planted, gave more than thirty barrels of merchantable apples last fall.

Longfield is a variety that will pay to plant in most any location, it comes so soon into bearing; it will also pay for high culture, and for spraying and thinning the fruit; in tree it is not supposed to be as hardy as many others, but none have been killed by the cold in my orchard, so far; fruit is medium size, finely colored when grown in the sun, and number one for quality for those that like a tart apple; season about with Wealthy. I consider it a very valuable variety for Wisconsin.

Boiken.-All of the personal experience I have of this variety was gained from two trees, one grown as a root graft which was set in the orchard six years ago, and one tree top-worked later on. The six-year-planted tree bore a few specimens the fifth year, and one half bushel last fall. So far the indications are that it will prove one of the valuable long keepers; it is described by S. D. Willard in January number of *American Garden* for 1893, who had it on exhibition at Chicago, in July, in good condition.

Prof. Budd also speaks of it in March number of *American Garden* for '93.

I sent half of my half-bushel crop to Chicago and took the seeds from the other half and confided them to mother earth, hoping that the the product might be some Wisconsin Boikens wherein might be blended some of the qualities of the Newell, Switzer, Longfield, and others that were neighbors to the parent tree.

Of Russian pears, plums and cherries, I can say but little of the fruit as far as personal observation goes; varieties that I have have only been in orchard two years. Some of the pears have been out longer and have shown a few specimens, in quality not the best, but much better than none. Some of the kinds seem nearly or quite free from blight. One reason, I think, for the blighting of the Bessemianka is that they were set where there is too much protection and a poor circulation of air; there has also been some mildew on the leaves of some of the cherries, but no more than can be seen on Early Richmond.

The plums seem healthy, and have made a good growth; I am much pleased with the whole collection of Russians as far as hardiness goes.

It is evident that the Russian people have been experimenting for years along the same line that we are now working on. Hardiness must be the first requisite and as many virtues as possible to go with it. They work, no doubt, at greater disadvantages than is necessary for us to work; nowhere on earth could they obtain the help in the way of varities and experience that we have been able to get from them. Despotism, ignorance, lack of organization and horticultural literature has made their work slow. In my opinion the introduction of the Russian fruits, the advent of the spray pump and application of fungicides and insecticides has advanced horticulture fifty years beyond what it would have been without these aids.

It has been urged by some that there is no winter apple of merit among the Russian varieties; true we have not found the typical long keeper that we have been looking for for forty years among the old sorts.

The one that is to be a rapid grower, with good foliage, of large size, bright color, good quality, and that will keep a year, we can guarantee all of the above qualities, but you will have to set more than one tree to obtain them.

Repka, Borsdorf, Boiken, Arabasko, Anism, and several others will keep reasonably well. In a climate that sometimes makes Ben Davis a fall apple it would require a wonderful good keeper to keep a year with the ordinary facilities for keeping fruit. It has also been said that we have none of good quality in the Russian list. If not too fastidious, one ought to do fairly well with plenty of Red, White and Yellow Transparent, Blushed Calville, Switzer, Garden, Raspberry, Enormous, Repka, Borsdorf, Boiken, etc.

It has come to be believed that we can grow many varieties top worked on hardy stocks that we can not grow successfully on their own roots. Among the Russians we have many that will make valuable stocks. Hibernal and Enormous will be found valuable for this purpose.

Among other advantages that we claim for the Russian is, a large per cent. have good foliage and bright colored fruit; our last and greatest claim is that by their great hardiness they are invaluable from which to grow seedlings for the future advancement of western horticulture.

DISCUSSION.

A. G. Tuttle—I have been testing a good many Russian apples for the last twenty-five years. If we had such winters always as we have had for the last three or four years, we could grow American apples, but when we get a severe winter, as we do once in a while, it strips us. Until we got the Russian apples we never got a stock that we could carry through the winter without injury. I am setting, largely, an orchard of Russian fruits; the only apple I am planting of American fruit is the Wealthy. I consider Wisconsin just as good an apple state as Michigan or any other state. I said to Mr. Gibb that I considered the test I had made with over one hundred varieties of Russian apples of more than enough value to pay me. I am setting the Longfield largely; it has been said that it is the only apple that will bear a crop and form fruit buds for another year. We set forty trees the first of June, the trees were ten feet high and were full of blossoms. I said to my son, "We are fooling away our time;" but they all lived and all bore apples; they will stand more abuse than any other variety; they will keep better than the Wealthy. I find as the Russian trees grow older that the blight diminishes. We have other apples among the Russians that are about the quality of the Transparent, one of them is the Juicy White.

Mr. Stickney said to me, several years ago, "Now show me a good Russian apple." I gave him one and he said, "That is better than the Early Joe." Now nothing is said about that apple, but it is better than the Fameuse. That you may see that these things are coming to light I want to read a short article sent to me by Prof. Budd. I furnished Prof. Budd some thirty or forty Russian apples before he went to Russia, and this is one of them. (Reads from paper.)

Prof. Budd says he has changed the name of the Beautiful Arcade to Beautiful Sweet. We find these apples are coming to the light. We have enough among the Russian varieties to keep us in apples the year through, and the Russians and Wealthy are all I want to plant.

A. D. Barnes—I put out ten trees, one of these, the Hibernal, has yielded fruit every year. I find Switzer a good apple, the trees are hardy and symmetrical. The Hibernal is very large, as large as Wolf River.

A. G. Tuttle—Switzer is not a success with me; they blighted and died.

H. W. Ash—I have a good many varieties that have not been mentioned here, but it might not be of any practical benefit to take the time to mention them now. I want to say something about Lubsk Queen; it is the

most beautiful apple that man ever gazed upon; its quality is about average, but it is a beautiful apple, and beauty is par; you can sell it; it is a good fall apple, but you can keep it into winter in cold storage. The Hibernal is not a large apple, it is not good in quality, it will make a very fair culinary apple; it is one of those apples that its quality is developed by cooking.

S. I. Freeborn—I am glad our friend from Iowa is here to hold up my hands in this matter. I could not go into the enthusiasm that he does. I have a letter here from Mr. Patton of Iowa, I would like to have the secretary read.

(Secretary reads.)

A. G. Tuttle—General Gregg, as fruited by me, is the White Astrachan. I would like to speak of one Russian apple that I think is the most valuable of all the Russians, the Antonovka; it is a bad tree for the nurseryman, but you can take every apple off the tree and barrel it; every apple is a perfect one; it is an apple we would grow more of if we could keep it longer; the tree, every other year, is a bearer.

A. D. Barnes—I hope the impression will not go out that the Hibernal is a small apple, especially in the northern part of Wisconsin. My apples are very large and I have failed to see any apples from trees that are cultivated that are not large apples.

APPLES AND APPLE GROWING IN WISCONSIN.

A. J. PHILIPS, West Salem.

By the certain roll of the wheels of time we are again brought together for our annual meeting; and I hope that our deliberations and interchange of experiences may be such that on our return to our homes we may feel that it has paid us well to be here. The business of horticulture, and more especially that part of the subject assigned to me, Apples and Apple Growing in Wisconsin, filled with anxiety and fear. A very hard winter has its terrors; a hot and an early spring we dread. Insect foes are making destructive inroads and must be met and destroyed. As yet we have not been assailed like our brother, the dairyman, with a bogus or counterfeit of our goods; for nature has so excelled in the quality and appearance of our apples that no man can imitate them for market purposes: and for health all agree that nothing is more conducive to it. The schoolboy loves to eat a nice apple, carry it to his teacher or give it to his best girl. I love my trees and apples; I love to see the children eating them. I was looking around in the orchard the other day, thinking I might, perchance, find some pointers to help in preparing this paper; but all was

silent. I found plenty of fruit buds for next season; and, by counting, found, that, in addition to the few of our old varieties that are hardy enough for my location, I have thirty seven of the new and best seedlings of Iowa, Minnesota and Wisconsin on probation, or trial, some root grafted and some top worked; some have fruited, some have not; but I have seen the fruit of all save three, and of more than one half I have visited the old or original tree. That there is need of more knowledge on this difficult problem none will deny, and at this time there seems to be a general desire for instruction on the subject; and while I am of the opinion that there ought to be a good instructive paper prepared on this topic and published, not only in our reports, but also in our Institute Bulletins, so it would go into at least 20,000 more farmers' homes than our report reaches, still I feel that no one man is competent for the task, but that it needs the condensed experiences of all the apple growers in different parts of our state; and if I throw out one thought or hint worthy of a place in that paper I shall be happy to have it used.

Why, as I stated, is there a desire for information, because our first settlers came largely from the eastern states. They were brought up where apples were plenty and were used freely as an article of food. They brought with them to their western homes a love for the old orchard where they picked Baldwins, Pippins, Pennocks, Gilflowers and Rambos in their youthful days; and as soon as they had ground enough cleared and broken for an orchard they at once sent east for their favorite trees or contracted the same from the itinerant salesman, never for a moment thinking that this was a colder climate with shorter seasons and not so well adapted for apple growing as the land they had left, and only when failures began to stare them in the face did they realize that they must use the hardiest varieties obtainable. Now, of these first and later plantings of our early settlers all nor near all were not failures. Many proved successful and have borne for the planters and their sons or others who have succeeded to their estates as the older ones have passed away. Many hundreds, yea thousands of bushels of apples, for as far back as the Fifties many thousands of bushels of apples were shipped from Wisconsin to eastern states. And after all these years comes this inquiry, What shall we do for apples? Now the reason is plain. The older settlers and their successors while they enjoyed, sold and used their apples, gave no thought for the morrow, and as this climate is a hard one on trees, having to work with all their power to ripen their fruit in our short, hot seasons, and going into winter exhausted. The trees cannot be long lived, and as these old friends that have braved the cold and storms of many a terrible Wisconsin winter and still bore apples, are now gradually and surely passing away, the farmer or present owner finds himself confronted with the fact and finds that unlike his farm stock' and in most instances his family, there are no young ones coming on to take the places of the older ones when they are gone.

Hence comes the inquiry, What shall we plant, how care for them, and

where can we get trees from reliable growers, so that we and our children can have apples on the old farm as we had in years gone by? I have attended farmers' institutes more or less ever since their organization in Wisconsin and, as I have before stated, never have I heard at those meetings, nor for years have I received so many inquiries, by mail, on the foregoing subject than the present winter. For reasons I have given and reasons I will give before I finish, I am of the opinion, as I have stated in some published articles, that we need, in Wisconsin, to give out information to farmers and to prevent their being swindled. A fruit commissioner as much as we need a dairy and food commissioner. Why, a reliable farmer informed me this winter that a few years ago in one season there was taken out of his county over $3,000 for apple trees, and that not an apple has been produced and scarcely a tree is left of the purchase. Now, as we calculate in other things, let us multiply that amount with the whole number of our counties and see the loss. Of course, in this wholesale loss, I am not charging it all to tree peddlers or the sellers of unsuitable or poor stock. Of course the farmer grumbles about it and says hard things, and perhaps sets his dog on or otherwise abuses the next tree agent that enters his door or waylays him on the farm. Still, like much of the farmer's grumbling, it is largely his own fault; for he uses less precaution and exercises poorer judgment than he does in the purchase of anything else on his farm. Now, if he purchases machinery he insists on trying it before payment. If he buys improved stock he is sure to know what the breed is and where and by whom it was raised, but with his apple trees he is not sure whether they were raised in Virginia, Alabama or Wisconsin, even signs an order giving the seller a chance to substitute some other variety, something he would not do in buying anything else on the farm. Do you suppose a farmer would give an order for a barrel of sugar and, because the sellers were out of sugar, allow them to fill the order with a barrel of pepper, and receive it and pay for it? Not much!

I like an order like Judge Carpenter, of Madison, sent to me. If all buyers would post themselves and make such orders, it would save loss and trouble. He wrote me: "I hear you are a reliable nurseryman. Please send me your catalogue. If I can be assured that the trees are grown at West Salem and that I can rely on getting the varieties I order, I may select and buy some. Otherwise I want nothing." Now because farmers have read so much about the foregoing plans of doing business — and many of them have been victims themselves — is another reason why the inquiries pour in on this subject. Now, with more and better information spread broadcast through our state, it would work no injury to our Wisconsin local nurserymen, but would prove a benefit to them and a blessing to the planters. For the watchword should be, Wisconsin grown trees for Wisconsin planters. I will say at the outset that the apple crop is a very difficult one to grow. The reason has been that many of the trees set in the past twenty years have been delivered to the purchasers

in a dried and damaged condition and many have been of varieties not hardy enough for this climate. But the main difficulty is that while the farmer can shelter and protect his horses, cows, sheep and hogs, and even his dog from the cold and storms of winter and can cover and protect all his small fruits until spring is well open. The market gardener can plant in the spring and market in the fall and spend his money in the winter. But the apple tree has to stand in the same spot during its lifetime, often unprotected and many times poorly fed and cared for. It has to withstand the cold of winter and the heat of spring and summer; and the great wonder is that it lives as long as it does.

Another great drawback to apple growing is and has been the length of time before coming to profit. This we know is a fast age. Early maturity and quick returns is the rule. The pig must be sold at from six to eight months. The steer must be slaughtered at two years old. The sheep must be fattened before it sees its second year. The dairy man wants to count his money every week or month; and the chicken must be hatched by steam and sold before he learns to crow in the morning. But the farmer has to wait from four to eight years for the apple tree to bear and then only small crops for some time; and he gets tired of waiting; his patience is exhausted; and the tree receives, in many cases, very poor treatment; the manure goes to the corn, wheat or tobacco field; and the apple tree is starved. What would you think of a man tying his cow to one end of the manger and in the other end, out of her reach, putting some hay or feed and then expect her to give milk, or not put any feed in at all and expect returns. Now this is exactly what I have seen in dozens and hundreds of orchards in Wisconsin the present winter. A little manure close around the tree, but entirely out of reach of the feeding roots, or no manure at all, and the tree surrounded by a roof of June grass so firm and tough that not a drop of moisture could reach the starving roots. Is it any wonder in the face of all this that we do not raise more apples? Now I have in a candid way stated some of the obstacles to apple growing and some reasons why we should seek for a remedy.

And now the question arises, What is the remedy and how can we who feel the importance of it, give apple growing a start and a boom? Small fruits have been boomed, distributed, advertised, discussed, given away and the growing advocated in every part of our state until small fruit shippers can be found at nearly every railroad station. I am not finding fault with this, but have found fault because the neglected and oft abused apple tree had not come in for its fair share of recognition. And when think of the work now nearly done, of Gideon Springer and Father W cox in trying to produce and disseminate some new variety for the northern states that would prove a life-long benefit to apple growers. When I think of a hundred others including many of our own members and many of the Minnesota and Iowa members who have devoted many of the best years of their lives to this cause and think of the efforts of Prof. Budd and

the lamented Chas. Gibbs, braving the dangers of the deep and traveling in foreign lands, without pay, to discover, if possible, some Russian variety that might prove a blessing to us. When I think of the work of these men, I say it is due to them, it is due to our children and the people of our state that we make an effort in this direction, and the question is, How shall we do it? The only way is to disseminate information among the masses by sending broadcast our publications, our bulletins and farm papers that contain facts about apple growing, facts that have stood the tests of time in our state. If it is a fact that we have in our new Russians or among our northern grown seedlings varieties that can be profitably grown, let us tell the people so without fearing that we may help or benefit our neighbor. If, on the other hand, we know of varieties that are being sold that have not been sufficiently tried or are not valuable to the grower or planter, let us publish that fact without fear of offending the seller. Let honesty of purpose be the foundation of our work and mark our every effort. Let us exhibit our own productions and not try to beat our neighbor with fruit from some other man's orchard. Let us throw around the business all the safeguards possible, for it surely needs it. Let us disseminate knowledge on this subject by organizing societies and getting young men interested. Elect part of the officers who have some knowledge of growing apples and the balance who are posted in small fruits. Elect a man for secretary who knows something of the business and is anxious to learn more, let him visit nurseries and orchards, become acquainted with the different varieties and with the men who sell. Let him order and buy what the society needs and get them true to name and at wholesale prices. By so doing he will help the business of apple growing, he will help the nurseryman and the man who sets the trees. Bring the children into these meetings and interest them in growing apple trees as soon as you can. Work horticulture into the common schools as fast as you can, set but few varieties, but set good ones. Be careful not to encourage a man to plant apple trees unless he has a suitable place and you have reason to think he can succeed. I have spent the twenty best years of my life trying to succeed in growing apples, have traveled thousands of miles looking up new seedlings, have formed the acquaintance of many fruit men and their families, the recollection of which form some of the brightest spots in my memory. Am now growing a memorial orchard with the history of the originator or disseminator, for the encouragement and edification of my boys, and to remember those horticultural workers while I live, and can go into the orchard. I still have hope in the business. My orchard has been gradually improving for the past 10 years. I have learned how I can as surely grow apples as any other farm crop, by setting proper stocks and top working in the limbs. I have learned that on my grounds a graft planted and never moved makes a much better tree than the same variety that has been transplanted, especially if the same has come from a distance. I have learned that proper protection pays the best of any labor expended

in my orchard and that the lath protector is the best, cheapest and most practical of anything I have ever used.

I have learned that half the number of trees set and well cared for pay better that the whole set as I once did. Now I have given you many of the objections and drawbacks to apple growing. Now comes the question, have the apple growers anything to encourage them? I answer yes. In former years I have many times at institutes been cautioned to say nothing about orcharding, as the people did not want to hear it, but the present winter it is different; people have expressed a desire to hear it discussed and the conductors have been willing to allot as much time to it as it deserves. Through the efforts of Professor Henry our young men are having a chance to be educated in this and other lines. Those in charge have been willing to employ a competent man as Prof. Henry in horticulture. Our legislature has been willing to appropriate money to erect a building of of which every horticulturist has reason to be proud, for the purpose of better carrying on the work. A suitable part of the state farm has been set apart for planting an orchard where the young trees planted and cared for under instructions and directions of Prof. Goff are looking well. All the new sorts obtainable are being tried, and it is but fair to hope that out of these praiseworthy efforts much to encourage and help not only apple growing, but the culture of small fruits will be accomplished.

Has not our society, through its officers, founded experimental grounds in different parts of our state to work in conjunction with the state station for the dissemination of knowledge? Have not our new seedlings been called for and disseminated from the Atlantic to the Pacific? Do we not feel a just pride in the fact that one of our members brought seeds from Michigan in 1848 which, when planted, produced a tree which, until two years ago, was standing on the bank of the Wolf River, the fruit of which was awarded more money at the New Orleans exhibition than any apple exhibited from any place? Our McMahans draw forth admiration wherever shown and bring good money to the producer. Our Newells and many of our Waupaca seedlings are being sought after in other states, and the Wealthy, Whitney, Bret, Okabena and Peerless of other northern states are being tried in Wisconsin. While dairymen are proud that Wisconsin produced the best cow at the World's Fair and furnished butter that scored second to none, and our agriculturalists are proud of the fact that Wisconsin led the western states in the number of awards on grain. Is it not right that Wisconsin apple growers should feel very proud of the words of praise given to our display of apples at that same show? Were we not up well in the front ranks with our apples at Philadelphia and New Orleans, and should not these things give us hope and encouragement for the future of apple growing? Are not our boys and young men becoming more interested in the business? Our agricultural papers and especially our own much improved Wisconsin Farmers are very glad and desirous to have a chance to publish articles designed to spread knowledge on this

subject. Let us put our best and most experienced men to the front. Let us spread the best possible information as to vareties, soils, conditions and methods. Let us adopt the motto, Do unto others as we would have others do to us. And we can accomplish a result in apple growing which our children and our children's children can and will point to with pride.

LOOKING FORWARD.

A. L. HATCH, Ithaca.

Another year has demonstrated that there is no region tributary to the great fruit market of Chicago that produces finer appearing summer and fall apples than southwestern Wisconsin. For brilliant colors and perfection of fruit our apples compete successfully with any in the market during their season. Not only are the majority of summer and fall apples comparatively dull colored and imperfect, grown elsewhere, but a large share of the stock on sale in August and September consists of prematurely ripened, windfallen and defective winter apples.

Our climate and soil seem adapted to the production of fine summer and fall apples; and it is our candid belief that year in and year out we can sell our fruit for as much money as any will average from the so called apple growing sections. Another fact is, we never lose our crops by spring frosts — something that can not be said of nearly all other states where apples are grown for commercial purposes. While many are doubting, some few in my vicinity are waking up to these facts, and are looking forward with faith in sure returns from more liberal apple planting, and that we do not need to wait the advent of the coming winter apple nor do we need to emigrate to other states to have paying orchards.

Another thing the World's Fair year has demonstrated, and that is that we can and do grow grapes not excelled by any of the same class grown elsewhere. In my opinion we have a climate superior to that where the great part of the grapes are grown that are sold in Chicago. I confidently predict that a few years will yet see a larger planting of the queen of fruits in our part of the state, provided the market value will give a profit in growing them; and that is a question of labor.

There is no question but what the peculiarities of our soil and climate have given us difficulties in fruit culture. The time, too, since first we began to learn western horticulture has been comparatively short, but I think we can safely say that our trials have brought us nearer true philosophy and correct method than eastern growers have yet attained. A New York writer recently said: "The apple has failed more years out of the last ten in western New York than any other fruit they attempt to produce, and one of the things they have yet to learn is how to grow ap-

ples with some degree of certainty." Suppose you take Prof. Bailey's "Field Notes on Apple Culture" as your guide, and try to grow an apple orchard by it in Wisconsin. In ten years you would have done many things that would have caused disaster, if not complete failure. And yet what is good management here is good management in Michigan or New York. Our climate is a little more exacting, that is all, and would doubtless show our mistakes somewhat sooner than it would show the New York orchardist his mistakes. Prof. Bailey, however, at the meeting of the Western New York Horticultural Society last winter, said he had changed his mind in regard to fruit tree management. Since the growth of the apple tree is completed by July 1, he now says cultivation should precede that date each season. It is now about twenty five years since Mr. John C Cover, of Lancaster, in this state, published elaborate articles in the Wisconsin Farmer upon this topic, and his ideas have been the foundation upon which we have laid our practice and developed our philosophy. I wish to emphasize this and say that the keynote of success in apple culture lies in the fact that growth takes place in April, May and June, and that cultivation, pruning, fertilizing, or other management that looks forward to fruit production must start from this standpoint. If we expect fruit next year, we must grow the fruit buds this year and mature them on trees that have made a good reviving growth over their entire system, and that possess sufficient vigor to start the tree into next year's growing season until its foliage and root system can get hold of new food from earth and air.

The same principle holds good with other tree fruits as well as all fruit plants. If we expect fruit we must grow fruit buds at the time the tree or plant in its nature will grow them. If an apple tree has not produced fruit buds in June you can no more force that tree to grow them in August or September than you can force it to walk. To cultivate a fruit tree all summer long just as corn might be cultivated, is not common sense. To pile around the trees a large quantity of animal manure, rich in nitrogen, and expect the rains to take it to the roots when the tree requires it and not at any other time, or to expect the tree to get benefit from it whenever it does get to the roots is to expect miracles from chance. As well might a farmer say to a colt, "Here are ten bushels of oats for your summer's feed. I put them in the barn just out of our reach, but when you grow six inches higher you can help yourself to the whole pile!" To expect an apple tree to bear apples year after year in uncultivated, unfertilized tough June grass sod is to expect it to forage for its support as persistently as a politician hustles for office. To plow an old sod in an aged orchard and expect it to be brought into fruitfulness in a single year by such treatment to expect wonders in the way of quick decay of the sod and rapid work of the roots.

The bed rock of success in fruit culture is the growth, development, and maintenance of good leaves. While spraying is necessary to protect foli-

age from insect and fungus injury, extended experience causes me to assert that pruning, proper fertilizing, and cultivation at the right time will do much more toward producing healthy foliage and fair fruit in the orchard. Good cultivation is of first importance, and spraying a powerful adjunct to save and promote what the plow and cultivator develop. Weak leaves mean weak buds, weak wood, poor vitality and liability to severe injury by insects, fungus diseases and winters cold. To know how to grow apples is to know how to produce good leaves, good buds, good wood and at the right time, and how to protect from insects and fungus foes.

A very potent agent to precede cultivation is judicious pruning. It is not judicious to prune in our state in the fall or winter or after a severe cold winter that has injured the trees. Every bearing tree can be benefited by pruning at the right time and in the right way.

It should be understood that fruit trees, plants and vines can be grown past fruitfulness. Fruit bud production and development requires a certain ripening process or maturrty of growth. Fruit buds should not only be formed but developed by a storing up of elements that shall be available when the bud bursts into bloom, and impart a vigor and strength of growth that carries it on to develop fruit. Well developed apple buds are not only vigorous, strong, and good sized, but they are rich in mellow tints of color. Weak buds give weak, pale flowers. Apple trees may be "white with bloom" and yet yield no fruit from lack of strength. The apple tree pink with bloom shows by its color that it has been better cared for and will not fail of fruit.

A continuous growth of new leaves, new twigs, new branches, arms, laterals, runners or shoots is more or less incompatible with fruit bud development, when this growth is out of season. Common sense culture of all fruits grows vigorous leaves at the right time of the season according to the natural philosophy of the tree, plant or vine, and bends every energy to save these leaves in full health and vigor until they have fulfilled their great mission of preparing the plant for the next season. It is only from such common-sense standpoints as these I have indicated we can look forward with reasonable assurance of successful fruit culture.

DISCUSSION.

Mr. Grisim—Do you not approve of keeping an orchard cultivated as you would a piece of ground for corn?

A. L. Hatch—You must be governed by conditions as to that. You can not expect a tree to come into fruitfulness after being given up to grass, without some effort on your part. If your subsoil is extremely thin and you put on manure you will stimulate a growth that you can not control.

You never want to cut a single limb unless you have a good reason for it. Think of the philosophy of growth, and how this tree has to forage for its

nourishment. By pruning early in the spring you can induce a growth and produce it evenly. If you prune early enough, so the wounds heal over, you will not injure the tree. Prune after the severe winter is over so the limbs will be sure to heal over the last of March and first of April.

There is no spring when the ground is so dry that you can not, with cultivation, get the tree to grow. It is very rare indeed that the growing is interfered with by the drouth. If you have given good cultivation you have a vigorous growth early; you can mulch against the effects of drouth later.

Chas. Hirschinger—Is it safe to prune a tree at all after it has been hurt by a severe winter?

A. L. Hatch—No, sir. I have killed trees by doing it. You have got to grow the rootlets. The real effort is to get the leaves to draw the moisture out of the air.

Q.—When would you mulch your trees?

A. L. Hatch — In June, I haul out manure all winter, after the tree is done growing. I wouldn't draw it out in the fall when it would include growth. Too much moisture in the spring sometimes interferes with the cultivation you would give at that time.

Z. K. Jewett — Haven't you ever had growth in August?

A. L. Hatch — I have had, sir. A man must not place himself at the mercy of the seasons. If a man selects a nursery soil he does not want too rich a soil; if it is too rich he will have many of those annoyances that he will not want to have. It you take a light soil, light and porous, you can make trees that will weigh more for each cubic inch than the trees grown in a rich soil. Understand, now, that it is not the slowness of growth that gives a good tree, but that it is necessary that you get the wood well ripened.

H. W. Ash — Did you not have abnormal conditions in Wisconsin last year? We did in Iowa after the first of June. How will you produce a growth if you do not cultivate after the first of July?

A. L. Hatch — I would get it early in the spring, in April and May. If my position has stirred you up, I will say that plan has never failed me to produce fruit. I think what I have told you will help you if you will apply it. Mr. Tuttle can prevent his trees from having scab if he will only cultivate. If you do not know how to produce wood and ripen it, and how to produce fruit buds, you can not produce fruit.

Chas. Hirschinger — How much have we got to know, to know enough to grow fruit buds?

A. L. Hatch — You have got to know what Prof. Barnes told us last winter about the sap of trees.

Chas. Hirschinger—Mr. Hatch is trying to make us believe that we have got to know more than the professor. The fact he has been trying to make us believe is, that we must stop cultivating our orchards the first of June or July; now, if we do that we will have a crop of weeds. Suppose

we have no rain for five or six weeks, there wouldn't be a spear of grass, and suppose there comes a soaking rain, wouldn't that tree start new growth. Fruit trees will produce fruit buds whether we do all of these little items we have been told, or not.

Q —What is the difference between surface cultivation and mulch? Why not cultivate as well as mulch?

A. G. Tuttle—I had one hundred Duchess trees, that were two or three inches through, that were not cultivated; I had another orchard of about the same sized Duchess, on the same kind of soil that were cultivated, the orchards were about forty rods apart, and from the experience with those two orchards I am satisfied that an orchard must be cultivated; in one orchard the trees had been in June grass sod for several years, in the other the ground had been cultivated.

A. L. Hatch—I like surface mulch; you can cover the entire ground under the tree; and it will keep the apples from being bruised if they fall: but you cannot mulch an orchard to any extent, practically. Mr. Hirschinger has a better soil for fruit than I have, but if I had his orchard I should be in fear about it. I talk here as a fruit grower, a horticulturist, and not as a nurseryman.

Wm. Toole—There is one very valuable thought contained in Mr. Philips' paper with regard to the care of roots in the nursery and the care in planting. There is a good deal of fault found in our vicinity about trees dying, and I feel that it was perhaps of the careless way in which they were handled.

R. C. Kiel of Rochester, Minn., was called on.—Your president knows I am no talker. I am here to take a few points and to learn. I am pleased to be here and to see so large an assembly. I agree with Mr. Tuttle with regard to the Longfield and Hibernal. I have grown a good many apples, and I have found what he says of those two varieties is true. The Longfield is one of our best bearers; the Hibernal is one of the hardiest. The Minnesota apple crop this year was nearly a total failure, as was the strawberry and raspberry crop. Longfield bore more than anything else, but was not a crop.

Q.—What was the cause of the failure of a crop?

R. C. Kiel—They bore so heavily the year before that they did not have power enough to develop fruit buds. We cultivate the orchard. When the trees get too large to cultivate, people turn their hogs in the orchards.

Q.—What of the Peerless?

R. C. Kiel—I am not familiar with the Peerless, but I hardly think would take any of them in exchange for our standard trees. I wouldn't take the Wealthy in exchange for the Longfield. The man who bought the Peerless tree calls it the best tree in the world.

We mulch in the winter. I have three or four teams drawing manure from the city, and I think it is the best thing a man can do. I would prefer the Okabena to the Peerless; it is a prettier apple and is just as hardy.

The original tree is pronounced hardy by every one that has seen it. It is not sold under such restrictions as the Peerless. As you, doubtless, all know we held our horticultural meeting the second week in January in Minnesota; we had a large attendance and every one seemed pleased with the meeting. Our membership has doubled in the last two years, and I think it is through the suggestion of your worthy president, who advised us to offer small premiums to every one who would become a member.

Adjourned.

TUESDAY EVENING,
ASSEMBLY CHAMBER.

STATE INTEREST IN HORTICULTURE AND THE PUBLIC SCHOOLS.

CHESTER W. SMITH, Kilbourn City.

I suppose it would be a difficult task to find a single confirmed pessimist among the members of our horticultural societies. There is something about the love of nature, and the communion with her visible forms, that begets hope, and hope inspires happiness and happiness is health, and health is heaven!

The watchword of horticulture is a synonym of progress. Its societies are composed of that class of the world's benefactors who have discovered the royal road that leads to truth — the sure process of inductive reasoning. Civilization is manifest in nothing more plainly than in this increasing desire of the people to understand the scientific principles upon which the transacting of the commonest duties of life depend. That melons fail to mature because planted in the wrong time of the moon no longer satisfies the ordinary farmer; that currant worms can not be prevented from destroying the entire crop and bushes is no longer believed by the farmer's wife, who reads horticultural papers; and that schoolhouse surroundings, church and home decorations have a direct influence upon the education of the future citizen, is a horticultural maxim, and will soon be an axiom in our political economy.

It is not surprising, therefore, to the careful reader, that horticulture, taken in its usually broad sense, has entered into the problem of promoting the general welfare to an extent not surpassed by any other branch recognized by the state, as of public utility.

Yes, ladies and gentlemen, your horticultural enthusiast stakes his right to be heard upon the value of his discoveries; and the sincerity of his motives is apparent from the universal application of his achievements to all classes and conditions of society.

A brief allusion to history will best indicate why this advance in horti-

culture can be possible. In the first place all scientific investigation is comparatively new. This is especially true as to methods of teaching, as we shall need to remember further on. There has been going on only recently a work of close investigation into the causes and relation of things. That horticultural science is knowledge that is new and needed is evident by the great awakening along this line during the past fifty years. In England, among the first moves to develop this knowledge, was the establishment of the Royal Horticultural Society of England, in 1809, but not until 1846 did the society establish a journal.

The Royal Botanical Society of London, incorporated in 1839, has issued a quarterly report since 1880. We might go on all night, naming horticultural societies over all the nations of the civilized world, but all would be found to have been organized in the latter part of the present century. In France the "Paris Society for the Study of Nature and Horticulture," was organized in 1827, and twenty-five years later the French government declared the society of public utility. In our own nation among the first movements in this direction was the organization of "The Boston Horticultural Society," in 1829. To day such organizations, as we know, are too numerous to be counted.

Vast as the influence of all these societies has been in cultivating an interest in, and discovering the general utility of, scientific horticultural knowledge, they are not the only causes of the widespread demand for truth and right methods. I refer to the professorships in horticulture in our universities, and the experiment stations. I regret that time forbids more than this brief allusion to the increasing interest as shown by the history of the movement in the past few years.

No truth is more welcome to the real friend of humanity than this plainly manifest movement on the part of the common people, to straighten out, to harmonize all phenomena with known laws of nature. It occasions no surprise, then, to learn that our state has recognized this society as an educational institution by appropriating a sum of money—small to be sure—for its support. The state of Wisconsin thus puts the seal of its approval upon what the society has to teach. It says this horticultural society is not a political nor a religious body; it does not seek to establish any creed, nor religious dogma; it is not a private institution for private gain, but it teaches what is useful, and should be known by every man, woman and child in the state.

Now as the constitutionality of such aid to our society is not in question, further aid, as regards legislation, must depend upon the value of horticultural knowledge and education. I have said that our society has been recognized by our legislature. Let us see what another branch of our state government has to offer in behalf of the value of the cause we advocate to-night. I believe the education accomplished in our schools to-day is as near the ideal standard of its authors as it ever was, and what is just as true and should be oftener remembered, the ideals are far above what they ever were before.

The educational department of our state has prepared a "Manual and Course of Study," for the use of its common-school teachers.

This manual, besides being a guide and help in the branches required to be taught, contains suggestions to teachers as to what should be done in the way of teaching from nature's picture page.

This manual has gone through seven editions, each one an improvement over its predecessor, especially in the chapter upon the subject of nature lessons. Three years of the nine years' course, if the manual is followed, will be spent upon the study of plants. Twenty-five thousand copies of this manual have been sent to teachers in the past three years, and an eighth edition is nearly ready for distribution. If the teachers act upon the urgent suggestions found in this guide, let us see what the pupils in our common schools are learning. I quote from the seventh edition of the manual:

II. — MIDDLE FORM.

In this form the study of plants may be made to supply much material for oral and written language lessons and for lessons in drawing; but one of the chief objects of the lessons should be to fix and develop scientific habits of thought and study.

It is difficult to outline the subject matter of these lessons, as so much will depend upon the teacher, the time of the year, and the materials readily at hand.

In the winter season the following subjects may be studied to advantage:

1. *Seeds.* Study thoroughly the bean and the corn as two types. Soak each kind one or more days before the lesson is to be given, remove the skin and examine the inner structures. Carefully draw and describe the parts seen. Study the pea and compare it with the bean, looking for resemblances and and differences. Compare kernels of barley and wheat with corn. Plant the the several kinds of seeds in soil in small flower pots, in a shallow pan, or any convenient dish, and on cotton floating on water in a glass dish. After the plants come up, notice the influence of sunlight upon them. Let new features as they make their appearance be described and drawn carefully. What are seeds for? Why is nourishment stored up in them?

2. *Buds.* Carefully dissect the Balm-of Gilead bud or the cotton-wood. Note the scales, number of leaves, how the leaves are arranged in the bud, etc. How buds are covered and protected on different plants and trees. How they are arranged on stems. Relation to leaf scars. Why so arranged? Why are buds formed in the fall? Place twigs bearing live buds with their end, in water, setting them in warm places, and note the changes.

3. Study the shapes and markings of leaf scars and the markings on stems on different kinds of shrubs and trees.

4. Study cross sections of maple stems one year old and compare them

with those older, and with other kinds. Study longitudinal sections and compare several kinds. noting differences and resemblances. Persist in carefully drawing and describing what is seen.

5. Study longitudinal and cross sections of corn stalks and contrast with the maple.

The materials for study in the spring, summer and autumn are boundless, and can hardly be specified, except in a most general manner. Indeed, it does not matter so much *what* is studied, as *how* it is studied, though, of course, an effort should be made to fix some of the fundamental laws of plant growth, especially as related to agriculture. "Outlines and Lessons in Botany" (Ginn & Co.), will be found interesting and helpful.

These suggestions as to nature lessons, it should be remembered, do not have the force of suggestions upon physiology or geography, for no law has been passed requiring teachers to be examined in nature lessons, for third grade certificates. There is an idea prevalent among leading educators that third-grade certificates should not be granted for more than one year, and teachers not qualifying themselves for second grade certificates after a year's teaching, should be refused schools. I relate this here as showing the progress in public sentiment for a higher grade of schools, and to show also that this sentiment is coming our way. We have seen, therefore, that civilization is progressing along a scientific path; that horticulture, embracing as it does some of the most common interests of life, has become of world-wide importance, and is now recognized by individual, and state, and school, as of general utility.

But we must not be satisfied with this telescopic view of our subject. What is there about horticulture that has caused all this ado, and because of which our society asks further legislation?

It will be impossible for us to even name in detail the many ways in which horticulture comes in touch with the people. Therefore, we must pass with but a remark, the fact of an almost universal interest in gardening; that no home is considered complete without its spot of ground for vegetables, and fruits and flowers; the fact of the vast amount of waste because of ignorance, some of these wastes affecting not only the present generation but all coming generations, as in case of the extinction of insect-eating birds; remembering that a very large majority of our people are directly engaged in farming, and that all industries are largely dependent upon agricultural interests; remembering, too, that the consumption of fruits and vegetables is increasing with the facilities for better and more luxurious living, and the decreasing animal instinct in man, which leads him to kill and eat animals, bearing in mind, I say, and placing to the credit of horticultural knowledge all these obvious facts, let us notice other and perhaps less apparent uses of such education.

It is in the higher senses that we, the people, need most the aid of horticulture. It is on the side of its moral, sometimes called decorative value,

that the people need most to be enlightened. It is on the score of its moral and scientific value that we claim for it a place in our common schools. It is time the American people were thinking more of the sentiment that builds up conscience and self respect, and not so much of fortune, power and pelf. It is high time we recognized as practical the sentiment that makes for sobriety and honesty; it is high time that we recognized as practical the sentiment that makes for health, industry and contentment of our great industrial classes.

It is in the celebration of Arbor Day that state interest in horticulture has seemed to come in closest touch with the schools. This custom of Arbor Day, starting in another state as a matter almost of necessity for self preservation, is adopted and carried out in our own state in a way that cultivates and develops these nobler qualities of the soul. It may be that there are criminals who love flowers; but there is not in God's economy, a more certain truth than that the love of flowers never caused any one to lead a criminal life.

Arbor Day in most Wisconsin towns means education in the love of the beautiful. It means the development in every juvenile heart a love of flowers, and a respect for the higher things of life. It means respect for others; it means patriotism. Hear a noted flower lover and author upon the utility of floriculture (Eben Rexford): "It greatly pleases the lover of flowers to know that horticulture is becoming so popular as a recreation among professional classes. A more intimate acquaintance with flowers and a deeper knowledge of their habits is sure to increase the appreciation of their beauty and many charms, and this professional class which turns from hard work to the cultivation of flowers, as a means of relief from daily strain and worry, is the class which can be expected to do most for them among the masses in return for the benefits received from them. There is exercise for muscle in garden work, and a let up from brain work, and the change is relief, and relief is pleasant. It is not long then before the garden worker becomes enamored of his task; he sees there is more in it than he had thought. It fascinates him by its novelty, and its ever-increasing interest extends the possibilities in reach of even an amateur. In floriculture there is a vast deal of pure ennobling pleasure, and infinite profit; for the health that comes to the weary business man or woman is profit of the highest kind." It is one of the functions of this society to spread such sentiments as I have just read, but it is the privilege of the schools to teach such sentiment to the nation's millions.

The benefits of horticulture to every professional man, to every business man, to every lover of his home, however humble, are almost limitless in possibilities for making life happier, for incentives to action, for results in human nature that will remain to bless mankind.

That the cultivation of flowers and fruits creates a love for them and thereby increases the demand and therefore sales, is self evident. Whatever tends to direct attention to that which cultivates, educates, and builds up, is included in the beneficiaries of such action.

The question of "What shall we do with our boys during vacations?" is one whose importance has been too often neglected. Idleness and its attendant temptations to evil habits, evil companions and loafer's resorts soon sap the manhood from our American youth and leave them pale and weak specimens of a fast age. Take the average loafing boy and analyze his tastes, his motives of daily action, his ambitions for the future, — the near future; for he seldom looks beyond a week, — his associations are not ennobling.

Something accomplished, something done, is what earns a night's repose. Every habit, every association of his, has pulled him down and away from the purity of heart and clearness and truthfulness of mind, that enable him to appreciate the beauty of the flowers, and take pride in the cultivation of fruit. His appetite has been corrupted by feverish and false excitements; rank with their shriveling results. To avoid these tendencies, work in that which ennobles, inspires the mind with good ambitions, lifts up the thoughts to higher ideals, must be provided.

"The garden," is one of the answers to the problem of idleness in city and village. The cultivation of fruits and flowers is a safeguard from low motives and vicious tastes, that are incident to the hived humanity on the streets and alleys of a city.

If children are early taught to take pleasure in that which is wholesome, if they are reared with a love of the world in its truth and beauty, if they early learn to distinguish between the pure and the debasing, they will be easily lead to take pleasure in contributing to the world's fund of true enjoyability.

All this is possible to the wise parent who will devote a little time to the study of nature, to the interest in floriculture, for instance, sufficient to hook the heart and mind to its ennobling tendencies and purifying tastes.

In suggesting more general education in this branch, we are not to understand that the instruction is to be limited to horticulture, although this word covers most of the ground in what is known in the school course as "Nature Study." The schools of to-day seek to educate, to develop, and to discipline the mind to powers of observation and original thinking; and the possibilities of horticulture along this line, for illustration and ease of application, transcend all other fields. Schools are expected to expend from one hundred dollars upward for apparatus for the study of the abstract, never more than half understood by the best of pupils.

Take the subject of geography, for instance. As taught without other illustration than the map or globe, it is, in ninety-nine cases out of a hundred, a purely abstract study, and devoid of results, except to clog the mind, and blunt the power to reason correctly.

This is the language of the state upon this point, as given in our manual:

"NATURE LESSONS.

"Education, in its elementary form, consists very largely in bringing into activity the latent faculties and powers of the child-mind, and in direct-

ing and strengthening them by legitimate use. In no one thing have public schools heretofore been so negligent as in training children in the habit of observing the wonderful things around them. They have often been led to believe that the only source of information concerning everything about which they want to know is the meager text-book which they so laboriously strive to master. The great book of nature, to be read with eye and ear and touch, with its vivid and living object lessons, and teeming with useful knowledge which any child may gather, is a sealed book. All the discipline and culture and store of interesting facts so near at hand lie untouched and unused.

More and more is this defect in our schools realized, and the demand for some form and measure of what may be termed "nature lessons" increases. Books upon this subject and articles in educational papers have rapidly multiplied during recent years. Teachers have now within reach ample means of preparation for doing something in this way for their pupils.

But suggestions, with no penalty for ignoring them, are, to say the least, slow of results sought for. With a law requiring third-grade teachers to be qualified in this branch, this "glaring defect in our schools" would be corrected far more speedily.

With this law and a proper appropriation for our state society, enabling it to broaden its facilities for reaching the masses and to extend a fraternal and helping hand to the thousands of little palms now stretched out for help from the bare walls and dull routine of our common schools, Wisconsin would soon leap to the front as a fruit growing state, not only, but as an educated commonwealth. This society has done much to gain the sympathy and enlighten the understanding of both teachers and pupils of our common schools. Its reports, especially the last, have been sent to many schools, and will be extensively read.

But what it has done in the way of reports, plant distribution and Arbor Day celebration, is but but a drop in the bucket to what might be done by sufficient means to establish more experiment stations, organize school societies for floriculture, and, above all, to arouse general attention to the great work of educating the children to "list to Nature's teachings."

Recognizing the importance of our work, let there be a united effort to secure the recognition in state aid, commensurate with state interest and school needs. In closing, let us emphasize this truth, so seldom fully realized by the hard-working parent and the text-book educator, that the door to the pleasures of life are open widest to those who have been educated to appreciate them. Then let us teach the children to know real things of the world, to recognize the blessings all about them; teach them to take pleasure in the good, the true and the beautiful, so often deeply hidden from—

> "The vast humanity that beats
> Its life along the stony streets."

A human soul with no inspiration to higher achievement, no purpose in

life and no appreciation of God's gifts to man is a blighted being, an accursed thing!

"Life is so grand, so beautiful, so splendid in its opportunities for action," let us not wait, but work, let us carry to all the earth this Gospel of earth's lovelin ess, let us teach this language that God speaks to us through his interpreters, the flowers, the birds and the multitude of Nature's wonders. Let us reach out and up and lead the way to a better appreciation of this life's treasures, that we may be better lovers of mankind, better worshippers of God, and have higher hopes for the future.

SECRETARY—There are so many thoughts in this paper right along in the line of the work presented by the secretary of the Missouri State Horticultural Society, that I think we made no mistake in putting Mr. Smith on the committee to make some arrangements, of this kind, for our schools. I do not think it will be long before something will be done in this direction.

NOT PRETTY, BUT PRACTICAL.

VELMA C. MELVILLE, Sun Prairie.

We were sorry when we received your secretary's invitation to prepare a paper to be read before this meeting; sorry for two reasons: one, we doubted our ability to write one; the other, we doubted our courage to read it if it were written.

Considering the honor conferred, however, and the fact that we had already been obliged to "decline with thanks" on several like occasions, we determined to at least make the effort; but what should we write about? We know not the A B C of Horticulture from actual experience though a model little fruit farm and magnificent flower-garden surround all our "castles in the air." After some reflection we came to this conclusion. We would, first of all, select a pretty subject—you know there is every thing in the name—then we would forage about for a few facts, sandwich in some pretty theories and finish off with some pretty verses.

At about this crisis in our calculations, we received another letter from your secretary requesting us to select some subject *outside* of horticulture. We caught our breath hard; there was a momentary funeral while we buried forever from thought our pretty subject, pretty theories and pretty verses; then, with grim determination, we said:

"If we cannot have a *pretty* paper, we will try for a *practical* one."

We suppose that we all have our hobbies and pet theories; and we suppose, too, that it is a good thing. If we all had a bent for floricult-

ure alone, and indulged it, from whence would come the satisfying potato, the toothsome cabbage, the crisp celery or the perfumed onion? If we were all preachers, who would nod in the pews? If we were all devoting ourselves to the temperance reform, who would be looking after Hawaii or amending the Wilson bill?

So, you see, we must needs differ in tastes and hobbies; and while you may be head and heart in horticulture, we are deeply interested in woman and the avenues of employment opening up to her; in girls and their preparation for the battle of life; in a word, *in woman and her work.*

This is a subject that interests us all directly or indirectly, theoretically or practically; and if it does not individually concern us today, it may to-morrow. We live in a time when, literally, "we know not what a day may bring forth."

In this age the wage-earning woman is largely in the majority, mind, we do not say the bread-winning woman, though perhaps we might and speak truly.

There seems implanted in every wide-awake woman's breast an ambition to do something, to earn something; an ambition above that of the dumb creature that toils the long hours through content with food and shelter.

There is an inspiration in working for wages; and we pity less the woman who must earn her bread, then she who lounges aimlessly amid splendid surroundings—with nothing to do. The present desolation in our land seems doubly dreadful because of the almost universal wail, "no work! no work!"

Wage earning women may be divided into two classes: those who choose to work and those who must work; and these last must be subclassified into those who, because of family cares or ill health, must find remunerative employment at home, and those who are free to go where and when they will.

If you will pardon a personal allusion, we will say that our position as editor of four home departments, brings us into confidential relations with thousands of women who either are earning wages or are extremely desirous of doing so; and could you read our correspondence for one year we think you would not wonder at our interest in the subject, and right here we want to say, we are aware that, primarily, this paper to-night does not fit our audience; in a secondary sense, we hope it may; in the sense that we are our brother's keeper; our sister's keeper; in the sense that "no man liveth to himself alone." We only purpose to call your attention to two lines of thought, trusting that you may be quickened in your aspirations toward helping others; that you may unite with us in giving a practical denial to the hackneyed statement that "woman is woman's worst enemy." Here is a sample of the many letters that stir our sympathies: "My husband is an invalid. We

have three small children and are in debt. I must earn something to eke out our scanty means. I can not go from home; what would you advise me to do?" Can we have the heart to reply we know of nothing you can do; yours seems a hopeless case?" Nay, verily! And so in our intense desire to help such petitioners as the above we have been listing home employments for women and will here briefly summarize, asking that you each enlarge upon these and add to until the result of our combined thought and research make a notable chapter in "woman's work for women."

First of all, if a woman can command a little patch of ground she possesses capital; but it is hard to make many of them believe it even with facts and figures staring them in the face. Our advice to such a one is to try the employment nearest hand, *and keep trying it.* Don't waste vitality and midnight oil sewing for the neighbors or writing a poor little romance that nobody will buy. Better save your strength; take your full share of nature's blessed gift, *sleep*, and then either cultivate a truck patch, raise small fruit, go into the poultry business or set up as a florist or an apiarist.

Since vegetable and fruit raising have branched out to include canning, pickling, preserving and the various companion industries in which women excel, we present these with faith and fervor. Just the other day an Iowa farmer's wife wrote: "I sold over $100 worth of cucumber pickles and tomato catsup this fall, and have considerable on hand to dispose of through the winter and spring. I put them all up myself, besides doing my housework alone. I expect a large trade next year."

You horticulturists are nobly leading on in the matter of small fruit culture, thereby proving yourselves to be public benefactors; but, sisters, confine not your knowledge and experience to yourselves and these meetings; by tongue and pen encourage the timid and doubting to try something along these lines. Woman is slowly coming to take her place in floriculture, coming to see that it is possible to make such an occupation yield profit as well as pleasure.

Poultry raising is profitable only when separated from the old idea of "keeping chickens." Even in this enlightened day plenty of people tell us there is no money in poultry and, viewing *their* efforts, we are not inclined to dispute them. But there is another side. We know a number of women who are all but getting rich by pulling two strings in the poultry business. They keep only the best, selling both birds and eggs for a high price, and then they write up their experience for farm and poultry journals and sell that for a good price. Of course in this, as in everything else, one only succeeds by repeated failure.

"We rise by the things that are under our feet,
By what we have mastered of good or ill."

Then the bee business:—An Illinois woman makes the following report: "A swarm of bees settled on a bush in our garden; we hived them,

became interested in watching them, and before fall had secured twelve other colonies. From these we sold $23 worth the next year, but were as proud of that, because it was the first honey money, as we were over $293 worth the next year, when we had 1,800 pounds of comb honey and 2,300 pounds extracted, besides all we wanted for ourselves and some to give away." Later, she wrote: "I wish to encourage other farmers' wives to try what they can do with a few colonies."

A friend in South Dakota makes her money by raising onions for market. Another might make a specialty of cabbage, another of celery, another of popcorn and so on. We believe in making a specialty of some one thing, and *sticking to it.*

For the woman who cannot leave home and yet can truthfully say "no foot of land do I possess," there are fewer doors open; and especially in behalf of these we beg practical suggestions. There is bread-making for one thing, dress making, cleaning and dyeing goods, such as curtains, shawls, etc., carpet weaving and knitting — not knitting in the old-fashioned way, but with a machine. At least one woman in every neighborhood can attend to her family cares and make fair wages with a knitting machine.

In the case of the " free-footed " woman, time forbids mention of the many avenues of livelihood that she may enter. Of course it is one thing to try and quite another thing oftimes to succeed, and yet success is fairly sure if one has the requisite education and training.

What women *need* — but there are two points more we would mention before finishing this sentence.

There is certainly something new under the sun — new to us at least; and the enterprise claims to have had its birth at the World's Fair. If it succeeds, it will shine as a beacon star to guide thousands of other homeless, unfettered women on to happiness and prosperity. At the woman's dormitory, five women, after much discussion, formed a joint stock company with a capital of $1,500. This they proposed to invest in land in southern Missouri, said to be the home of the peach and the big red apple. As a witty friend expressed it: "Their plan is to have a co-operative farm, manned entirely by women." Certainly their plans are well laid and we await results with much interest. That a woman *can* farm is being proved by more than one of our sisters; not least among them is Miss Pollard, of Dugdale, Minn., who is said to be the proud owner of 320 acres of land, and is named among the successful farmers of the state. She hires no help save in harvest; neither does she wear male attire.

Further there is ever the demand for skilled labor in our homes; and we are apt to wax warm when we get on this subject. Why is it that the average American girl will all but starve or beg before she will enter your kitchen or ours? Who is in fault? There is something materially wrong some place, and we are not disposed to lay the blame

wholly on mistress or maid. We are all to blame; the whole social system is to blame; and times will be no better until the so-called homely art of housekeeping takes its proper place; until the mother teaches her daughter that it is an honor to do housework, if so be she does it well; until our state supports a school of cookery and household economics as well as one of agriculture and dairying; until we, as women, give the servant girl the same consideration, recognition and courtesy that we do the stenographer, the telegrapher, the teacher or any other wage-earning individual. But to return to that unfinished sentence — What woman need is training and education.

Ask a man why he does not engage in this or that, and he will promptly reply: "I am not fitted for it; I have had no preparation." Even so, but if a woman is brought face to face with necessity, prepared or unprepared, she is sure to try something; she is not apt to turn tramp. Why, oh why, will fond parents educate their sons to some trade or profession and permit the physically weaker child to rush unarmed into the battle of life? We trust there is a better day coming, and, while we do not profess to powers prophetic, we indulge the hope that out of woman's work for woman will evolve institutions where girls will be taught, not only fancy cookery, but how to make poor men prudent wives, as well as practical methods of wage-earning. Just at present, perhaps, all we can do is to think and plan for those too apathetic or harassed to think and plan for themselves; to be ever ready to lend a helping hand; to love our neighbor as ourself.

There are many sides to the woman question, as it is agitating philanthropic minds; but a voice whispers to our soul: "Woman's work for woman will solve all problems; it is the little leaven that will leaven the whole lump."

A HOME BY HORTICULTURE.

Prof. J. E. COLEMAN, Evansville.

The building and loan associations, which have become so popular in recent years, have done very much for the workingmen of our country. Their principal object is to enable the laborer who depends on his weekly earnings to systematically lay aside a small amount, besides what he usually pays for rent, until he is the possessor of a good home. I have no fault to find with these associations; on the contrary, I am greatly delighted with the work they have accomplished.

What I wish to do is to show how a home may be secured by horticulture, and how fully one can eliminate "hard times" from the experience of an ordinary lifetime. I know it will be impossible to interest a

very large number in rural life. There is also a possibility of bringing about an over-supply of the products of the farm and garden, but that there is any serious danger in this direction I have no fears. If a large number in our state, the coming spring, should commence fruit and horticulture, one year's experience would reduce the number by more than one half; the second year would subtract, at least, sixty per cent. from the remainder, and those who would hold out after the third year would be very few, but they would be well started toward securing pleasant homes.

A person, to succeed in any calling, must love his work. In addition to this, he must have some adaptability to the task in hand.

To till the soil successfully is not the work of a novice; to raise fruit and garden vegetables requires skill; but because this is true, it does not follow that those who now have no special liking for this work can not succeed at it. I can give instances of those who commenced the work very reluctantly, through the advice and persuasion of others, and soon found it very fascinating as well as remunerative. As for myself, every plant is an object of interest, even a weed, especially if it grows on my neighbor's land.

Let us start with $500 per year as a reasonable remuneration for the first few years' work at horticulture. This is more than the laborer can earn at $1.50 per day, working 300 hundred days in the year, and is not much less than the skilled mechanic can realize for the same time. We will suppose a certain place contains from eight to ten acres, with an indifferent house upon it, and some kind of a barn, for which $125 must be paid as rent.

Now, before predicting the possibilities on this unpromising piece of land, let me call your attention to the achievements, in horticulture, of those, some of whom, only a few years since, were amateurs: Mr. E. J. Scofield of Hanover, Wisconsin, stated before our society last year that he had sold $600 worth of red raspberries from an acre. Almost every one is familiar with Mr. Bubach's enormous crop of strawberries, 1,700 bushels from five acres. J. M. Smith, Esq., of Green Bay, picked 412 bushels of strawberries from an acre. He is also credited with a 450 bushel to the acre crop of potatoes, and I am informed that his forty-acre garden yields an average of nearly $400 per acre. A lady in Sparta sold over $600 worth of blackberries from a single acre. I asked Mr. Fox what was the most he ever realized from an acre of grapes; his reply was, "$1,200." President Thayer tells of a yield of 800 bushels of onions to the acre. James Bufton raised two crops in one year on four acres; the first a crop of peas, then followed with beans, from which he realized $890.32. I can refer you to a man who realized above $1,100 in a year from two acres devoted t o chickens. Many of you will wonder what chickens have to do with horticulture. If your neighbors' chickens scratch your garden as my neighbors' chickens do mine, your query

If you now will go back with me in thought, to our hero on the run down, ten acre farm, for which he has to pay $125 rent per year, what shall he start with? The adaptability, as regards the character of the soil, the opportunity of market, and what the cultivator knows concerning his work, should determine this. If he is reasonably sure of a good market for strawberries, I would advise him to set out one acre of strawberry plants in the spring. With good cultivation, on fair soil, he can reasonably expect a bushel of fruit per square rod. Of course he should have six or eight varieties, as all varieties do not yield equally well all years, and some varieties fail on some soils. If anything like a fair price is received, this acre of strawberries will bring in quite a little money.

Three or four acres should be devoted to potatoes the first year, which ordinarily, ought to bring in from $100 to $150. Potatoes are always in fashion. Sometimes the price is low, but with skillful management and good cultivation, they can be grown so that the actual cost, aside from labor, is only a few cents per bushel.

An acre might be devoted to onions, the returns of which will materially help the income; but, if no good market can be found for onions, some other crop may be substituted; if nothing better, beans can be made to pay well. The secret of success is in finding out what the local market will take at good prices, and then how to grow these crops at the very lowest cost. To solve these questions successfully, will furnish a very complicated but interesting problem, and will require the same kind of business tact that is so well developed in the successful railroad president.

Fifty fowls should be added to the outfit, and all ought to have their heads taken off the following winter if they do not pay expenses and a dollar apiece besides. Of course I would have a good cow, and would make her save from $50 to $100 a year toward the support of the family, and her keep would easily come from the place.

If our farmer develops a capacity for adaptation, and is determined to secure the desired end, he will find some truck crops to help him out on his returns, or that will help him to get his land in condition for the following year's work. If the returns from the ten acres the first year are not all that might be desired, something may be realized by working for others, and an industrious man seldom finds difficulty in getting a paying job.

The second or third year, if it is found that a fair living can be made, and something above the ordinary expenses of the family, it will be time to rent the property for from three to five years with the privilege of buying it at a stipulated price. He is now prepared to commence setting out raspberry and blackberry plants, also currant and gooseberry, as means will allow.

The judicious adjustment of the amount of each kind of fruit should be made so as to supply the wants of the best available market.

would be answered. Now, I grant that these instances, to which I have referred you, are very much more than ordinary; and while I do not question the truth of these statements, I believe it would test the ingenuity of these very men themselves to duplicate some of these wonderful yields; but I cite them as indicative of the possibilities in horticulture.

At the end of the third or fourth year, our gardener will have learned something of his possibilities in horticulture; if he has succeeded at all, he will be on the way to prosperity; if he has failed it is time to conclude that there is no chance for him in this kind of work.

I am sorry that it is necessary to present this scheme for securing a home on a basis which is so theoretical, but that you may know that there is some foundation for my theories, I will add a little of my personal experience in horticulture, which I have followed for a few years; partly to piece out a small salary, and more, to stimulate flagging vitality. I have but a small piece of land, and have not always managed that to the best advantage.

Several years ago I undertook to raise 100 square rods of onions Having had no experience in raising onions, not even a bed of onions in the garden, I, of course, soon found I was making some kind of a mistake at every turn; but when at the end of the season, the last bushel was delivered from the patch, and my figures showed that the 100 rods had brought me in $100, I felt that my effort in the onion line had not been altogether a failure. The following year my health was much poorer, and at first I thought to put in a smaller bed, but finally decided to use nearly the same space as the year before. It proved to be a wet season, and it seemed at times as though the weeds were sure to take entire possession. At one time I threatened to abandon one half the bed, but finally persisted in fighting the weeds to the last. Onions were a good crop that year, in fact, it was next to impossible to get rid of the bulbs, but without any special effort, although I did send a part of a load of culls to the creek the next spring, my 100 rods had furnished me another $100.

I have been in the habit of growing an abundance of strawberries for family use for some years. I considered them too good to sell and wanted all of the family to have as many as they cared to eat if I could raise them. The spring of 1891 I decided to set out an acre and try my hand at making money. Some of you remember that spring. Before I finished setting plants it rained, and kept raining, yes, the floods came and washed over my beds, but I finally succeeded, between showers, in getting the plants all set out. The rains prevented cultivation, but did not hinder the weeds from growing. Many times up to the middle of July it looked as though I would be obliged to abandon the bed, but nothing daunted, I persevered. In the fall I mulched with oat straw, as I could get nothing else. And how the oats did come up in the

spring! Well, I sold $200 worth of berries from that acre, and more than half of it was clear profit. I need hardly add that I have learned some things by experience.

I have had some experience raising potatoes; usually I have succeeded quite as well as my neighbors. One year I was favored with 200 bushels of fine tubers to the acre, but usually I have had to content myself with a 100 bushel crop.

I hardly ought to conclude my experience without mentioning, at least, two crops of weeds, which were in their way, a most extraordinary success. One crop I might charge to a wet season, but theoretically, no man ought to have any excuse for raising a crop of weeds. When my potatoes were in blossom, I supposed the weeds were all conquered, and I never saw a finer looking potato patch than mine was at that time. How the weeds managed to get so large befor time to dig the potatoes I never quite understood, but bad as they were, I succeeded in getting a crop of more than 100 bushels of potatoes to the acre. The other weed crop, which was such a shining success, was in my family strawberry patch. I had been carefully following the directions given in the reports of this society, and hoped to get a crop of berries without cutlivating in the spring. The weeds that appeared, I have since called milk thistles, but I had never seen anything like them before. When I first noticed them, I hoped I could, at least, secure the crop of berries before the weeds were large enough to be especially troublesome, but oh, how they grew! I had cultivated the land, where the bed was situated, for a garden for a number of years, and as this was the first appearance of the weed, I have sometimes thought some evil genius must have sowed the seed. Many of the weeds grew to be over four feet high, and they became an exceeding great army. When I realized my strawberry crop was ruined, I commenced a war of extermination, and I think they are now pretty well subdued.

I do not advise anyone to leave a reasonably well paying business to undertake this work because some have made so decided a success at it but for those who are out of employment, and there are many such now, and for those seeking a more congenial employment than they now have, and can change gradually, I sincerely believe there will be both pleasure and profit for such, provided they are willing to *grow* into horticulture and will not desert it because they sometimes find it a difficult road.

There are in the suburbs of nearly every village in our state places such as I have described, that would make first class farms for the art of horticulture, and could be so managed that the owner would be sure of a fair income until he no longer needs it.

If this paper shall help some one to a pleasant home or encourage him in his effort to secure a fair income, its purpose will have been accomplished.

Voice from audience—I do not think that paper is theoretical. I have been in the business a long time and I *know* it is practical.

Adjourned.

WEDNESDAY MORNING, February 7.

SENATE CHAMBER.

Vice-President Chas. Hirschinger in the chair.

H. F. Thurston and Clarence A. Shamel, reporters for *Farmers' Review* and *Orange Judd Farmer* were made honorary members for the ensuing year, on motion of the secretary.

Moved by A. L. Hatch that appropriate resolutions be sent to four members of our society—ex-President J. M. Smith, Green Bay; Daniel Huntley, Appleton; E. Wilcox, La Crosse; C. A. Hatch, Ithaca—who are ill and unable to be with us, and that they be signed by the president and secretary.

Motion prevailed.

ANNUAL ADDRESS.

M. A. THAYER, President Wisconsin State Horticultural Society, Sparta.

Members and Friends:

We are called together at this time to compile another chapter in the History of the Wisconsin State Horticultural Society. We are here to state facts, rather than advocate theories. We are here to give real experiences, rather than promises of future deeds. We are here to collect and record information so sure and so accurate that all may follow, with a reasonable assurance of success.

It is wise counsel that admonishes us to "think three times before we speak." The same wisdom should be used in making statements before this society which are to enter into our public transactions and become a part of Wisconsin horticultural history. History is sometimes divided into two classes—sacred and profane. Let those who follow our teachings, by reason of their success, look upon our work *as sacred* and have no cause for even a *profane* thought, by reason of their failure.

It is not always pleasant to be referred back to our own errors, even though no harm has been done, but when a published error has been adopted by many and extends into their experiences, bringing disappointments in its train, as is often the case in horticulture, we are then admonished most strongly to build our records with care. By careful statements, conservative recommendations and good practical work in all departments of horticulture, Wisconsin has achieved a reputation

second to no other state. Our reports are eagerly sought for and find places in many fine private and public libraries. Our varieties of fruit and methods of cultivation are favorably mentioned in all the lea ing papers of the country, and generally endorsed by the most successful growers.

And yet I feel that horticultural work in Wisconsin has but just begun. We have a grand field for labor and a wonderful work to perform. We should not be satisfied until every child in Wisconsin is a practical horticulturist, and every home supplied with fruits and flowers throughout the year. Our severe climate will not permit us to imitate more favored states to any great extent or adopt their varieties and easy methods of cultivation. We must originate new varieties. We must practice more thorough methods of protection and cultivation. *In fact*, we must lead and *others* must follow. There is yet to be the best apple, and Wisconsin *should* and I believe *will* yet produce it, as she has already done with several other fruits.

The development of fruit culture in Wisconsin the past few years is very great. Few yet dream of the possibility of this great infant industry. For many years people have feared fruit growing would be overdone and produce no profit, but the reverse is true. The demand has always exceeded the supply and now it is practically impossible to produce *too* much first-class fruit of any kind. Study the best methods of growing best fruit, distribute it to the best advantage, so that all may have what they need, and there is little danger of overproduction.

Cold storage has come to preserve our most delicate summer fruits in all their beauty, form and flavor for the winter table. The cannery and evaporator are ready to seal and preserve our dainties for winter use, and then comes the rapid transit, and refrigerator cars to our very doors to distribute our surplus, in any form, to all markets, even to the uttermost parts of the earth.

We should never fear our production so long as we are sending $50,000,000 abroad every year for foreign fruits and nuts. Even the fragrant onion, which sometimes produces 1,000 bushels to the acre, and is grown in hundred acre lots by some of our producers, does not supply the home demand, and millions of dollars went abroad last year for foreign onions.

Every year people are consuming more fruit. It is becoming a necessity, as it should be, not a luxury as it has been. Health, economy and pleasure all unite in demanding its universal daily use. Few realize the enormous quantity already consumed by our people. Exact statistics cannot be obtained, but quite reliable estimates may be made of certain productions, and the figures thus obtained are truely astonishing. It is estimated that more than 10,000,000 bushels of strawberries are annually produced in the United States, and as many more berries of other kinds. Chicago alone disposing of more than 500,000 bushels. California serves our tables with 8,000,000 pounds of prunes, and we receive as many more

from the south of Europe. California also furnishes us 33,000,000 pounds of raisins. We consume 60,000 tons, or more than 6,000 car loads of bananas every season. Last year $250,000,000 was expended for eggs; we gathered 1,000,000,000 dozen from our own nests, and were still obliged to send across the water for 16,000,000 dozen more. The 180,000,000 turkeys grown every year, are flavored with 1,200,000 bushels of cranberries.

The orange product of Florida, in the last eight years, has increased from 600,000 boxes to over 4,0 0,000 and more than 10,000,000 boxes may be expected every year when the present plantings reach maturity. California must greatly exceed this amount, and yet we imported $2,000,000 worth from foreign countries last year.

The estimate of grape production, the largest of all, is limited to a few localities. The Chautauqua belt embracing a territory along Lake Erie some fifty miles long and three to five miles wide, has more than 25,000 acres in grapes. They sent 40,000 tons or 30,000,000 pounds of table grapes alone to market last season. This industry, mostly built up within the last ten years, represents a capital of $10,0 0,000, and gives permanent employment to 15,000 people. Other localities in New York, Pennsylvania and Ohio are very strong competitors in this industry, while the acreage is equaled or excelled by several single counties in California.

No; the dangers to fruit growing comes not from over-production, but rather from the selection of varieties unsuited to our climate and soils. There is danger in inferior stock with low vitality to commence with. There is danger in insufficient cultivation, producing small, inferior fruit. There is danger in careless management, inviting worm, bug, blight and the thousand enemies of the fruit grower. There is danger in poor packages. There is danger in dishonest packing, but the greatest danger of all comes from a lack of business principles in the sale and distribution of products. The free distribution of strawberry and raspberry plants to the school children of the state, is doing much real practical good and should be continued.

We acknowledge with thanks, substantial aid from the department of public instruction by use of Arbor day circulars. I believe the present plan should be enlarged and so modified as to make less work for our officers. I would suggest that application for plants be made direct to the person furnishing them, and that six strawberry plants be furnished to every pupil without regard to age or number, provided the parent or guardian assist teacher and pupil in caring for same. To continue this free distribution for another year, I am authorized by "The Thayer Fruit Farms," at Sparta to donate six strawberry plants to every pupil in the schools of Wisconsin without restriction as to number of plants or age of pupil. Each applicant to be furnished with complete illustrated instructions for setting plants and caring for same. This distribution to be under direction of the state society as heretofore, and on the same

general plan. Of the thirty thousand plants offered last year there remains a large excess, but the many applications and numerous reports show a continuation of the great interest in horticulture among the young folks. Teach children to love fruit and flowers when young and they are almost sure to practice horticulture in after years.

Since our last meeting the greatest exhibit ever known has come and passed away, leaving with us some regrets but many pleasant experiences. Regrets that we were treated with such parsimony in preparing for and continuing our fruit exhibit. Regrets that our state board was not more in sympathy with our work. *Pleased* to know that in competition with other great fruit growing states, Wisconsin is superior to many and second to none. Pleased to know that we have maintained our reputation as a state and that thousands of admiring visitors were surprised by the beauty, quality and variety of our fruits.

For three years I have served you as president of this society. During all that time I have to acknowledge great help, many courtesies and much forbearance on the part of members. I have endeavored at all times to serve you fairly, faithfully and well. It has been my study to advance the interests of horticulture wherever it could be done.

During this period our membership and local organizations have doubled in numbers, and we are now a prosperous and united society. It has always been and still is my belief, that the chief officer in societies of this nature should not be retained for long periods. Short terms and energetic work will generally best serve our cause.

I therefore, cheerfully surrender up the trust I have held so long and shall be pleased to assist any member to this honor, who will give us true, faithful and energetic service.

I thank you all for so many favors in the past and hope to find you always prosperous in the future.

REPORT OF B. S. HOXIE, SECRETARY.

Mr. President and Members of the Wisconsin State Horticultural Society:—In presenting to you this my fifth annual report, I do it with a sense of pride for our state, as I believe we have passed that critical period of doubt and uncertainty, which to a degree was shared in by many of our state as well as in other fruit regions around us, as to whether apples could be raised with any success or profit in Wisconsin. The splendid exhibit of our fruits at the World's Fair not only surprised the people of our own state but the whole world that we could raise fruit of such quality. Indeed, we made favorable comparison with the best there was in the fine appearance and quality of our apples, and possibly only one other state showed finer grapes than did Wisconsin.

The expectations of a year ago, when we were planning for this exhibit, were doomed to disappointment when we were cut down to a mere pittance to carry on the work, where seven or eight thousand dollars were expected.

This left the committee in a state of perplexed doubt whether to recede or go forward as best we could. The only way out of the difficulty was to hold the space allotted to us if possible until the fall fruits should mature or use up the funds in a continuous display of our small fruits and then surrender the space. Your committee and the executive board of our society decided to make a small display of strawberries, raspberries, etc., and then to do the best we could through the months of September and October. The result showed the wisdom of this course, and notwithstanding reports of some supposed to-be-smart newspaper reporters and the lofty resolutions of instruction from our state board we finally gained the approbation of the fair officials and the applause of hundreds of thousands of visitors. It is not pleasant to dwell on the past experience of the two middle months of our exhibit, when so much seemed to conspire against us from all sides, but as the darkest night has its brightest day, so the change came with the first shipment of apples from Richland county.

The year past, to our fruit growers, has not been a profitable one, but if ours was the only state where this complaint could lie, then we should work under great discouragements; but let me say as one who heard and saw men who represented the entire fruit region of the United States, I believe Wisconsin can hold her position with any, and I would rather to-day choose a site for an apple orchard in Wisconsin than an orange grove in California, so far as dollars and cents go to make material wealth.

The wide-spread interest in fruit growing in our state, and other matters connected with our work as a state society, have largely increased the work and duty of the secretary; and, while I have tried to meet every demand upon my time and ability, yet it would be strange if some duty had been unperformed or poorly attended to.

MORE TRIAL STATIONS.

There is a call and perhaps urgent need for more trial stations in the state. A petition numerously signed by business men and citizens of Sturgeon Bay asked for one at that place, but I think nothing has been done to stock a plat of ground at that point. In my opinion the trial stations we have should be visited by the committee as early this spring as practicable to examine into the wants and necessities of each station as related to the fruit growing interest of the state, and the report of this committee offered to all the newspapers who will publish it. We must reach the public by the newspaper press, and I find that matters if it be of general interest, will be willingly published if prepared ready

for the editor's use. And in this connection I wish to urge the members of this society to write for our own state paper, *The Farmer*, and whether I or some other one edits the horticultural department it is worthy of your support. What may seem so easy to you and perfectly plain may not be to others. Good results may be obtained by different methods and it is by comparison that we arrive at the best.

ARBOR DAY.

The work of work of interesting the schools in our state and inviting them to observe the day with proper exercises relating to trees and tree planting which was inaugurated by t is society, met with a hearty response from the state superintendent, Oliver E. Wells, and with his able assistants in the department of education has been carried forward to a culmination far beyond our most sanguine expectations and in whatever direction it is thought best in the future to prosecute this work I trust it will receive our support and co-operation.

OUR VOLUME OF REPORTS.

The law relating to the publication and distribution of these needs revision. We perhaps do not need a larger number but we need more bound volumes — 7,000 copies, 2,000 in cloth — and these volumes should be distributed free of charge to local societies and the public schools of the state the same as they are sent to members of the legislature. There should also be some provision in the law requiring these to be published within a specified time.

NECROLOGY.

Since our last annual meeting the scythe of time has cut down and gathered to their final reward two who were valuable members of this society, George H. Robbins, of Platteville, Wis., and Dr. Joseph Hobbins, of Madison. I have asked Mrs. A. L. Hatch to prepare a fitting tribute to Mr. Robbins for publication in our volume, and have also requested Hon. B. F. Adams of Madison, also an ex-president of our society, who was an old time friend of Dr. Hobbins, to prepare for our use a memorial sketch of the life work of him, who was for a number of years the president of this society. I would also suggest that we procure an

FINANCIAL STATEMENT.

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

Dr.

February 1st, 1893, to February 1st, 1894:

Postage stamps	$64 00
Express account	31 05
Printing and stationery	31 17

Stationery	9 79
Nursery stock for trial stations	29 75
Miscellaneous expenses	128 59
Salary of secretary	300 00
	$594 35

Cr.

Received on salary	$225 00	
Received on current expenses	196 00	
Due on salary	75 00	
Due on current expenses	98 35	
	$594 35	$594 35

TREASURER'S REPORT.

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

Your treasurer submits the following report:

February 8, 1893, amount in treasury	$240 38
February 9, 1893, received of state treasurer	500 00
February 13, 1893, received of secretary, membership dues	59 00
June 19, 1893, received of state treasurer	750 00
June 23, 1893, received of secretary, membership dues	7 00
November 8, 1893, received of secretary on account of loan to World's Fair fund	150 00
November 8, 1893, received of secretary, membership dues	19 00
Total from all sources	$1,725 38
Total disbursements	1,224 01
February 6, amount on hand	$501 37

Respectfully submitted,

VIE H. CAMPBELL,
Treasurer.

DISBURSEMENTS.

Voucher No.		
7	Thayer, M. A., expenses of trial station	$18 15
8	Tobey, C. E., expenses to annual meeting	9 70
9	Case, J. F., expenses as delegate to annual meeting	11 00
10	Gray, Warren, expenses to annual meeting	7 36
11	Harden, Fred A., expenses of trial station	34 15
12	Hirschinger, Chas., premiums	15 00
13	Barnes, A. D., premiums	2 00
14	Chappel, F. A., premiums	9 00
15	Cook, O. C, premium	2 00
16	Huntley, D., expenses as delegate	8 60
17	Huppler, W. H., board of members and delegates at annual meeting	76 30
18	Cook, O. C., expenses to annual meeting	7 20
19	Menn, J. J., expenses to annual meeting	2 85
20	Boynton, W. D., expenses to annual meeting	6 97
21	Braddock, W. S., expenses to annual meeting	8 00

22	Coe, R. J., expenses to annual meeting	$1 92
23	Edwards, F. C., expenses to annual meeting	1 92
24	Springer, Wm. A., expenses to annual meeting	8 00
25	Hatch, A. L., expenses of trial station and premiums	31 30
26	Hatch, C. A., premiums	8 00
27	Hoxie, B. S., current expenses	22 00
28	Thayer, M. A., incidental expenses as president	25 00
29	Putnam H. C., expenses to annual meeting	21 50
30	Hoxie, B. S., expenses for society	40 00
31	Hanchett, W., expenses to annual meeting	10 48
32	Hoxie, B. S., one quarter salary	75 00
33	Campbell, Vie H., reporting and transcribing	35 00
34	Hoxie, B. S., loan to World's Fair fund	150 00
35	Hoxie, B. S., one quarter salary	75 00
36	Campbell, Vie H., expenses at executive board meeting	1 60
37	Huntley, Fieta, expenses to summer meeting	8 50
38	Herbst, J. L., expenses to summer meeting	3 70
39	Elliot, Arthur, premiums	9 50
40	Jenkins, Mrs., premiums	1 00
41	Conway, Mary, premiums	2 50
42	Bauer, Lillie, premiums	4 00
43	Hopkinson Mrs., premiums	1 00
44	Ramsey, W. A., premiums	5 00
45	Potter, Carl H., services as corresponding secretary	15 50
46	Stowell, Warren, premium	1 50
47	Kellogg, Geo. J., premiums	3 00
48	Borst, Theron, premiums	50
49	Hoxie, B. S., expense per account	50 00
50	Fogle, Mrs. O. S., premium	1 00
51	Thayer, M. A., premuims	5 00
52	Wright, J. E., premiums	5 50
53	Wright, J. E., expenses to summer meeting	8 50
54	Hoxie, B. S., one quarter salary	75 00
55	Herbst, J. L., premiums	2 00
56	Hoxie, B. S., express and postage	14 00
57	Hoxie, B. S., one quarter salary	75 00
58	Hoxie, B. S., postage and expenses	40 00
59	Hoxie, B. S., expenses and express bills	30 00
60	Toole, W., expenses as delegate to Minnesota Horticultural Society	15 81
61	Campbell, Vie H., postage as treasurer, $5.00; reporting and transcribing summer meeting $15.00	20 00
62	Campbell, Vie H., expenses to summer meeting	3 15
63	Hoxie, B. S., expense account	98 35
		$1,224 01

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 your secretary and treasurer, and having compared the same with accompanying bills and vouchers find both accounts to be correct.

F. C. EDWARDS.
WM. TOOLE.
R. J. COE.

The report of the secretary was referred to the committee on resolutions; the report of treasurer and financial report of secretary, with vouchers, referred to finance committee.

The election of officers was the next order of business, and resulted in the election of the following officers for the ensuing year:

L. G. Kellogg, President, Ripon.

Chas. Hirschinger, Vice President, Baraboo.

A. J. Philips, Secretary, West Salem.

R. J. Coe, Treasurer, Fort Atkinson.

J. L. Herbst, Corresponding Secretary, Sparta.

Additional members of the executive committee: E. J. Scofield, Hanover; Warren Gray, Darlington; Daniel Huntley, Appleton; Daniel Williams, Summit; Franklin Johnson, Baraboo; Prof. E. S. Goff, Madison; W. D. Boynton, Shiocton; J. L. Fisk, Omro; C. E. Tobey, Sparta; J. H. Treat, Meadow Valley.

REPORT OF TRIAL STATIONS.

REPORT OF HILL CREEK TRIAL STATION AT ITHACA.

By A. L. HATCH.

PROF. E. S. GOFF—Herewith I submit report of this station for 1893, showing plants set, expenses, etc. Strawberries from older beds gave very poor results. The trial beds were kept covered till the usual time, just before growth begun. It would appear, however, that for once it would have been better if uncovered sooner, as a neighbor had a very fair crop about a week earlier than mine under circumstances not otherwise different except the removal of the covering sooner than mine was taken off. From some cause, probably fungus disease, my plants all failed to grow fruit of a characteristic quality. Comparisons made un-

der such circumstances would evidently be far from just. In view of the difficulty of making fair trials sooner than those made by the general public I recommend that the setting of strawberries be discontinued at this station.

Of raspberries fruited Muskingum gave a good crop of good sized berries of bad color and very poor quality. Japanese Wineberry was not good enough in fruit even as a novelty, and will be a disappointment unless planted simply as an ornamental shrub. Lovett's Progress is too small for an early berry and is rather inferior to Palmer. Marlboro is a very fine red berry, but is inclined to be crumbly toward the last. Cuthbert has the fault of a late growth and immature sprouts, but for all that is not yet equaled for a general purpose market berry in the estimation of many growers. The old Brandywine, when well grown, is very reliable and good. We have yet to find a red berry superior to Turner in quality, but it is too soft and small to give any profit as a market berry. Its only place can be for home use.

Ohio has been more subject to blight for several years than any other black cap. No kind, however, is entirely free from it.

Of fruit trees set in trial orchard, four kinds bore fruit, viz.: Yellow Transparent, Scott's Winter, Windsor Chief and Baraboo. Yellow Transparent is a large, nice apple, among the earliest, of which we sent samples to the World's Fair. Scott's Winter is quite like Halla's in every way. As it is probably hardy and productive, we regret its small size. Windsor Chief is of moderate size, dull color and fair quality. It is in good condition at this date, January 1. Baraboo is evidently a Duchess seedling, as it resembles that variety in its fruit. These trees are all reasonably vigorous.

The half dozen trees of three kinds, top-grafted and obtained from Mr. Cotta of Illinois in 1890, appear as if not doing as well as they promised the first season. The tops are outgrowing the trunks, and already show signs of dwarfing. Whether this arises from the trunk or stock being too slow a grower or whether it is a radical defect of Mr. Cotta's plan it is perhaps too soon to determine. We understand the trunk or stock is some kind of crab, and if so it is perhaps out of harmony when top-grafted with the common apple, as we have found in case of Transcendent Hyslop and several others.

For a full test of the hardy stock idea as a basis for top-grafting, to produce trees not liable to sun-scald or winter-killing on southwest side in severe winters, we admit at the outset we should have a variety that is not only hardy and vigorous, but one that harmonizes with the common apple when grafted upon it. Now if Mr. Cotta has discovered a kind better adapted to the purpose than the one used in 1890, then we would advise another trial of top-grafted trees from him.

I find that it has been a mistake to plant very young trees in orchard. When isolated the attacks of the tree hopper injures them severely. If

left in nursery rows they would not be apt to be so much hurt by insects and more than that should be trained to correct form before being transplanted, and are most satisfactory when six feet or more in height.

In view of the many kinds of apples already tried and the many kinds now in fruit here and in neighboring orchards, including 200 kinds top grafted by Mr. S. I. Freeborn, I recommend that arrangements be made for an authoritative examination and report upon such apples next season It would seem that it is better to ascertain results of trials already made through a long series of years than to begin again and go over substantially the same ground. We can not hope for any better demonstrations than we already have of about 100 varieties already fruited here. Certainly there would seem to be a complete test of such kinds as Rollin's Russett from Minnesota, the Canada Peach apple from Ontario, and the New Hampshire from this country. The behavior of Early Richmond and Kentish cherries, Desoto, Weaver and other plums, and upwards of fifty variety of grapes can be studied here almost any season when in fruit. With reliable standards for comparison it ought not to be difficult to arrive at correct conclusions and safe guides for planters. What is true of this locality is emphatically so of the Baraboo region, where fruit is grown in large quantities by a good many different persons. There are other places where tests have already been made and when applied only to localities having the same climate, elevations and soils ought to establish varieties upon their true merits.

EXHIBIT A.

List of trees and plants set spring, 1893, and of whom obtained:

6	Royal Church Raspberry	Chas. Green, N. Y.
6	Minnewoski Blackberry	Chas. Green, N. Y.
3	Abundance Plums	Chas. Green, N. Y.
6	Maxwell Blackberry	Parry & So
6	Omher Blackberry	Parry & Son, N. J.
12	Leader Strawberry	Parry & Son, N. J.
12	—— Strawberry	Poscharsky & Son.
6	—— Strawberry	Coe & Converse, Wis.
6	Crawford Strawberry	E. S. Goff, Wis.
12	Edgar Queen Str.	E. S. Goff, Wis.
6	Aroma, Strawberry	E. S. Goff, Wis.
12	Gen. Putnam Strawberry	E. S. Goff, Wis.
12	Van Deman	E. S. Goff, Wis.
6	Barton's Eclipse	E. S. Goff, Wis.
6	Beverley	E. S. Goff, Wis.
6	Greenville	E. S. Goff, Wis.
6	Seedlings of C. Hewitt	E. S. Goff, Wis.

6 Plow City.....E. S. Goff, Wis.
6 Yankee Doodle.....E. S. Goff, Wis.
5 Westlawn.....E. S. Goff, Wis.
6 Standard.....E. S. Goff, Wis.
6 Phillips No. 1.....E. S. Goff, Wis.
6 Lady Jane.....E. S. Goff, Wis.
6 Columbus Gooseberry.....Ellwanger & Barry, N. Y.
6 Champion Gooseberry.....Ellwanger & Barry, N. Y.

REPORT OF WEYAUWEGA, WISCONSIN, FRED A. HARDEN, TRIAL STATION.

The following is a list of trees and plants, received and set for trial in 1893:

3 Abundance plums } All lost. ..... Green's Nursery Co.
2 Wragg cherries... } ..... J. Wragg & Son.
Champlain—Red R. B..... Ellwanger & Barry.
Columbus—Goose B.....Green's Nursery Co.
Royal Church—Red R. B.....Green's Nursery Co.
Minnewoski— Black B.....Green's Nursery Co.
Omher—Black B.....Wm. Parry
Maxwell—Black B.....Wm. Parry.

STRAWBERRIES.

Aroma.....Prof. E. S. Goff.
Barton's Eclipse.....Prof. E. S. Goff.
Beaverly.....Prof. E. S. Goff.
Crawford.....Prof. E. S. Goff.
Edgar Queen.....Prof. E. S. Goff.
Gen. Putnam.....Prof. E. S. Goff.
Greenville.....Prof. E. S. Goff.
Jay Gould.....Green's Nursery Co
Lady Jane.....Prof. E. S. Goff.
Leader.....Wm. Parry.
Phillip's No. 1.....Prof. E. S. Goff.
Plow City.....Prof. E. S. Goff.
Princeton Chief.....E. J. Hull
Seedling from Hewitt.....Prof. E. S. Goff.
Smith's Seedling.....Coe &Converse.
Standard.....Prof. E. S. Goff.
Van Deman.....Prof. E. S. Goff.
Westlawn.....Prof. E. S. Goff.
Yankee Doodle.....Prof. E. S. Goff.

NOTES ON FRUITS.

Yellow Transparent, Noble's Winter and Good Peasant are the only varieties that matured their fruit.

There were several other varieties that set fruit and carrried it part of the season, but the dry weather and winds caused it to drop.

It was very dry before and all through the berry season, not more than one fourth of the berries that set fruit matured the same.

There were places in the strawberry beds where the vines and berries were all burned up.

The following table gives the date of the first picking, size, quality and productiveness of the varieties that fruited the past season:

	Perfect or imperfect	Date of first picking.	Size.	Firmness.	Quality	Productiveness
Auburn	Imp.	June 15	Medium	Firm	Good	Prolific.
Beaverly	Per.	June 20	Large	Firm	Good	Fairly prolific.
Barton's Eclipse	Imp.	June 20	Medium	Firm	Good	Prolific.
Beeder Wood	Per.	June 18	Medium	Firm	Good	Fairly prolific.
Bessie	Imp.	June 15	Medium	Firm	Good	Productive.
Boynton	Imp.	June 19	Medium	Firm	Good	Fairly prolific.
Clever	Per.	June 20	Large	Firm	Fair	Fairly prolific.
Cyclone	Per.	June 21	Large	Firm	Fair	Fairly prolific.
D and D	Per.	June 18	Large	Firm	Good	Fairly prolific.
Dayton	Per.	June 20	Large	Soft	Good	Prolific.
Enhance	Per.	June 20	Large	Firm	Good	Very prolific.
Gillespie	Imp.	June 22	Small	Firm	Good	Fairly prolific.
Gov Hoard	Per.	June 20	Large	Firm	Fair	Prolific.
Hewitt Seedling	Per.	June 24	Large	Firm	Good	Prolific.
Martha	Imp.	June 22	Large	Firm	Good	Fairly prolific.
Middleford	Imp.	June 20	Large	Firm	Good	Fairly prolific.
Monadnoax	Per.	June 24	Large	Firm	Good	Fairly prolific.
Mrs. Cleveland	Imp.	June 18	Large	Soft	Good	Prolific.
Mt. Holyoke	Per.	June 20	Large	Firm	Good	Fairly prolific.
Parker's Early	Per.	June 25	Large	Firm	Good	Prolific.
Park Beauty	Imp.	June 17	Large	Soft	Good	Fairly prolific.
Pearl	Per.	June 18	Large	Firm	Good	Fairly prolific.
Primey	Per.	June 22	Large	Firm	Good	Prolific.
Sanders	Per.	June 20	Medium	Soft	Good	Fairly prolific.
Southand	Per.	June 18	Small	Firm	Good	Prolific.
Standard	Imp.	June 20	Large	Firm	Fair	Prolific.
Shuster's Gem	Per.	June 18	Large	Firm	Fair	Fairly prolific.
Sundle	Imp.	June 18	Small	Firm	Fair	Fairly prolific.
Warfield	Imp.	June 17	Medium	Firm	Good	Prolific.

RASPBERRIES.

Ada—Medium size, hardy and fairly prolific.

Am. Everbearing—Large, firm and hardy.

Kansas—Large, firm and productive.

Older—Hardy and productive.

Palmer—Hardy, early and prolific.

Progress—Productive, rather small and early.

Seedling from Springer—Large, hardy and prolific.

Spray's Early—Medium size, hardy and prolific.

Winona—Small, hardy and fairly prolific.

I would recommend Enhance strawberry and Palmer raspberry for trial.

All trees heretofore set and reported on are all doing well, and are in a thrifty condition.

EXPENSES.

No. hours work, 74@15c. per hour	$11 00
Express, freight and twine	3 35
Rent	15 00
Total	$29 45

REPORT OF A VISIT TO THE TRIAL STATIONS AT WEYAUWEGA AND SPARTA.

E. S. GOFF.

Wishing to observe the effects of the moderately severe winter of 1892-3 upon the young apple trees at our trial stations at Weyauwega and Sparta, I visited these stations April 22 and April 24, respectively. The station at Ithaca was not visited in this trip, as I was sure that all needed observations as to the hardiness of the trees would be made by Mr. Hatch, the superintendent of that station.

I found the Weyauwega orchard looking well so far as the care of the trees was concerned. The ground was free from weeds and litter, and where two trees of a variety had been planted, the trunk of one had been neatly protected with straw the summer previous. The small fruits, however, had not been protected through the winter, with the exception of a few raspberries. Nearly all of the trees had made an excellent growth the preceding season.

The older trees in the orchard, and especially the Russian varieties, were very little injured by the winter. An examination was made of the wood of every tree, and the following observations were recorded:

Of the apples, the Palouse, Malinda, Delaware, Red Winter, Thompson Seedling, Gideon, Garfield, Forest, Alden, Russian Rambo, Windsor Chief, Sarah and No. 252 Russian were slightly killed back at the tips; the Hoadley and Berlin were noted as showing the effects of the winter least, and No. 469 Russian was black-hearted a foot down from the tips. The other varieties had escaped injury to a perceptible degree. Of the pears, the two Russian varieties, Bessemianka and Gakovska, were alive and bright to the terminal bud, but the Idaho was black at the heart. The plum and cherry trees showed no injury. The raspberries and

blackberries did not appear to have suffered very serious injury from the winter, but the Japan Wineberry had been killed to the snow line.

At the Sparta station the damage to the apple and pear trees from the winter was much more serious than at Weyauwega. Almost every variety had darkened wood, and the pears were all seriously blackened. Of the apples, the Antonovka and Russians Nos. 88 and 200 were apparently least injured.

The wood of most varieties showed a peculiar brownish appearance, the pith being generally darker than the wood. In many cases where the wood appeared normal a few inches down from the tip, it was found to be darkened at the union of the branch with the trunk. Where shoots had grown from the trunk at a point where they were shielded with the lath protectors, with which the trunk of one tree of each pair was surrounded, the wood was of normal color, showing the value of the protectors as a preventive of injury to the trunk.

The growth of all the varieties on the light sandy soil of the Sparta station was decidedly inferior to that at Weyauwega, where the soil is a sandy clay. It would be interesting to know how far the greater injury to the trees at Sparta is due to the diminished vigor of the trees owing to their being planted on an unfavorable soil, and how far it is due to the severer winter weather that prevails in that locality.

REPORT ON THE DISTRIBUTION OF PLANTS.

J. L. HERBST, Corresponding Secretary, Sparta.

The society will pardon me if any mistakes are made in this report. On account of Mr. Potter's ill health he was obliged to leave the state, and by so doing, necessarily had to give up the work of corresponding secretary. While at the summer meeting held in Kilbourn City, the society asked me if I would take the place left vacant by Mr. Potter, until a new corresponding secretary could be elected, and I consented to do it, not knowing what was in store for me.

The work being entirely new to me, and not having a chance to talk with Mr. Potter personally in regard to it, the report will not be as full as he would have had it. However, I have done the best I could with it, and if there are any errors, I hope they will be overlooked.

Last Christmas as I sat at the dinner table enjoying a hearty feast, there was a ring at the door. I arose to welcome the guest, when lo, and behold, there stood before me, as I opened the door, the express messenger. He stood before me with a good sized package in one hand and his receipt book in the other. He handed me the package, stating at the same time 70 cents charges. I readily paid him the amount and

he departed. Well, another present said I to myself, hastily removing the wrapper, but when I opened the package there appeared before me the contents of a United States mail pouch, postal cards, letters, catalogues and reports. I thought for a moment and then I knew what my fate was.

I finished my dinner as best I could, my appetite being spoiled by the disappointment of a Christmas gift. In the evening I received a letter from Secretary Hoxie, informing me that I must make out a report of the plant distribution, and then it all came to me what the supposed Christmas gift was for.

In looking over the reports of those children that received plants I find some of them very interesting. There was a decidedly varying success, and most of the reports showed that an interest was being taken in this line of work.

The total number of pupils applying for strawberry and raspberry plants is 1438, sending fees to the am't of $68.36. Fully 25 per cent. of the teachers made some error in applying, usually neglecting to send the names of their pupils and all of these and many others had to be written to.

In looking over the record which Mr. Potter has kept, I find that in all there were 1,326 applicants for strawberry plants, 112 for raspberry plants and 69 for spruce trees.

Of the 1,326 applicants for strawberry plants, 311 have reported, quite a share of them showing good results, a few reported that the plants were dried up on arrival. One boy reported 4 old plants living and 300 new ones. He received six plants. Another reported to have received 6 plants, they all lived and multiplied to 220, and still another had but one old plant living and 21 new ones. Of the 112 who applied for raspberry plants but seven have reported. The reports on raspberry plants are all favorable. I could not find any reports on the spruce trees. The pupils doubtless did not understand that they were to report on the raspberry plants and spruce trees. The cards which they received to make out reports on, were only for strawberries and they doubtless did not understand they were to report on the others.

Making a condensed summary of all the reports, I find the following to be as nearly accurate as I can give you under the circumstances. I will also compare the figures with those of the previous year.

	1893.	1892.
Total number of strawberry plants distributed	7,956	8,358
Total number of raspberry plants distributed	224	0
Total number of spruce trees distributed	69	0
Number of pupils recorded	1,507	1,443
Amount of fees received	$68 36	$58 50
Number of post offices recorded	164	161
Number of schools recorded	203	210
Number of pupils who reported	311	118

Number of old strawberry plants living	1,019	461
Number of new strawberry plants living	7,072	6,467
Per cent. of old strawberry plants living	54.6	65.1
Per cent of old strawberry plants dead	45.4	34.9
Estimated total of old plants living	4,343	5,636
Increased by propagation	6 to 1	14 to 1
Number of horticultural societies formed	2	5

There is one thing noticeable in comparing the figures of the two years; in the year 1892, 1,443 pupils received plants and but 118 reported while in 1893, 1,507 received plants and 311 reported; showing but about eight per cent. reported in 1892 and about twenty per cent. reported in 1893, showing an increase of twelve per cent. By these figures we see that an increase in the interest of this subject is being taken by the pupils.

Mr. Boynton, who so kindly gave the spruce trees, makes this offer for the season of 1894: He will send to all school children of the state that may apply for them, three small spruce trees each, provided the schools or the society will pay the cost of the package, as was done last year.

DISCUSSION.

M. A. Thayer—The report ought to be added to. The interest of the pupils is increasing fast. I am in favor of removing all restrictions as to age. I would give all a chance; let us give every pupil, who makes application, a few plants. Parents and guardians should assist them.

Pres. L. G. Kellogg—Do applicants pay for packages?

M. A. Thayer—Each pupil advances 5 cents for postage.

C. E. Tobey—The bill of $10, that Mr. Herbst mentioned in his report, was allowed by the society, for extra labor in correspondence.

Geo. J. Kellogg—The firms making these free distribution of plants have had a good deal of free advertising.

M. A. Thayer—All were invited to give plants, and I hope that nurserymen will contribute so that each pupil can have an apple tree.

B. S. Hoxie—We asked all nurserymen to sell trees at reduced rates for Arbor day, and no "free advertising" was intended.

J. S. Stickney—I am sorry that Mr. Kellogg made the remark that he did. No one knows the amount of work there was in sending out those plants, except those who did it; that is not *free* advertising.

STRAWBERRIES OF 1893.

GEO. J. KELLOGG, Janesville.

Mr. President, Ladies and Gentlemen—The strawberry bloom of 1893 was never more promising. First bloom May 11th, and the thermometer, at the warmest, ranged from 48 to 78½ the balance of the month, while the coldest of the nights was from 39 to 57; there was but one time it went below 40, and that was the morning of the 18th, which gave us a light frost, the only frost during the strawberry season; there were six days that rain fell, from the 11th to 31st; there were four other days partly cloudy.

Thirteen of the days the sun shown part, if not all, of the time. The 19th the thermometer marked 76, with a high south wind; 20th, 78½, quite hot and pleasant. The weather seemed all right up to the 7th of June when the thermometer ranged high the balance of the month, the mean temperature being 71.7, nearly five degrees warmer than the average for twenty-eight years, with very little rainfall after the 10th.

The hot June was what cooked our strawberries in 1893; the weather was favorable for the dissemination of pollen, and the great imperfection and deformity must be laid to the heat and drouth of June, the first strawberries ripened just th rty days from bloom.

Touching the newer varieties we hope to receive much light from our trial stations; but every location and soil can only be tested by actual trial, and no variety should be condemned in less than three years.

Our experience and notes from others lead us to the following report:

Accomac—Large, early, not a success.

Allen No. 1—(p) Medium, worthy general trial.

Anna Forest—Large, early, a failure in 1893.

Aroma—Firm, worthy of trial.

Beverly—A prize if petted.

Bessie—(p) Small, yet very productive.

Beebe; large, irregular, vigorous.

Belle; of Va., large, very late, productive.

Belle; of La Crosse, worthless.

Boynton; (p) Crescent over again.

Bubach No. 5; (p) unequaled for size, productiveness and quality for near market.

Burt; identical with Capt. Jack.

Cameronian; very large, unproductive.

Cruse's No. 9; late, vigorous, productive.

Crawford, perfect every way except in yield.

Cyclone; early, productive, promising.

Clyde and Cycloma the same; firm, productive, promising for market.

Cleveland; Mrs., (p) productive, off color, soft and only desirable for home use and near market.

Crescent; (p) is not surpassed in productiveness and vigor by any new variety; it cannot be discarded.

Dayton; with careful culture, very satisfactory in many locations.

Dew; very large, not productive.

Edith; very large, worthy of trial.

Equinox; claims to be the very latest and most productive.

Earle; (Parker), late; most productive if heavily mulched with manure in April; one of the very best for hill culture, fails to make plants to supply the demand.

Edgar Queen; (p) of the Bubach type, "the best of 5,000 seedlings," late, worthy of general trial.

Enhance; very vigorous and productive, late, firm, one of the best for pollen, it's greatest fault a little rough, ridged and inclined to white tips.

Eureka; (p) late, productive, good for home use and near market.

Eclipse; (Barton's), (p) large, firm, worthy of trial.

Fitch No. 2; early, productive, home use and near market.

Gillespie; many good points but needs care.

Greenville; (p) large, firm, productive, worthy of general trial.

Gandy; large, productive, midseason, not late except its first ripening.

Haverland; (p) productive, large, near market, valuable.

Hoard; large, productive, needs petting.

Ivanhoe; firm, promising, and worthy of trial.

Idaho; of Bubach type, yet in many places unproductive.

Jessie; very large, on some soil very satisfactory, on others almost worthless.

Jewell; with Earle the finest pair for hill culture.

Katie; (p) very promising, productive, and extra quality.

Leroy; (p) every thing favorable, worthy of trial.

Lincoln; (p) is Crescent under a new name.

Leader; large, some report it a success, others a failure.

Lovett; not very early, but profitable for pollen and fruit.

Lydia; worthy of trial.

Muskingum; large, productive, firm, valuable.

Martha; (p) firm, valuable for market.

Marshall; claims to be the biggest of all; try it after our stations recommend it; it rusts in places; sold at $10.00 a dozen in 1893.

Middlefield; (p) conflicting reports; a success with us; try it.

Michel; worthless on our soil except to give away; unproductive.

Mary; claims to excel all others in size and productiveness.

Noble; from Canada. "The largest strawberry known."

Omega; (p) very late, vigorous and productive.

Oregon; worthless east of the Rocky mountains.

Princeton Chief; very firm, worthy extensive trial.

Putnam; (p) large, pays with petting.

Pacific; (p) firm, vigorous and may pay when not too thick.

Phillips; productive, and worthy general trial.

Photo; (p) good for home use and near market.

Princess; (p) productive and valuable for near market.

Quick; very promising with us in 1893.

Regina; late, but too small for profit.

Roe; E. P., very late, conflicting testimony, uncertain.

Rio; early, productive, firm, worthy general trial.

Shaw; seems Sharpless with a new name.

Smith's Seedlings; origin unknown, much like Wilson in its glory.

Stayman's No. 1; (p) productive, good for near market.

Stayman's No. 3; vigorous, productive, medium, tart.

Shuckless; a novelty for amateurs.

Sadie; (p) wonderfully productive, small except in hills.

Swindle; (p) true to name in many places, it has a record of "50 bushels per acre at one picking."

Shuster's Gem; (p) of Cumberland type, try it.

Southard; is uncertain, early and satisfactory with some.

Splendid; on our grounds beat Bubach, Wood and Princess in 1893 side by side, worthy trial.

Saunders; productive, firm, large, good for pollen and a success over a wide range of territory.

Sandoval; firm, rusts badly on some soils.

Tennessee Prolific; large, productive as Haverland, good for pollen, vigorous, profitable for home use and near market.

Timbrell; (p) is making wonderful promises; as a plant it has done well the past season, try it.

Van Deman; worthless with us in 1893, we hope it may do better.

Victor; very large, very early and desirable.

Wonder; the wonder is how so worthless a variety ever got out.

Westbrook; (p) extra quality, but too small.

Woolverton; one of the best for pollen and productiveness.

Weslon; (p) large, productive, firm, late, "one of the best out of 80 new kinds on trial."

Wood; (Beeder) one of the best early, for pollen and productiveness.

Warfield; (p) equal to Crescent for productiveness, better color and shipper, plants need thinning or the fruit will run small as all great plant makers.

Yankee Doodle; (p) (Epping) we have at last found one every way worthy to bring up the rear; firm, good, productive, promising as a market sort, another of the "80 new, on trial."

Of t e eighty-six kinds I have mentioned perhaps the best six tested

and well proven, perfect blossoming kinds are: Earle, Enhance, Gandy, Smith, Woolverton and Wood.

The best six pistillates perhaps are: Bubach, Crescent, Greenville, Haverland, Middlefield and Warfield.

We hope there are better kinds than any of these now being proven by our trial stations, and we hope that our stations will make a report that we can tie to, and save this endless expense and loss of time.

WEATHER RECORD.

The winters of 1855-6, 1856-7, 1863-4, 1872-3, were extremely severe on fruit trees. The winters of 1857-8, 1862-3, 1866-7, 1868-9, 1873-4, were unusually mild.

The winter of 1893-1894 gave us zero twice in November, which is unusual; seven days in December, then a thaw that let plows run till January 20; good sleighing from November 25 to December 25, and again the snow covered the ground January 23, though the sleighing was rather poor.

The following table gives the coldest point during the winter for the following y ars, also the number of days the thermometer touched zero and below, the aggregate of the different winters below zero, and for the eleven past winters when winter set in and spring opened:

WINTER OF	Coldest point below.	No. days zero.	Aggregate.	Remarks.
1874-1875	30	47	742	
1875-1876	17	14	120	
1876-1877	30	40	410	
1877-1878	13	5	24	Mud blockade.
1878-1879	33	28	386	
1879-1880	26	15	106	
1880-1881	37	52	606	Railway ice blockade.
1881-1882	14	11	61	*Winter.* *Spring.*
1882-1883	36	47	557	November 25 April 7.
1883-1884	35	33	371	November 12 March 26.
1884-1885	30	52	669	November 19 April 8.
1885-1886	28	28	273	December 5 April 9.
1886-1887	25	38	449	November 24 April 11.
1887-1888	30	38	466	November 27 April 7.
1888-1889	12	17	102	November 17 March 20.
1889-1890	20	14	92	November 29 December 30 March 21.
1890-1891	14	7	30	December 2 April 6.
1891-1892	10	13	65	November 24 March 31.
1892-1893	20	40	335	November 19 March 29.
1893-1894	20	16	93	November 15 and January 20 again.

This record for 1893-4 is to February 1.

DISCUSSION.

E. J. Schofield—In what respect does the Hoard need petting? The Van Deman does well with me.

Geo. J. Kellogg—The Van Deman does not do well with me.

Mr. Hartwell—What is Mr. Kellogg's soil?

A.—Black loam.

M. A. Thayer—What manure do you use, and how much do you put on per acre?

Geo. J. Kellogg—Forty loads, for preparation.

F. C. Edwards—The Michel does well with us.

President—That is my experience.

Mr. Hartwell—My experience is that what might do well on my soil may not be good on locations near by.

Q.—What are the two best fertilizers?

A.—The Enhance and Wood.

Mr. Grisim—I have been engaged in horticulture and agriculture for seventy years. I gave up farming three years ago. Two years ago I started a two acre farm. I went to Mr. Tuttle's and bought fifty strawberry plants; I manured the land and then let them do as they pleased. I called the amount of land set out to strawberries one and one half rods. I raised 181 quarts of berries; they were Warfield and Jessie. I put out Fay, Prolific, Long Bunch, Holland and Victoria currants.

Q.—What are the best varieties for clay soils?

A.—Crawford and Eureka.

A. G. Tuttle—I have been looking for several years for something to plant with the Crescent. I believe I was the first one to raise the Crescent in Wisconsin. I have tried several varieties but I have never found anything to yield with the Crescent. If the Enhance proves as it has with me, I shall plant largely of it.

Q.—Mr. Kellogg, what are the best six pistillates?

Geo. J. Kellogg—They are, perhaps, Bubach, Crescent, Greenville, Haverland, Middlefield, Warfield. Of eighty-six kinds I have mentioned perhaps the best six, tested and well proven kinds are Earle, Enhance, Gandy, Smith, Woolverton, Wood.

B. F. Adams—I have raised four crops of the Warfield, and all of the fruit has been perfect in the four years.

A. G. Tuttle—With me the fruit of the Warfield last year was small and imperfect, and the leaves curled up. I had about two acres set, but more of the Crescent than any other varieties. I set some Warfields, but I am confident if I had set all Crescents I would have had 100 bushels more than I had.

Mr. Hartwell—Curly leaves are a characteristic of the Warfield.

F. H. Chappel—One year ago the Warfield rusted, with me, the berries were small and I don't know whether to call it a first-class berry or not.

Loudon's Seedling has done the best for me of any variety I have ever had.

B. F. Adams—I think none of you will make a mistake in planting Warfield, it is fully equal to the Crescent in productiveness.

M. A. Thayer—It seems to me, in judging of the value of different kinds of fruit, that it is of the utmost importance we take into consideration the quality of soil of the different localities, season, method of cultivation, and other attendant circumstances. Without taking these things into consideration, we get very conflicting reports. It is probable that no berry has been more criticised by this society, and especially by Mr. Kellogg, then the Michel. I think that is attributable to his soil. With us it has been one of our best berries. We have a sandy soil that is suitable for it. We received as much fruit from it last season as from the Warfield. I consider it one of the best berries we have for a sandy soil. It is a very fine berry in flavor and is a good fertilizer.

J. C. Plumb—I think these old varieties have had about all the time they ought to have, and I would like to hear from some of the new ones. I had a little patch of Michel that all grew up to weeds and, although they were small, there was any amount of berries.

Franklin Johnson—It is generally conceded that there was something the matter with the berry crop last year. Mr. Kellogg says that strawberries failed because of the hot weather in June. My Warfields were injured as early as May, so it does not seem possible that the hot weather in June was the cause of all the trouble.

D. C. Converse—Smith's Seedling is productive, a good, strong grower; the only trouble is, it is a little soft for long shipment.

C. E. Toby—I would like to hear something of the Van Deman, Mr. Hanchett says it is the best fertilizer he has among his standard varieties.

Mr. Reed—I am surprised not to hear anything said about the Haverland; it has done well with me.

President—The Van Deman has done extremely well with me. It is a good shipper and was the earliest berry on my grounds last year.

F. J. Wells—I cannot add to what has already been said. I have fruited the Smith and it proved a very soft berry with me, it did not do as well as the Saunders, the two were side by side, the Saunders is a firmer berry. Michel has been a shy bearer with me, my soil is a clay loam, similar to Mr. Kellogg's I should think.

A. D. Brown—I am a young greenhorn living up in the mountains, we have a berry that we know about in Sauk county and we do not need to speculate on it, it is the Crescent. I have tied to it. All I want is something that will do for a fertilizer for the Crescent.

Mr. Grisim—I live in Sauk county too, and I tied to the Crescent until I didn't have a berry.

M. A. Thayer—The question largely is, "What do you want a berry for?" If you want one for family use take the Crescent, but if you want one to ship to a distant market you must select some other variety. You must always consider what you want of a berry. I would like to ask this question: "Is it possible to make a soft berry hard by any kind of cultivation?" We must have berries that are firm, or if there is some method of cultivation that will add firmness, we must adopt that method. If we can anticipate the ripening of the berries ten, twenty or thirty hours, we want to do it, so that the berries will be only ripe when they reach the market and will be firm and in a condition to be handled.

J. C. Plumb—That brings us to the question whether the fertilization of the flower can change the quality and firmness of the berries. If we can, by any method, do that it is something that we ought to know.

Q.—What is your opinion on this point, Mr. Plumb?

J. C. Plumb—That brings up the question whether pollenization has any influence on the berry? I had rather trust to good, dry weather to make firmness, and yet I am seeking light. The testimony of some is that they do, secure a good effect in the line of firmness by pollenization, with that object in view.

MY EXPERIENCE IN STARTING A NURSERY.

W. J. MOYLE, Yorkville.

A person of only four years' experience in the nursery business will naturally feel a little diffident in reading a paper on this subject before an audience of men of this and other states, who have made it their life work. But, as Mr. Hoxie, to whom I related some of my pleasures, tribulations and trials while conversing with him at the World's Fair, requested me to write a paper about my experiences, for the benefit of other beginners, I consented to do so. In the first place I started my nursery merely for the pleasure I would derive from it, and a wish to perpetuate some of the varieties of apples that grew in my grandfather's orchard. My inclinations always led me in that direction. At the age of six years I could name and locate thirty varieties of apples that grew in the orchard at that time. There grew the Ribston Pippin, Queen Ann (good only to look at), that beautiful apple the English Russet, Golden Pippin, with its waxen cuticule, the Gravenstein, Baldwin, Rambo's of different varieties, Rhode Island Greening, Early and Yellow Harvest, Holland Pippin, Codling, Black Gillflower (or leather apple, as we boys used to call it on account of its toughness and color), Spitzenberg, Seek-no-further, Bellflower and Roxbury Russet, not the one of to-

day, but the old fashioned, genuine article; the tree was a very stiff, rampant grower, and a rather shy bearer of large to very large ovate apples, which we used to put away in a dark closet for about two months to mellow. When they were ready to eat I think that the good goddess Pomona herself would have been more than pleased to have had the chance of indulging in one. The afore-mentioned varieties with many others constituted my grandfather's orchard. It is now almost a thing of the past, and I doubt very much if there is any one orchard in Wisconsin, at the present time, that contains as many standard varieties as that one did.

Almost all of the orchards lived for thirty years and bore well, while some few are still alive and bearing; among the remaining ones are the Gravenstein, Red Vincent, Bellflower, Holland Pippin and Red Winchester. One of the principal objects in starting my nursery was to re-propagate these varieties by my own planting, with a few additional kinds and seedlings that I had noticed were producing good fruit in the neighborhood, such as the Porter, Autumn Strawberry and Bailey's Sweet. All of the above mentioned varieties were included in my planting of 1890, and it is hardly necessary for me to say to the old nurserymen that I planted them all too shallow. You see I was anxious to see them growing above the ground. As 65 per cent. of them managed to live until I could better my work and plant them deeper, I was more than pleased with my first effort.

A friend who had a Keiffer pear in bearing gave me about an ounce of seed, which she had saved by request when she preserved the fruit. These I had planted also and was pleased to see that nearly every seed grew. The seedlings made a very rapid growth and were all large enough to bud in July. A few dozen of the nicest looking seedlings I intend to let fruit, thinking there may be a cross of the Keiffer with the Flemish Beauty of which there were several trees fruiting near by. I derive more pleasure from budding than from any other art of propagation. One reason why it gives me more pleasure is because one has to go back to the very beginning, take the little bud, get it established in the stock, carefully guard it through the winter, set again in the spring and then watch it shoot up from one foot to two or more the first season. In fact, the reason is it takes more care. The more any little growing thing is dependent upon us the greater responsibility we feel, as if it were a part of one's self. It may be of interest to you to know what I used for a budding knife. In my first attempts I used a jack-knife, but it being no better than most pocket knives, I found it would not hold an edge.

As I could get a good budding knife for much less than a dollar and I wanted that dollar for something else, I transformed an old worn out Sheffield razor into one that answered very well. Two hours work in using the grindstone and shaving the end of the horn handle made me,

a budding knife equal to the best. The shaved handle worked very nicely in raising the bark. All my pears are budded and are most of them now nice little whips growing in the nursery, though some will be large enough to set out in the spring. Most of the varieties (about twenty) that I have, have fruited in our neighborhood, from which trees I procured my buds. Among them may be mentioned the Bartlett, Sheldon, Flemish Beauty, Seckel, Keiffer, Duchess d' Angouleme, Beurre d' Anjou, Pound Doyenne d' Ete, Souvenir du' Congress and Beurre Bosc, with some other varieties and seedlings; one procured of Mr. John Rhodes of Kansasville, he claims is almost blight proof.

The new kinds I have on trial are Idaho, Wilder and Lawson or Comet. These are growing in the orchard and are as thrifty and healthy as young willows.

The spring of '91 found me planting everything I could get ahold of in the shape of tree seeds. An uncle residing in the northern part of the state, sent me several hundred young Arbor Vitaes and Spruce. With one year's shading the Arbor Vitaes took to the soil and grew very well, but the Spruce, which, by the way, were what are called the Skunk and Water Spruce, never amounted to anything, though some are still living. I would like some one to explain why they didn't. With other seeds, I bought several ounces of fruit tree seeds, among them was an ounce of pear seeds. Having tried root grafting the year previous to this with very poor success, I built great hopes on these seeds, as I expected in July to have several hundred nice little seedlings to bud. "How to Propagate and Grow Fruit," a little volume published by C. A. Green, that I had purchased in the meantime, and from which I derived a great deal of information, informed me how to proceed. I would say here that I think it should be in the hands of all young horticulturists, that is, providing they haven't the means to procure a more valuable work.

My hopes about the pear seeds were shattered, as very few came up and what did grow seemed disgusted with the climate and made very little headway.

Among the many experiments, which I suppose all nurserymen indulge in at some time during their life, I will mention some tree roses. I worked the old-fashioned yellow, white and pink Scotch roses on the sweet briar, making a very pretty as well as unique tree. A Queen of the Prairie was in like manner transformed from a climber to a standard.

I worked two different kinds of apples on the one tree, for instance the Autumn Strawberry and Porter were worked on the Bailey Sweet; also on the Duchess, the buds took to the transplanting very well.

I don't want to leave the idea with you that I have had no failures or that success crowned all my undertakings, for such is not the case. Some of my unsuccessful attempts and misfortunes I will mention. I budded a lot of plums on peach stocks, but not one grew.

In the winter of '92-'3 three feet of snow drifted in the nursery and in the spring I found that fully fifty per cent. of all trees, plants and vines had been destroyed by the mice. Learning by past experience that an ounce of prevention is worth a pound of cure," after each heavy snow fall I tramped it down around the trees and have this year prevented the damage, as I see since the snow has melted off. Altogether I am well pleased with the results of my four years' work.

J. C. Plumb—I am exceedingly pleased to see a young nurseryman. They are exceedingly rare in this state. It reminds me of my younger days in this state when I was doing the same thing, but I want to say to this young man, you do not need to go through all this experience; if you will go to Robert Douglass, who lives near you, or to Mr. Kellogg, through the growing season you will be amply repaid. Do not have any mice in your nursery. Look in the fall and see there is no rubbish in the nursery and then you will have no mice there. If you have any rabbits in your vicinity, look out for your young pear trees, they are very fond of them, and you will have to rub a little grease or blood on the trees, or something to keep the rabbits away from them. I will reiterate what I said before, "I am glad to see a young nurseryman."

A YEAR'S EXPERIENCE IN SMALL FRUITS.

J. L. HERBST, Sparta.

Ten years ago the subject of raising small fruits for home use and distant market was but little thought of by most of those engaged in agricultural pursuits in and around Sparta. Now the city of Sparta is surrounded on all sides by small fruit farms, ranging in size from ½ acre to 75 acres. The total approximate acreage being 374 acres owned by sixty-seven different parties.

In treating this subject, "A Year's Experience in Small Fruits," I will not merely give my own experience but the experience of some of the fruit growers in and around Sparta.

Unlike the wet season of 1892, the hot and dry winds of the season of 1893, wrought havoc to most of the growers. The outlook was grand and many a fruit grower "counted his chickens before they were hatched," and was disappointed.

The strawberry crop of last season was the most unsatisfactory one we have harvested for several years, being only about one half as large as that of 1892. The crop which to all appearances seemed as if it would

be good fizzled out before we were aware of it, and the berries were small, irregular and of poor quality.

The only reason we can assign was the extreme hot dry weather in the time of ripening. The vines were well loaded, but dried up before ripening one half of the crop. Those who had mulched their berries suffered least, while those whose plantations were on sand and had not mulched, had a total failure.

Those plantations which were on heavier soils did better last season during the drought than those upon sandy soils; the berries were much better in shape, size and quality. The plants also appeared much more vigorous and healthier. But very few signs of rust was noticed the past season, while the year before almost every variety showed it to some extent.

Old plantations did much better than the newly set ones; the fruit being far better in shape, size and quality. This may be due to the fact that the roots of the old plants being much larger and reaching further in the ground were less subjected to the drought. It seems strange that those varieties which heretofore had not shown themselves worthy of much comment should at this season of drought show some good points. Tippecanoe and Crawford were among these; the berries were of very good quality and large, and although not heavy bearers, would make very good varieties for home use.

In looking over the last report of the society I find Earle, Wood, Hoard, Van Deman, Enhance and Princess as varieties for trial.

Parker Earl did very nicely the past season. It is a heavy bearer; berries of good quality and quite firm; would make a fairly good shipper. Its only objectionable point is that it rusts a trifle. Wood (or Beder Wood) is of good size, good quality and deserves more attention than it has had. Hoard is a good berry for home use, but is not firm enough to make a good shipper.

Van Deman, in my opinion, should rank next to Warfield. We all agree that the Warfield is the best shipping berry we have and enough has been said about it, the only trouble is, it is a pistillate.

Van Deman is a staminate, and in color, size, shape, quality and firmness is so near like Warfield, that they can be placed in a box together and the purchaser will hardly note the difference. Another year's trial with the Van Deman has fully convinced the growers of it at Sparta that it has come to stay. Still we hear some discouraging reports about it in other parts of the state.

George Hanchett & Son of Sparta, who grow the Van Deman quite extensively, speak of it as follows: "We took two good pickings from the Van Deman last season before we got a ripe Warfield. They brought us $100 per acre per picking, and we sold the entire crop for $4.00 per bushel. Our customers who received shipments of them wanted nothing else. They are not a heavy cropper, but we feel assured that

they can be depended on for a moderate crop, the bulk of which comes just when every one wants strawberries and are willing to pay a handsome price if they can get them."

Park Beauty, Enhance and Princess, the last three in the list, deserve further trial.

The newer varieties which were placed upon the market the past two years deserve further trial as they did not receive a fair test owing to the unfavorable season.

It would hardly be right to pass the subject of varieties without giving Michel some words of praise in return for its good work, which it did the past season of drouth; it did admirably well at Sparta; the berries were of good size, well shaped, of very good quality and quite firm, it did quite well as a shipper. Its heavy foliage no doubt was the cause of the fruit being so extraordinary good, as it protected the berries from the hot sun and winds.

The raspberry crop of 1893 was much better than that of 1892, and would have been still better had the season been more favorable. Red raspberries did much better than black caps and were less affected by the drouth than black caps, which is perhaps due to the fact that the reds are deeper rooted.

But little blight and rust appeared the past season.

In our report I find Gregg, Nemeha and Soughegan recommended for general cultivation. The first two are all right, are good bearers, good size, firm, and are good shippers, but Soughegan is not worth a penny. It is most easily affected with disease, makes a poor growth, berries are small and soft, and but one good picking can be had from them. It is not worth while to grow it, and those who have grown them at Sparta are now taking them out and substituting others. The Palmer is a good one in place of Soughegan; it is earlier, a better bearer, ripening most of its crop before Gregg and Nemeha commence; it seems to be especially adapted to soils where Ohio and Soughegan fail. Ohio will not do well without winter protection; it has been tried and has been a failure.

Johnson Sweet, Hilbourn and Older, recommended for trial, do very well but are not good as shippers. We want nothing better than Nemaha as a berry for shipping. It has been shipped 300 miles and arrived in good condition.

As to red raspberries, we have found nothing better than Marlboro and Cuthbert for shippers. Although the Cuthbert is not quite so good a shipper as the Marlboro, it is later and prolongs the season of reds. Brandywine, which is recommended for general cultivation, is worthless in many places; the berries are small, soft and of a bad color, and have too much of a flat taste. Shaffer is all right as a home berry, but not good as a shipper It is a very good berry for canning purposes.

The blackberry crop of '93 was not more than one third to one half of that of the previous year. We have been unable to assign any partic-

ular cause for the shortage. Canes when taken from winter covering were, to all appearances, uninjured. The buds nearly all started, but withered and dried up badly with the first hot weather. Those portions of the plantations which were so heavily loaded with fruit the previous year were the worst affected.

No berry has been found better than the Ancient Briton by the growers at Sparta, and it still holds its own as the best all-around berry. Snyder does all right as an early berry, but becomes rather poor after two or three pickings. Stone's Hardy is all right for the kind, but a very poor kind. We have found no blackberry that will stand the winter without protection and be profitable.

Currants and gooseberries did well considering the season.

Spraying has been practiced to some extent on two of the fruit farms at Sparta: at the Thayer fruit farms and by Mr. Fisher (although not to the extent that it was on the Thayer fruit farms). Good results were obtained in both instances. In one case gooseberries were sprayed early in the season, before any leaves appeared, and then again just after blossoming. Good results were obtained. The leaves which heretofore fell off soon after fruiting, remained on and were green and healthy in the fall, thereby giving the new wood a better chance of maturing and to withstand the winter much better; the fruit also showed some signs of improvement.

Raspberries were also sprayed, with good results, and the canes which were buried last fall were much healthier and stronger than those put down the previous year. Blackberry canes were also benefited in like manner.

On the Thayer fruit farms experiments were tried in spraying upon De Sota plum trees; some were sprayed with the Bordeaux mixture and some were left to fruit as usual; when the fruit was picked there was a marked difference. Those that were sprayed were of fine quality, good color, smooth and large, while those that were not sprayed were of much poorer quality and smaller. They were also stung by some insect and were covered in many places by large brown spots.

The fruit growers in and about Sparta are continually making headway in their methods of culture, and those that heretofore were slack in their methods have found out that only the best methods of culture bring the largest and best yields of fruit and that only by thorough and frequent cultivations, systematic and careful pruning and good winter protection can the best fruits be obtained.

DISCUSSION.

C. E. Toby—There is one criticism I want to make on Mr. Herbst's paper, and that is where he speaks of the Ohio as needing protection. We must remember that he speaks from his standpoint, and that is Sparta where we have to protect everything. The Ohio does not need so much protection as some other varieties; we merely lay it down and cover the tips with dirt. We do not protect the Ohio so carefully as we do the Gregg.

Q—How can you quickly cover blackberry bushes?

A—We just throw them down and cover them over with dirt.

J. L. Herbst—We lay them down as we do any other bush and cover the top with dirt.

Mr. Grisim—What kind of currants do you reccomend?

J. L. Herbst—Victoria and White Grape.

A. D. Barnes—I have North Star currants that are growing very strong and successful.

Franklin Johnson—Those of us who were present last year remember that we were advised to cut off the runners of strawberries in the fall, the first of September. Has any one experimented with them the past year, and if so what has been the result?

J. L. Herbst—We usually cut them away in the middle of June, and as late as July.

Q.—Is there a good market for gooseberries ?

Geo. J. Kellogg—I have had three or four years' experience with gooseberries. We consider Downing the best there is. They bring about $1.20 per case at home. We have no trouble in finding a market for our berries, and are always able to sell all we have, and could often sell many times more than we raise.

Q.—Does not the currant worm trouble them?

Geo. J. Kellogg—Yes, sir; but we also trouble the currant worm.

Q.—Do you trim gooseberries up from the ground ?

Geo. J. Kellogg— Yes, sir; we do. One of the reasons why people do not get better results from gooseberries is because they let too much wood grow.

Mr. Hartwell—Has any one present fruited the Red Jacket goose berry ?

Geo. J. Kellogg—I think very well of Red Jacket. Downing does not mildew with me.

Mr. Hartwell—There seems to be an increasing demand for the gooseberry; and there will be for several years.

We trim thoroughly, both gooseberry and currant. Some people plant too closely; and many neglect to cut out the wood. We plant three and one half feet by seven. They yield 140 cases per acre; the yield was not good last year. We trim up from the bottom and make a

little tree of them, trim from underneath and trim out, give a thorough pruning. We use Paris green for the worms; it has never been necessary to use it after they are as large as shot. The worms will come two or three times.

R. J. Coe—I have fruited Red Jacket and like the fruit very much.

Q.—Mr. Kellogg, how far apart do you plant gooseberries?

Geo. J. Kellogg—Three feet one way by seven the other.

Q.—How many gooseberries did you raise last year?

A.—About 170 cases to the acre.

Mr. Hartwell—You can't manure them too much.

Geo. J. Kellogg—That is so; they will stand a great deal of manure. We use White Hellebore and Paris green for the worms.

A. D. Barnes—I use Paris green about one-eighth as strong as I would for potatoes. I put it on as soon as they are out of bloom.

Q.—How near to picking time do you do the spraying for currants?

Geo. J. Kellogg—We spray until the currants are about one-fourth grown.

Q —What is it that produces the worm, a fly, or white miller?

A.—A little black, winged fly.

Mr. Grisim—I have used White Hellebore for the last thirty years and I have never failed to raise currents.

J. C. Plumb—I would like to hear from one of our members, Mr. Stickney, who is said to have taken $2,700 worth of currants from four acres.

J. S. Stickney—I have had fair success with currants; enough, in fact, to induce me to put a few more acres into currants. I increased my plantation to eight acres last year, and shall increase it two acres this year. I first began growing currants about eight years ago, when I set some of them out on my stump land. The land was in no condition for anything like thorough cultivation. The product of the four acres is something like $2,600 or $2,700. They were marketed in Chicago. I have in the past grown only two varieties for market, the Holland and Prince Albert; they are not a fine currant, not what I would like myself; nothing like Red Dutch or White Grape. I have grown those two varieties because they were late, and can be sent to market after the other varieties of currants have come and gone. Thus I have been able to get a good price for them. They are firm and will ship well. Neither of them is a first-class currant as to flavor and texture. They are good looking berries and handle well. If well ripened on the bushes, the Prince Albert would be fairly good for use. I have the Red Dutch and White Grape in my garden and use them on my table. I must confess that my conscience did trouble me a little about the Holland, but they brought the money; and that was what I raised them for. I am starting a new plantation; and it is very different as to the varieties. My conscience has driven me out of the idea of planting such currants as I

have in the first plantation; and so I am putting out better kinds. As one item of my planting, I will say that I am putting in nearly two acres of Fay. I do not suppose there is a man here that, having seen the Fay, could be induced to put out one hundred of them. It is not an inviting looking bush, but, if it does nothing else for me, will cultivate my patience. The Fay bears very fine fruit, and it is of good flavor. I have coaxed myself into planting them, in the hope that I could, by pruning and cultivation, make the bush stronger, and give it a better and more upright appearance. I believe there are dollars and cents in it; and I would rather send a nice article to market than a poor one. Every one says, "Plant farther apart—plant six feet each way." My new plantation is five feet apart each way. If there is one error more than another that I have committed, it is in not trimming out enough. I became convinced of that last year when I was in California; there the currant bushes are pruned down to within three feet of the ground and kept there. I think, with severe pruning, five feet apart will do well enough. I would not use Paris green freely. I would not use it after currants were a quarter grown.

Q.—Is the fruit any better for being held up from the ground?

A.—No, sir; but the bush does better by being kept off the ground.

Q.—What part of the bush do you prune, the old or the new wood?

J S. Stickney—We prune out nearly all of the old and some of the new wood. The thin portions should be pruned and the slenderest of the new shoots, that keeps the bush sturdy and compact in appearance.

Q.—What soil and climate is best adapted to currants and gooseberries?

Geo. J. Kellog—The humid climate of England.

Mr. Grisim—Put on lots of manure and it will not make much difference about the soil.

Q.—How do you put on the paris green?

J. S. Stickney—I use a spraying pump, because, because I have it for other purposes. Up to two years ago I used to put on Hellebore dry by means of a sprinkling box. Two years ago I tried some in solution and it did far better execution than in the form of powder, but I applied the solution with a force pump. The pump has sufficient force to throw it not only all over the leaves, but it forces the leaves out of their natural position, so that it gets all over the under side and into out of the way places. Last year I applied London purple, but for another purpose. I have an enemy in my plantations, the leaf hopper, that is gaining on me every year. I applied London purple and Kerosene emulsion, and kept it up until the currents were a quarter grown. But if I were fighting the currant worm alone I would use Hellebore, and if possible apply it with a spraying pump.

INDUSTRIAL EDUCATION.

J. A. GAYNOR, Grand Rapids.

The absolute needs of the human family are food and shelter. The production of these must ever remain the chief end of all human activities. It is only when man's productive powers are in excess of his absolute and immediate wants that civilization and progress are possible. Until men are well fed, well housed and clothed, the work of the missionary and moralist is in vain; whole tribes of men well instructed in the principles of Christianity, but not in the art of supplying themselves with food and shelter, have been known to relapse into heathenism after exposure to the cold and famine of a few severe winters. Even fair specimens of our own boasted civilization in the Greely expedition were by a few months of exposure to cold and hunger reduced to a state of cannibalism and a meanness of spirit for which it might not be easy to find a parallel in "Darkest Africa."

The marvelous increase in the productiveness of human labor during the past fifty years is therefore not only the chief glory of our present civilization, but it is the most substantial guaranty of its permanency. Are we then physicially much stronger or morally much better than our grandfathers? This vastly increased capacity to produce is not the result of physical or moral development It is the natural result of the development of the intellect, and the schoolmaster of the last half century has proved himself a greater producer than the mightiest laborer. Then, does it pay to educate? There is no longer room for doubt, and the only question that remains is, are we doing all that we should and in the lines most profitable.

Whatever may be our love of science and truth for its own sake, it can not be said to be good until we see its fruit in action. The scientist and the laborer have too long lived apart. They are now rapidly approaching each other, but the highest results can not be secured until their work is blended as the work of one man.

We find that about one half of the human family are engaged in producing from the soil the so called raw material, and the other half in manipulating this material into form to meet human wants, and in transporting it to the place of consumption.

A glance at the progress of the last fifty years will satisfy the most casual observer that our development has been almost wholly along mechanical lines,—the application of the natural forces, through skillfully devised machinery to the work of manipulating and moving the raw material; and that the great stimulus that brought this about has been the protection and reward that society offers to the inventor of every mechonical device by securing to him a liberal reward for his labor saving invention.

As compared with our modern development in mechanical skill, in the work of producing new and improved varieties of plants and animals that

minister to our wants and in the art of cultivation and caring for these we have done nearly nothing. Yet if we hope for progress it is in these lines we will find our richest future rewards. Why is it that agriculture and horticulture have made so little progress while the mechanical arts have developed with such amazing rapidity? The reason is simple. The state has left everything to be done by the individual, and guaranteed to the inventor of a trifling device a rich reward, and made no effort and in fact professed to be unable to reward the one who would introduce an improved variety of plant or animal, or superior methods for their care and cultivation.

Is it not a strong and lamentable fact that the man who makes an improvement in a mechanical device by which the people of one nation are better equipped for killing those of another, is more likely to secure a rich reward than the man who produces a new variety of wheat with which the nations may be better fed?

The intrduction of the potato and Indian corn, has probably done more to promote modern civillzation than all the inventors and moralists of the last three centuries.

If the work of securing improved varieties of our cultivated plants and domestic animals and the best methods of caring for them can not be left to individual efforts (and it is patent it can not, as the state does not pretend to guaranty to such workers a just reward for their labors), then this work should and must be done by the state itself.

The state is no longer a demigod to appease which we must offer human sacrifice without hope of reward, nor should it be a mere judicial tribunal for enforcing rights and repressing crime. It is and should be like our plow or our hoe, a mere tool or instrument to be fashioned and used in any way that will serve men best.

Already it has engaged in the work of education, but it has not gone far enough; the care of domestic animals and the cultivation of plants must be developed to a science at the public expense, and the wisdom thus acquired must be taught to the tillers of the soil.

The agencies through which this can be best accomplished is not so much the issue now to be pressed, as the fact that the state should proceed to accomplish it through some agency. The University Experimental Farm has already done much, and the Horticultural Society and the Farmers' Institutes have proved good agencies for the distribution of knowledge, but they have not done enough; they have been crippled by false economy on the part of the state. The matter should be agitated until the powers that be would realize, as we realize, that they should do more; that the wise management of our state affairs is vastly more important to us than national issues. If the men who till the soil and cast a majority of the votes would only realize the duty of the state in this work, and their own power, the good work would not be long delayed.

This paper is incomplete, and I regret that it is so. I never attend a

Farmers' institute that I am not struck by the intense ignorance manifested. One man says, "I planted my potatoes in the full of the moon, my neighbor planted his in the new; just see my big potatoes and his little ones!" Until you can get at the theory, the reason that illustrates the law of cause and effect, you can not expect to succeed.

One branch of work that ought to be set forth at these meetings is some well-defined plan by which the state could educate the people in the industrial lines of horticulture and agriculture. I have not suggested a scheme by which it could be done, but if one half of the art that has been turned toward electricity for lighting purposes could be brought to bear, a plan could be developed that would be practical. I have no doubt there are just as many plants in the wild state that would prove beneficial to man as those that have been brought out. The state should carry on the work of seeking out and developing these wild plants, and of finding out what they contain that is useful to man. It is not long since celery, oranges, cauliflower and many other useful vegetables and fruits were developed from wild plants. It is not long since we began to cultivate cranberries. There is need of something being done in this direction by the state as long as it can not be done by the individual. The trouble is, we get interested in things that are far away and forget those that are near us.

GROWING VEGETABLES FOR THE MARKET.

GEO. B. SMITH, Green Bay.

Asparagus seed germinates very slowly, and in order to be sure to have it grow we plant it as early in the spring as the ground is in good condition to work. We sow in drills one foot apart; the plants ought to be at least one inch apart in the row to make strong plants. Keep the ground free from all weeds and cultivate frequently with a hand cultivator the first year. The second year select a piece of land as free from stones as possible and have it well manured and free from sod. Set the roots in rows three feet apart and one and one half feet apart in the row. We use a plow for making the furrows to set the plants in. If you want all white asparagus set it six inches below the level of the ground. If your market wants all long green, then three or four inches is deep enough to set it. Endeavor to have the rows reasonably straight, and stand up a stake at each end of the row, and if the rows are long ones stake every five or six rods, and as soon as the bed is done we set early onions, lettuce, or plant spinage or radish seed or some other early growing crop, two rows in every space, the first year after it is set. Weed and cultivate same as first year, and be sure to harvest the crop that is growing between the aspara-

gus rows as soon as it is ready, so as to give the asparagus a fair chance to develop. The third year mark the rows the same as the second year then take a broad hoe and cut the tops off just under the surface of the soil and fork and rake the tops together and burn them, and give the bed a top dressing of fine manure and work it in the soil with a disc harrow, fork, or some other tool; rake smooth and plant in every other space instead of every space as we did the second year. The third year we cut some for market, but we do not cut so far into the season as we do after the plants have grown stronger. Continue this yearly double cropping until the asparagus has spread over the ground until there is not enough space between the rows to put a second crop, and then be content with the aspargus.

The first green onions that we send to market are what we call winter onions; they are grown from tops that are very similar in appearance to the pig onion tops. We set them in August and get as good a growth as possible before winter and do not cover or protect them in any manner, they never winter kill; they start very early in the spring and usually by May 10th they are large enough to begin pulling. The first ones ready to pull are those that are grown from the bottoms of the onions that raised the tops for seed the previous year. These are eight or ten days earlier than the tops are; the winter onions are followed by onions from sets that have been raised from seed the previous year. We have two methods of growing these onions from sets; one is to have the land well manured and set the onions in rows about eighteen inches apart and three inches apart in the row. As soon as the onions are up so that the row can be easily followed, we run through with a cultivator and sow carrot or beet seed between the rows, and by the time the second crop is six or eight inches high the onions are harvested. We cultivate the second crop in a very thorough manner and usually secure a large crop of onions, carrots, or whatever the second crop may be. The other method is to set the onions between some crop that takes the entire season to mature, always getting the onions off the ground as soon as possible, and always cultivating the soil after they are harvested. These onions from sets are followed while green by one of the very early varieties of white onions. We take great pains to have our onion land in good order and sow the seed as early as possible in the spring, in rows about fourteen inches apart, sowing about six pounds of seed to the acre of the early white varieties. We cultivate as soon as the rows can be seen enough to follow; hand weed when about three inches high, and continue cultivating and weeding until the crop is grown. The first early white ones are followed by a later variety of white ones which finish the season on green onions, which is from about May 10th to August 25th. We use about four pounds of seed to the acre of the late varieties. When the tops of the main crop have nearly all fallen down and are pretty well withered up the onions are ready to pull; they should lie on the ground four or five days before being topped. After they are topped we put them on shelves about ten or eleven inches deep, and they become very dry in a short time.

Pieplant or rhubarb is propagated either from seed or cuttings. If the plants grown from seed are used, throw out all that seem inclined to grow small, slim stalks for they do not yield as much as the plants that have the largest sized stalks. If cuttings are used, select the hills that have the right kind of pieplant on during the time of its growth and mark them so that when spring comes you will know which hills to cut up to make a new bed with. Be sure to have the ground rich and well cultivated. Set in hills five feet apart each way and press the earth firmly around each plant. Cultivate often, and keep all weeds down; manure the bed every year after the crop is harvested. Some crops, such as onions, dwarf peas, spinage or lettuce, can be grown between the rows the season that the bed is set; after the first season no other crop can be grown between the rows for the pieplant grows up very rapidly and needs all of the space allowed for it. We do not pull any the first year after it is set. If the bed is well cared for it will last from six to ten years before it will have to be renewed.

Lettuce is grown by sowing the seed in hotbeds and transplanting the plants into other hotbeds and in the field; when set in the field we usually set it in between the rows of strawberries that have just been set out, or on land where we expect to plant melon or squash seed later in the season, leaving the space where we want to plant seeds vacant. The crop in the hotbeds is followed by the crop transplanted into the field, and this crop is followed by a succession of sowings in the field which last until frost comes. Lettuce likes a rich mellow soil.

Spinage for use in the early spring is sown from September 1st to 10th in rows about one foot apart; cultivate as soon as it is up, and try to have it about one half large enough to cut when it freezes up. After the ground has frozen we cover it with marsh hay or straw which is raked off in the spring as soon as the frost is out of the ground. This fall sown spinage will be ready to cut about the same time that asparagus and winter onions are ready. We make a succession of sowings in the spring, so as to have it last until new beets are ready, when the demand for spinage ceases in our market.

Radishes will do well on land that is poor, when we consider it from a market gardener's standpoint. They do much better on a light loam than on any other soil that we know of. We make our first sowing about ten days or two weeks after we begin plowing in the spring, and we fill up between such vegetables as beets, parsnips or any thing that requires the most of the season to make its growth. The first sowing in the spring often has a good many worms by the time they are ready to pull, but it is necessary to get some radishes for market as soon as possible, and we begin sowing early in the season. We make one sowing each week until the 1st of September, and this keeps us in fine stock from the time we begin to pull until the ground freezes in the fall. Sometimes it will happen that the stock is too large; if this occurs when the radishes are in between the

rows of some other crop, they must be pulled up and thrown away as soon as they are large enough to use, or they will ruin the other crop in a very few days.

We plant sweet corn as soon as we think it will do and the seed will not rot in the ground. For our first early we select a location that we consider as early as any ground that we have; we plant in hills three feet apart each way, leaving three or four stalks to grow in each hill; as soon as we can see the rows we begin cultivating, and sometimes we harrow before the corn comes up. In the first early planting we raise a crop of pumpkins to follow the corn. The stalks are cut and put in shocks as soon as the corn is picked. We follow the first planting with other plantings, so as to make the season for green corn last until hard frost comes. We take pains to save all of the stalks for the cows, as we consider them very good fodder when well cured. All of the rough corners and some clay spots on our land we plant with corn, as it usually does very well on these places that would not be fit to plant with most varieties of vegetables. When I call these spots rough, I mean in comparison with a fine, rich loam.

As cabbage is one of the most common vegetables, and perhaps as easily grown as any of them, a description of the manner of cultivation would scarcely seem to be necessary. For the first early we sow the seed in hot beds about March 25th; this gives us good plants to set in the field about May 10th or 12th. We set the first early in rows two feet apart each way. Plants set at this time are liable to become infested in the roots with maggots which will eat the roots until they kill the plants or very nearly so. Prof. E. S. Goff has found a method by which the work of these maggots can be prevented. I presume the most of you are familiar with it. The maggots do not do any harm to the cabbage set after May 18th or 21st. After the first early we set for summer use about two and one fourth feet apart each way, and late varieties two and one half feet each way, always giving very thorough cultivation. If the leaves of the plant do not start close to the ground we draw a little earth around the plant, as we find the cabbage will head better than it does with flat cultivation. There is not much danger of getting the land too rich for cabbage; our theory is to have it rich enough to raise a head of fair market size, not aiming at the largest possible quantity per acre. There are very few markets, except kraut factories, that prefer very large heads, and even in kraut thesmaller heads make a finer article than the larger ones. The setting out of plants is a bugbear to a great many people, but it ought not to be. In the first place do not be afraid of the job. After the land is ready to set, and you have the plants ready, let a boy or girl take a basket of plants and walk between two rows, or marks, and drop one plant in each place where the lines cross, and the setter on his knees follows close after, so that the plants will not dry up in the sun if it is warm. The setter carries a dibble in his right hand and picks up the plant with the left, sticks the dibble in the ground

where the plant is to set, making a hole for the roots and quickly inserting the plant with the left hand, then press the earth firmly around the plant with both hands and the work is done. You can easily set from five to ten plants in the length of time that I have spent in describing the operation. If the ground is wet we use bags to tie around the knees of the setter in order to prevent any ill effect from the damp ground.

Hubbard squash has grown steadily in favor since its introduction twenty five or thirty years ago. We plant in hills about ten feet each way, sowing dwarf peas, radish, or something else, between the rows, always clearing the crop out from between the rows in time to give the soil a very thorough cultivating before the vines cover the ground. We plant the seed quite thick always allowing something to feed the bugs with, as this gives us a better chance to get a good stand of the plants on the ground; two plants to the hill is enough if the land is in good order. If it is rich enough to raise a good crop of corn or potatoes it is rich enough to raise a good crop of Hubbard squash. Beets like a well cultivated soil that is rich enough to raise a good crop of corn or potatoes We sow in drills fourteen to eighteen inches apart, according to the variety that we are planting. For first early, sow as soon as the soil is in good order to work, and sow again, later, for fall and winter use. When we expect to pull the beets for bunches we let them stand quite thick in the rows, not more than one inch apart, but when wanted for bushel beets, thin to from three to five inches according to the variety. They ought to be harvested before it is cold enough to freeze the beet as they do not stand much frost on the root.

A good crop of carrots can be grown on soil that is rather poor, from a gardener's point of view, or in fact most any other view. I do not wish to be understood as meaning that they will do better on a poor soil poorly cultivated, than they will on a rich soil well cultivated, but if you choose a piece of land that is rich enough to raise a large crop of choice table beets and sow one half with beet seed and one-half with carrot seed and take proper care of them, the result will be a very fine crop of beets and a very large crop of carrots with the chances very much in favor of the most of them being unfit for table use; some will be partially rotten and a good many cracked open and the most of the balance so large that they will be unfit for table use; therefore do not make the land too rich. For first early we sow as soon as the ground is in good order for working and continue sowing at our convenience until June 10th to June 15th; cultivate as soon as the row can be followed; do what hand weeding is necessary, cultivate frequently, and we have always got a crop. I do not mean that we have always harvested a crop on all the land sowed with carrot seed, but we have always had a large stock for market, and have not missed a year. Thin from two to three inches apart from the main crop. They are grown very easily.

Tomatoes, like carrots, do not require a very rich soil; in fact, we think

the two are very near alike in the amount of manure required to raise a good crop, which we call about 500 bushels to the acre for either. Tomatoes will do well on a stiff, heavy soil where no one would think of planting carrot seed. We plant the seed in hot-beds about March 20, and when the plants are about three inches high we transplant into other hot-beds four inches apart each way, or farther if we can spare the space; this will, with proper care, give good plants to set in the field as soon as the weather will permit, which is about the 16th to the 20th of May. We hoe the plants frequently, give thorough cultivation, and, as with carrots, we have not missed a crop. The rule we follow in transplanting tomato plants is to always set the plant a little deeper than it was before it was taken up. We consider a well budded plant the best size for transplanting in the field, but the blossom ought not to be open, for if the plants wilt a little, or suffer from transplanting, the blossoms will fall off and your opportunity for early tomatoes is lost.

Celery, for summer use, must be started in hot-beds. We begin sowing about March 1 and follow with another hot-bed sowing about one month later. Cover the seed very lightly, not more than one-eighth of an inch deep, and spread one thickness of a common potato sack over the surface of the soil. Watch it very closely, and just as the seed breaks ground take the potato sack off. If the sun shines clear during the first two or three days after the sacks have been taken off, it must be shaded during the warm part of the day from the full effect of the sun; this is done very nicely by laying boards on the sash, leaving three or four inches between each board; this furnishes plenty of light and sufficient shade. When the plants are one and one half inches high, they are about right to set out in other hot beds. We set in rows about four inches apart, one and one half to two inches apart in the row. Be sure to not let the sun shine on these transplanted plants before they are able to bear it, for they are very tender. Shade in the same manner as the seed-bed was shaded. If the plants should be inclined to run up too fast and are not stocky enough, shear off the tops a little and they will grow more strong.

About the middle of May, or perhaps earlier, if the weather is pleasant and warm, the plants will be of good size and should be transplanted into the open field. We mark the rows four feet apart and then with a double mouldboard or celery plow open a furrow about four inches deep on the line that we have made for the row; then with a fine tooth horse cultivator go through the furrow; this will fill it up a little but it will be lower than the ground between the rows. If it is not reasonably straight, draw a line down the furrow and make a mark along side of it for it is more important in the early celery that the rows should be straight than it is in the fall crop, although it is a good plan to have the rows straight at all times. We set the plants about five inches apart in the row, cultivate every eight or ten days, and when the celery is ten or twelve inches high, board it up; the boards should come up about level with the top of the plants, but they

must not be too close together on the top or they will smother the plants and cause them to rot. They should be two or three inches apart on the top, according to the size of the celery. The boards are held together by wire hooks on the top and earth along the bottom. In about two weeks the celery is ready to dig. As soon as we have boarded the early celery up we work the space between the rows with a horse cultivator, going through the space several times if necessary in order to have the soil worked to a good depth, and and set another row in each space. When the first crop is harvested, go through with the horse cultivator often. The first setting of celery is followed by other settings which are in such order as to make the celery season continue steadily from the time we begin to dig until the entire season's crop is sold. We do not use boards on the late crop but bank with earth. We use a large amount of water on a crop of celery in all ordinary seasons, but it is impossible to follow out all of the details of a garden in so short a time as we have to devote to the subject.

As I have referred to hotbeds, perhaps a few words in regard to the manner in which we construct them would be in order. We dig out the earth where we want the bed to stand about ten or twelve inches deep. Set the posts so as to board on the inside of them. We use six-foot sash and make the bed one foot higher on the back side than on the front, which is about two and one half feet high. We use 2x4 for the sash to slide on. For early beds we put in twenty inches of fresh horse manure and five inches of earth. It will settle in a few days enough to leave sufficient space between the earth and the glass. We board up on the outside of the posts and fill the space between the boards with manure, packing it down to keep the bed from cooling off at the sides. We use quilts made of heavy muslin with five to seven pounds of cotton in each one; they are nine feet long and seven feet wide. We spread them over the glass whenever it is too cold for the beds to be safe without them.

In conclusion I will make a few general remarks which each one must apply for himself.

1st. Have your land well drained.

2nd. Have your land well manured.

3rd. Have your land well plowed and harrowed.

4th. Get seed that you believe to be first class.

5th. Take great care in having the seed well planted.

6th. Cultivate often and weed when necessary. When setting plants out make it the rule to have them well watered. Fill up all vacant spaces as soon as the crop is harvested, just as long as it seems practicable to obtain a crop, "thereby saving all the fragments that nothing may be lost."

DISCUSSION.

Geo. J. Kellogg—Have you had trouble with the red spider in your hot-beds?

Geo. B. Smith—No, sir.

M. A. Thayer—It seems to me that the directions given in this paper would be an exact and safe guide for the cultivation of small fruits. We must not lose sight of the fact that intensified culture is necessary.

Geo. B. Smith—We put on twenty-two horse loads of manure per acre; that amount will raise what we call a good crop of cabbage. If we want to put beets, carrots or potatoes on that land we do not put on any more manure that year. The question of manure every man must solve for himself. I look the land over, and if I see a spot that I think needs it I put on a little extra manure next year. We are obliged to use a large part of our manure fresh; we have never been able to get all we need composted, but we raise a profitable crop on fresh manure.

J. S. Stickney—What proportion of its value does a hundred cords of manure lose, that is of its fertilizing capacity, in six months?

Geo. B. Smith—I can not answer that question.

J. S. Stickney—I am satisfied, in my own mind, that I have fooled away a good deal of manure by putting it on too heavily.

Geo. B. Smith—We had a little piece of ground, about one acre in the piece; we had sweet corn on the land; we put on three loads of fresh horse manure. There was a good deal of red top grass seed in that manure, and enough of it came up to make a good meadow. I wanted to put cabbage on the land but didn't know where to get the manure. Henry said he knew where he could get one load of rather poor manure. I told him to get it and never mind how poor it was. It was saw-dust manure. I put it on and I raised as good a crop of cabbage as I ever saw.

A. L. Hatch—Do your peas suffer much from mildew in foggy weather?

Geo. B. Smith—We do not grow field peas, and we have very little foggy weather at the bay. Our peas will mildew in July if there is any defect in the cultivation.

Mr. Grisim—Have you found any remedy for the cabbage worm?

Geo. B. Smith—We set a very large field of cabbage and we do not do anything for them. Large fields do not suffer from the worms as small ones do. There are a great many acres of cabbage grown at the bay. We have never lost a hot bed by frost that we took proper care of. They will last and keep up heat for two months.

Q.—What do you do to destroy the squash bug?

Geo. B. Smith—We turned up the leaves of squashes and sprinkled the under sides of them with Paris green. A man can go over an acre in a short time.

NOTES AND OBSERVATIONS ON A SMALL FRUIT FARM.

R. J. COE, Ft. Atkinson.

In March I received a letter from friend Hoxie saying I was appointed a committee on observation. Later I saw Mr. Hoxie, and he asked that I write a paper for this meeting. When the program came I found that I was down for a paper on "Notes and Observations on a Small Fruit Farm." I will endeavor to combine the two and make the paper somewhat in the form of a report.

Although the year just passed has been one of disappointment, and even discouragement, in some cases, I think the fruit grower has fared as well as other tillers of the soil. And when we consider the present unsatisfactory condition of affairs and look over the different kinds of business enterprises men are engaged in, we find that we have no cause to complain of our calling; but, on the other hand, we have great cause to be thankful that we are horticulturists. The winter started in early, with a good body of snow; and every thing was covered in fine shape. We all thought that it would be one of the best fruit years we had had for some time.

The fore part of the winter was characterized by heavy storms, high winds and severe cold. This continued until after the middle of February, after which we had but little wind and good deal of bright, clear, sunshiny weather, which was was very hard on all canes.

The spring opened up nice and warm; but, after a few days, it came off cold and stormy, with heavy rains accompanied by hard winds, mostly from the east.

The strawberry crop of '93 was the most uneven and, in many places, unsatisfactory one for some years. It was my fortune to travel over parts of Jefferson, Rock, Dane, Walworth and Waukesha counties the past season, and I took considerable pains to inquire about the fruit crops. One man would say, "This is a strawberry year and no mistake; never had so good a crop in my life," while perhaps the very next man would say, "What ails the strawberries this year? They don't amount to any thing." As near as I can make out the early varieties were best and I account for it this way. We had just about a week of reasonably fair weather at blossoming time and the blossoms that came out during that time made perfect fruits, while the ones that came out later (whether kept back by the mulch, whether later sorts or they blossomed later by reason of the lay of the land), were injured by the almost daily rains that we had at that time. This emphasizes the old adage that we ought not to carry all our eggs in one basket. In other words, it would be better and safer to have several varieties. But, at the same time, by close observation we also find that we are growing some varieties every year at no profit, if not at a positive loss. I think the

tendency is to have too many varieties. We read about the new sorts and think we must have them, for they may be just what we want. Now this is all right and is a good thing to do, but if they are not as good as the ones we already have, discard them. It is not in *getting* the new kinds but in keeping the *unprofitable* ones that we make the mistake. I want to emphasize what I said last year about planting strawberries, after strawberries for I saw a case the past season that demonstrated perfectly that it does not pay. A man in Waukesha county planted an acre where he had plowed under strawberries the year before. When harvesting time came he had the wonderful crop of forty, sixteen quart cases of very small, poor berries. The plants were small and weak to start on and the leaf roller was out in full force on that bed while on an adjoining bed on fresh ground a good crop was grown, with but little if any trouble, from the leaf roller.

The raspberry crop of 1893, so far as I have been able to learn, was quite satisfactory. The crop was fairly good with a lively demand and generally satisfactory prices. On our grounds the Older leads all other black caps in hardiness and productiveness, and has the power of resisting drouth and heat better than any variety I know. The Ohio holds its own as a profitable variety, and is, I think, the most popular of the older varieties in our section. The Schaffer is gaining friends every year, and is destined to crowd out the sucker varieties, especially in private gardens and to the limit of the near market, on the commercial grower's grounds also. In planting raspberries it will certainly pay to row them both ways, for by this method you can cultivate across the rows about twice in the spring before growth starts much, and so keep your land more level and save a good deal of work with the hoe. Horse work is cheaper and (so far as it can be done) better than hand work. Everything we can do to lessen the cost of production adds just so much to the profits, and they are what we are after.

Blackberries with us were almost a failure; first, because they were badly winter killed, and what the winter did not take the August drouth did. We grow Stone's Hardy mostly, and do not, as a rule, protect in winter. Have never lost a crop before, and have never had so much injury done by winter's cold as we have by summer's drouth.

I want to say a good word for the fruit of our father's gardens, the valuable, healthful and delicious, but much neglected, currant. I can well remember when it was about the only fruit that was to be found in any farmer's garden, and through all these years, while other small fruits have been grown extensively, it has been grown but very little for market purposes: but, to the few, who have grown it, it has proven very profitable. I am informed that one of our own Wisconsin growers grew and sold the past season $2,700 worth, from four acres, and that too on an old plantation that was in rather poor condition, not having been trimmed or thinned out for years. Our venerable ex president, Mr. J. M. Smith, told me, (if I remember right) two years ago, that his whole plantation yielded an av-

erage of twelve quarts to the plant, which, with plants six feet by six feet, would give a crop of fourteen thousand four hundred quarts per acre. At the moderate price of seven cents per quart this would make the snug little sum of $1,008 from a single acre—a very fair income of itself. Currants should be pruned every year, the plants kept well thinned out and open; in this way we get larger fruit, longer stems and heavier crops that are much easier harvested. They will well repay heavy manuring and thorough cultivation.

What is said about the value and profit of currants is equally true of gooseberries, although with us the past season they did not yield as well as usual, owing, I think, to the unfavorable weather at blooming time. They blossomed full but a good many of them dropped off as soon as set. Grapes were a good crop where ground was kept thoroughly cultivated but they suffered greatly from the dry weather where little or no cultivation was given. Varieties that do best with us are Moore's Early, Worden, Concord and Brighton, with Vergennes, Lindley and Wilder as long keepers. Grapes are a delicious fruit and extend the season of fresh fruit for the amateur, from two to three or four months and help to swell the pocket-book of the professional grower. We cannot well do without them and so long as the eastern growers continue to ship them into our state by the car load, at a profit, it seems to me that we need not hesitate to plant more largely.

In our part of the state about the only apple trees that blossomed at all were Duchess. (I did see a very few Fameuse and Tallman Sweets), and where they were sprayed a fair crop was the result; where not sprayed they were not worth harvesting.

Plums and cherries blossomed very full but the almost continuous rains at that time destroyed all blossoms, consequently no fruit.

It does seem to me that we, as horticulturists, have great opportunities for doing good, as it is mainly by our influence and through our efforts that people will be induced to improve the appearance and enhance the value of their farms by planting shade trees along the roadside; to beautify their homes by planting and caring for ornamental trees and flowering shrubs on their lawns and about their homes; and last, but not least, to improve their health and increase their happiness by planting, caring for and using a great deal more of nature's own medicine—fruit. If we only live up to our opportunities in this respect this old world of ours will be healthier, happier and better for our having lived in it and we shall have the satisfaction of knowing that we have not lived entirely in vain.

DISCUSSION.

Q.—Do you raise any other kind of blackberries besides Stone's Hardy?

R. J. Coe—Yes, but they give the best satisfaction. We plant our currants five feet apart each way.

J. S. Stickney—What do you consider the three best varieties of currants?

R. J. Coe—I think Versailles is good enough. Prince Albert is fine; but I wouldn't talk about the Holland only to get dollars and cents out of it.

Q.—Did your plums blossom this year and fail to set fruit?

R. J. Coe—They did blossom this year and failed to set fruit, but I think it was because it rained so much at blooming time.

Geo. J. Kellogg—Do you consider the Fay currant and Industry gooseberry of any good except to sell plants from?

R. J. Coe—Yes, sir; but I must say the Fay is weak in the branches and will sometimes break down. Industry gooseberry is so weak in growth that it will hardly pay to grow it in this state.

J. S. Stickney—The Long Bunch Holland is a good looking currant, and as far as jelly or spiced currants are concerned, it is, perhaps, as good as any, but for table use it is not so desirable. With regard to the Fay it can be improved, strengthened, by pruning, I think. If I had three or four feet shoots growing on this year's plants I would cut them back.

Mr. Hartwell—What is your distance for raspberries?

A.—About three feet and nine inches.

Q.—How do you get the mulching out of them?

R. J. Coe—Now understand me, we have the rows as far again apart, this distance that I gave, is only the distance apart in the rows.

A. L. Hatch made a motion that one of the ribbons awarded to the Wisconsin State Horticultural Society at the World's Fair be presented to ex-Secretary B. S. Hoxie, as a testimonial of his faithful and efficient work. Motion carried by a rising vote.

Adjourned.

WEDNESDAY EVENING,
ASSEMBLY CHAMBER.

THE LOCAL PAPER AS A HELP IN HORTICULTURE.

MRS. H. H. CHARLETON, BRODHEAD.

Mr. Chairman, Members of the Horticultural Society, Gentlemen and Ladies: I appreciate, in no slight degree, the signal honor conferred upon me in being invited to appear for the third time before this organization of earnest, progressive workers. I recognize in this fact, not so much an im-

plied compliment to the speaker, or special interest in what she may say, as an evidence of that habit of patient persistence which is the natural outgrowth of your vocation.

The motto that leads to success with you is "Try, try again." Indeed, your daily work is to found that habit of mind which is conducive to candid criticism. You discern the good points, few though they be, in even the weakest as well as the good points in the strongest, and cultivating the best points, you endeavor to repress and overcome the poor ones.

It was my good fortune, two years ago, to wish for you success at the coming Columbian Exposition, in showing to an admiring world what Wisconsin has done in the garden. I take special pleasure now, in congratulating you upon the success attained. To be sure there were some drawbacks; every individual heart was not satisfied, but the great commonwealth, in which we rejoice, may give herself a congratulatory hug over what was accomplished, I do not refer to the awards received, proud though we may be of them. Awards may be quarreled over, and judges charged with unfairness. What the people saw and learned for themselves will prove to be our brightest and best reward.

When quste young, I numbered among my acquaintances a gentleman who had traveled extensively in the pursuit of happiness; he had been around the world once or twice, he had wintered in California and Honolulu; he had summered in northern climes; he had fished in the best streams of this country and England; had hunted on the broad plains of the West as well as in the jungles of the East, and one Autumn day he said to me, "Take the world together, there is no place so comfortable to live in, so well adapted to a home as western New York; that is to say, right here in Niagara county, you can have more sport both summer and winter, and can get more good things to eat all the year round than in any other place of which I know."

Wisconsin was not then a state. While attending the World's Fair I visited the Wisconsin exhibit in the horticultural building with a friend, the nephew of the gentleman just mentioned. He was a man born and raised in western New York and fully imbued with the belief, that for fruit especially that was the garden of the world. He knew Wisconsin corn and Wisconsin tobacco. He knew Wisconsin iron and Wisconsin lumber, but this was his first introduction to Wisconsin apples, pears and grapes. Need I say that I enjoyed his surprise and pleasure? He had an appeciation of the natural resources of Wisconsin, her mines, her timber lands and her broad fields waiting for the plow, but he gained a new idea, not of the wealth, but of the progress of the state, as he studied the fruit exhibit. Is not the impression made upon his mind a fair type of the impression made upon thousands of others? Said a friend, a native of New York: "I have been at the fair a great deal and studied many of its features. Nowhere in the horticultural building is there an exhibit which has so much art in its display as the Wisconsin exhibit of fruits. While the apples tempt the

palate they are also a picture to the eye, whether consciously or unconsciously, the person in charge has so arranged as to serve a true artistic sense of the harmony of color." I was so proud that I wanted to say, "I am an honorary member of that Horticultural Society."

Horticulture may be said to be the acme of civilization because all of the best elements of a higher civilization must precede it. Somewhere fruits grow wild. Men may be but idlers reaching out for the bounties nature has them, but where fruit and flowers are the result of labor you will find highly developed social life. It must be that the rights, *meum* and *teum*, are well understood, for no man will plant and till a garden to have it ruthlessly overrun by hostile hordes; it must be that men have attained a certain degree of wealth and leisure, that the first pangs and pains of frontier life are passed, or else man would be engaged in labor that would sooner satisfy the mouth, stomach and pocket; it must be that a certain sense of duty has been awakened, and a certain amount of knowledge gained; it must be there are men with minds broad enough to forecast the future, with hearts generous enough to care for some things beyond the present, with hands willing to labor that others may enjoy, before horticulture can become a success We speak of the art of a nation, of its poetry, its painting, its sculpture, as being the index of its civilization, but sculpture is defined as a poem in stone, painting as a poem in color, and a poem is nature voiced in words. The shadows chasing over the green sward, the symmetry of the tree, the perfection of the fruit, all these are nature's joy, and the man with the spade in the garden is the poet who helps nature to write out her song in color, in flavor and fragrance. Without horticulture all the rest seems bare and incomplete. Do you hear of the palace of some king, the grand old hall of some nobleman, you never, even in thought, separate the building from the handsome grounds that surround it, nor do you think of grounds in a rugged state of nature, you think of park and pasture, of shaded avenue and sunlit meadow, of shaven lawn and gay pasture as well as mountain streams and hunting grounds. The finest dwelling standing alone and bare in the midst of a sunburnt plain is more unsightly than the ugliest ruin hidden, by nature's hand, with vines and moss.

If these things be but half true, it follows that it is not only the privilege in this state, but the bounden duty of every loyal citizen to take some interest in the horticulture of the state. The pioneers have done their duty, they have shown clearly not only the brilliant probabilties, but the actual possibilities of this science in this state. Every citizen should have some public spirit, some desire to serve his country. He may not now be able to prove his loyalty by going to war; the swords have been beaten into plow shares and the spears into pruning hooks; let him by the use of these implements so write his name upon the land that future war and bloodshed will not wash it out, let him cease to live only for his own present good and devote part of his energies to making the desert blossom as the rose for the pleasure of even the passer by.

I have heard it said often that "it does not pay to have a garden, better buy your small truck at the corner grocery." That is in effect, saying, "You better do without it." But that statement, bolstered up with all the facts and figures you can bring to bear upon it, has no weight.

The civilization which is stimulated by healthful exercise, or earnest work, only for the money there is in it is on too low a plane. Horticulture gets its results from those who have some needs that money cannot buy, some desire that money cannot satisfy, a cultivated taste which requires a cultivated environment.

But how are you going to awaken an interest in those indifferent, how deepen and widen the interest in this subject already awakened? A garden does pay; it pays in comfort to the family, in health for the children, in pleasure to all, and if you *can* set a money value on those things, it pays in money also. You may prove it over and over in conventions like this, but the people you wish to convince are not within reach of your proof.

As God gave to Noah the bow in the sky as a token of his covenant with the earth because it was a sign that all people might see, so you must bring your proofs where all peoples can know. You must not only have all the glorious results actually attained in Wisconsin, but the knowledge of these things must be in every home. If you learn by experience how best to train and prune a vine, the best conditions for the placing of a plant or tree and give that experience to some horticultural journal, you reach very few not already interested in the same line. It is not enough either to have a department of horticulture connected with the university, and to maintain an able and popular professor there. The university, proud as we are of it, does not enter into the minds nor largely influence the thought of the great majority of our citizens. Some means of communication is needed that will take your thoughts into homes high and low, rich and poor, and I know of no messenger so trusty as the local home paper. In the prospectus of the Press Congress of the World's Fair, the country newspaper was said to be the "best read and best believed of any newspaper." Not many weeks ago a prominent man in a ringing speech called the local newspaper a power in politics, as indeed the strongest lever to move the masses. If this is true of it in the department of politics why should it not also be in any other department of the world's work? The country newspaper is indeed itself very much like a good kitchen garden, there is a little of everything in it, something to cater to the taste of every individual member of the family. You think it is owned and controlled by the editor and proprietor, but it is in fact owned and controlled by the subscribers. Each one of them knows just what he wants to find in it, and equally well what he does not want to find there, and it is thoroughly read, advertisements and all. That the local paper has not devoted more time to horticulture is simply an indication of the indifference of the people in regard to it.

The publishing of an annual "Ode to Spring," the dates of the different county fairs and the names of its own subscribers who have won premiums is about all the local paper has hitherto done to stimulate an interest in horticulture.

To be sure, under the head of farm notes, clippings from various sources appear, often not credited, and being without authority are of little practical value. The reports from the experiment stations are often too long to be printed entire, and the busy editor has no time to condense or select, besides the report is of most value to those already in some department of agricultural work; to the uninitiated it might as well be in a foreign tongue. The farmers institutes have done much to awaken interest in the cultivation of the soil, but how few could show this past year, such a garden as the gifted and lamented Mrs. Smith depicted to us two years ago.

It is constant dropping that wears away a stone. The interesting papers and discussions of a convention, the specific instructions of an institute are gladly received, but like the good seed falling among thorns, the cares of this life come in and prevent our carrying them into practice. The institute and the convention come but once or twice a year, the country newspaper comes every week. Let us have a little garden spot in it, but don't let the editor run it. He will not know how to care for it. Send him every week a bit of horticultural news to sandwich in between other items. Let him keep the record of the first garden seeds in, and the first garden seeds up, of the first dish of lettuce, the first pieplant pie, the first cut of asparagus, the first mess of peas and of new potatoes. Let him tell who got the most berries from the smallest patch of ground, how many currants you raised and how you kept the worms off. One such personal item is of more value in creating interest than a bookful of incidents concerning strangers in strange gardens. One object lesson well studied is worth more than many expositions of fine theories. In a word, let the country editor keep his readers posted with the latest and best intelligence of the garden as well as the latest intelligence from the world of books and finance. The local paper will take an interest in horticulture just as soon as horticulture takes an interest in the local paper and uses it as a legitimate weapon for its own advancement.

As "iron sharpeneth iron," so the thoughts of the people mingled in seeming confusion upon the printed page, read and pondered by the people, are, in the quiet of the home circle, welded into that mighty power we call public sentiment. The local paper is the "home department" of the newspaper world. It comes into the family with all the familiarity of an old friend, and is treated like a friend. It takes note of your coming and going; discusses your new barn and the paint on your dwelling; is proud of your new carriage, and exults in your handsome horses. Let it go a little further, interest it in your garden and orchard, bid it note the improvements made. Your neighbor will read and heed; he will, in common

parlance, "go you one better." Heathful emulation will beget honest and earnest competition; present gardens will improve, new gardens will spring up in unexpected places; new delight, new comfort will be brought to many individuals in a new exercise of their powers; the state will reap the benefit in better, more contented men and women, as well as in the improved appearance of the country, and you shall prove that "the pen is mightier than the sword," even when beaten into a ploughshare.

Prof. L. E. Gettle of Evansville, who was to have read a paper on "Foundation for Citizenship," was prevented by sickness, and B. S. Hoxie called on Prof. Henry for a few words.

Prof. W. A. Henry—It is quite unexpected to me to be called out here to-night. The particular subject that I wish you would think of with me is our peculiar environment. Environment has a tremendous influence on the human character. It is not so much what a man has in him as the influences by which he is surrounded. You may put a man on a poor, sandy farm, and in spite of the fact that he is possessed of much native ability, he can do little or nothing with that farm. If the farm is a good one, near to markets and surrounded by good conditions, he can succeed. This state is like such a well situated farm. Wisconsin gains largely from her location. To the south of her is a city that will soon have a population of 2,000,000 people. North of that city is another great city that will continue to grow; that city is Milwaukee. Both cities are situated on that great inland highway, the lakes. Then north of us are the great iron-producing regions, and to the west are those great cities on the bank of the Mississippi. Those are the cities and localities that will make the destiny of this state. It seems to me that it is our object to wait upon those cities. It is our work, as farmers and dairymen, to supply them with food. Chicago's milk supply, its meat and its butter supply must come from the surrounding country. Their milk, butter, fine meat, poultry and vegetable supplies must come from us, or some other state will step in and do it. The more I study this matter, the more I see the need in this state for a forward movement, for there are many hundreds of farms, finely located, that have never grown any berries, and few vegetables, for market.

Now to those who fear there is not going to be a market for their produce, I say, do not fear. With the conditions that surround us we have nothing to fear but ourselves. If we are intelligent, we can get this market and can hold it. Boston furnishes the pork for South Carolina. It does not seem sensible to send pork to Boston and from there to Charleston. The berry season begins on the gulf and creeps north. The strawberry business starting in Louisiana goes right up past us, in Madison, to the north. If we do not get the berry trade of these large growing cities, some other locality farther way will take it. There are points in Wisconsin

where I would rather go to begin the berry business than to go to California. As I look over this state and see its possibilities, I feel there is a great weight upon our shoulders. We must seize upon the advantages before us, or in this struggle of competition we will get left. Intelligence and push will tell. California is a wonderful state; she will this year send over 5,000 car loads of oranges into other sections of the country. The struggle for possession of the markets is something fearful, and the markets are not governed by sentimental ideas. A market does not care where a thing comes from, it simply wants the best, as cheap as it can get it. Let me, by way of illustration, point you to the dairy business. Those men who went over this state a few years ago preaching the gospel of dairy science, did a work that lives today. We have now 1,600 cheese factories and creameries. We think of this and are proud of what has been accomplished in this direction; but look at Denmark, she sells annually 30,000,000 pounds of dairy products. England last year paid Denmark $24,000,000 for butter and cheese, and yet Denmark is only one fourth as large as Wisconsin. The Danish government spends for dairy investigation alone as much as we do in our agricultural college for all its branches. The government of Denmark is carefully looking after its interests in this line; it recently made an appropriation of $3,000 to push its butter into France; it keeps men in both England and France for the sole purpose of watching the progress of the trade in dairy products. The English government does not take the same care of its farmers, and as a consequence the Danish farmers send their products into the very market that naturally belongs to the English farmers. The English farmers are still raising wheat and trying to make a living from it, and England is reaping her reward by sending her money to Denmark for her dairy supplies.

If we are going to compete for the trade of Chicago, Milwaukee, Superior and other cities we must do it intelligently; we must push out. Our dairy school is a factor in gaining these results, we have already sent out from our school over 300 men. We have also made an important step toward horticultural education, and have secured a horticultural building. We have at present 173 students in our agricultural college. They are from many states, some from Connecticut and some from Oregon and from states between these two extremes.

You remember when I stood before you thirteen years ago asking you to send me students. If I got a half dozen I thought I did well. I wish now that Wisconsin would press this work so there would be no room for students outside of the state. I want you, when you go away from here, to say something good of us, you must be a missionary friend for us. We must have at least 100 short course students next year, this year we have only sixty-six. Give the young men a chance, let them develop; we cannot send them out as expert gardeners but we ask you to give them a trial and to have patience with them; these boys we are sending back to you are going to do some grand work in the future.

Adjourned.

THURSDAY MORNING,
SENATE CHAMBER,

President Kellogg in the chair.

The report of the committee on the revision of fruit list was given by A. L. Hatch. J. C. Plumb moved that the report be considered seriatim.

Motion carried.

A. D. Barnes—I do not think we ought to report the Newell, we do not know anything about it in the northern part of the state.

J. C. Plumb—I have been growing it for the last fourteen years and I do not consider it hardy.

B. W. Hewitt—My experience with the Newell moves me to oppose its being on the list for hardy varieties. It is about as hardy as the Fameuse.

A. G. Tuttle—If there is a grape that is a long keeper, for home use we want it.

J. C. Plumb—Just as soon as we recommend the Rogers grapes without some limitation we make a mistake.

A. G. Tuttle—I have been growing the Rogers grapes for thirty years. For the first years, I grew them, they mildewed, for the last few years, as the season has been drier, they are all right

The reports of committees on Ornamental Shrubs and Roses were adopted and may be found on another page as also the fruit list as adopted.

REPORT OF B. S. HOXIE, SUPERINTENDENT ON FRUIT RECEIVED FOR THE WORLD'S FAIR.

I hereby submit a brief report of fruit received for the Wisconsin exhibit of the State Horticultural Society.

When it was ascertained that the society had been left with only a very small amount of money to carry on its work in the line which had been determined by the committee, this question confronted the executive board of the society: Shall we make a *small* exhibit of our small summer fruits and the greater effort to show apples, plums and grapes in the fall, or shall we keep up the exhibit until the money appropriated is expended and then surrender our space? The decision by the board was quite unanimous in favor of the fall exhibit and the result has plainly shown the wisdom of that decision. The board therefore decided to hold the space as best they could with as little expense as possible and maintain our position among the exhibitors. Wetherefore issued the following circular letter to the fruit men and sent it to all whose address we could command:

DEAR SIR:

The committee wish to make an exhibit of strawberries for three days at the World's Fair. Can you donate any fruit for this purpose? If so, state how many cases and what varieties, also the date they will be ripe. If you do not wish to donate, state your price per case. All fruit must be carefully picked in *pint boxes*, and not less than one case will be taken in a shipment, but different varieties may be put in the same case. Your business card may be on each box if desired.

The society will pay $25.00 in premiums, a list of which will be made up at the Kilbourn meeting and forwarded to each exhibitor. All packages must be delivered at express office and express charges must in all cases be *prepaid*, but the society will refund the same to the shipper.

Please write the secretary *immediately* so that proper directions for shipping may be sent.

M. A. THAYER,
B. S. HOXIE,
E. S. GOFF.
Committee.

Later the secretary was instructed to procure glass jars, the entire cost not to exceed $100, which instruction was, in part, carried out by the purchase of jars at cost of about $35. In response to this circular strawberries were received from the Fruit Grower's Association, of Ripon; Fred. Harden, of Weyauwega; E J. Scofield, Hanover; F. J. Wells, Milton; J. E. Coleman, Evansville; F. W. Louden, Janesville; Coe & Converse, Ft. Atkinson; J. C. Plumb & Son, Milton, and Geo. J. Kellogg & Sons, Janesville. Charles W. Garfield, of Michigan, was invited to pass upon the fruit, and the premiums were awarded to J. C. Plumb & Son, of Milton, $12; F. W. Louden, of Janesville, $8, and Fred. Harden, of Weyauwega, $5. A small quantity of raspberries, blackberries and blueberries were sent in by M. A. Thayer, of Sparta, as well as by purchase from the Fruit Grower's Union, of Black River Falls. A portion of these were put up in jars which remained on the tables until the close of the fair. The Cranberry Association made a small but continuous display of cranberries on the tables for the entire season of the fair, and fruit placed in jars of water in early May were in good condition the first day of November.

August 21—First fruit received was from A. L. Hatch, Ithaca, three boxes of apples, containing Duchess, Switzer, Garden apple, Pear apple; fourteen new Russians, Canada Peach, White Russian, New Hampshire, Getman's Bean, Sweet Russet, Alexander and Russian seedlings.

August 26—Fruit was received from M. A. Thayer, Sparta, Duchess apples and De Soto plums. From Cranberry Grower's Association, box of cranberry vines and fruit.

August 30—From Charles Hirschinger, Baraboo, Duchess, seedling of Fameuse, McMahan, Moscow, Whitney No. 20, Bell Pippin, Red Russet, and Wine Sap. From Wm. Bryden, Omro, basket of Duchess.

August 23—From S. I. Freeborn, Richland Center, apples were received as follows: Duchess, Red Astrachan, DeSoto plums, McMahan, Whitney No 20, Switzer, Antanovka, Sweet Crab, Winter Pear, Juicy White, Snyder Crab, Red Cheek, Wealthy, Veronice, Early Pear, Biscuit Pear, Var-

sailist Largest, Switzer Seedling, White Swan and Winter Stripe. At this date fruit was received from A. L. Hatch, but the list is not in my possession. From C. A. Hatch, Ithaca, Russian apples (no name), Vasieler, Garden Apple, Russian Pear, Duchess, Switzer (apples not named), Alexander, Red Wine, New Hampshire, Canada Red, White Russian, Getman's Bean.

Forwarded from A. D. Barnes, Waupaca, Wis., to World's Fair committee, September 12, 1893, 49 Wealthies, 12 N. W. Greenings, 16 Switzer, 8 Wolf River, 8 Hibernal, 6 Duchess.

September 5—Apples from S. I. Freeborn, Bloom or Red McMahan, Fameuse, Tollman Sweet, Hibernal, St. Lawrence, Orion Crab, Rega Striped, Veagall, Newall, Snyder Crab, Fall Spitzenberg; Pattens Greening, McMahan, Arabasco, Switzer Seedling, Tasenhasen, Briars Sweet Crab.

August 31—From A. L. Hatch, Ithaca, apples, McMahon, Seedling No. 10, Snyder Crab, American Codling, Baltimore, Sweet Russet Crab, Utters, Patten's Greening, Switzer, Summer Russian, Canada Peach, Winter Streaked, Wealthy, Russian No. 13, Whitney No. 20, Sylvan Sweet, Russian No. 15, New Hampshire, Hibernal, Antanvoka, White Swan and Getman's Bean.

August 30—From S I. Freeborn, apples: White Pigeon, Whitney No. 20 Crab, Garden Apple, Duchess, Longfield, Seedling of Longfield, Price's Sweet, Plums De Soto, one basket of winter pears.

September 7—Apples from Joseph Zettill, Sturgeon Bay: Duchess, Whitney No. 20, Green Gage, Lombard Plumbs and Duchess, pears. From Henry Martin, Sturgeon Bay, apples: Duchess. A Moulton, Sturgeon Bay, Green Gage, and Lombard plums. From A. J. Phillips, West Salem, Whitney No 20, Peach apple and Avista a Wisconsin Seedling of great promise.

September 3—A collection of apples, pears and plums from Geo. Jeffery, of Milwaukee; Purple Gage and More's Arctic plums, very fine.

September 12—From A. L. Hatch, apples: Large Russian, Snyder Crab, New Hampshire. N. W. Greening, Pewaukee; Hyslop Crab, American Codling, Briars Sweet Crab, Repka, Utter, Longfield, Newell, Ben Davis Switzer, St. Lawrence, Wallas, New Hampshire.

September 10—From C. A. Hatch, Ithaca: Peach Crab, De Soto Plums, one barrel Alexander and Snyder crab.

September 14—From A. L. Hatch: Hyslop Crab, Briar's Sweet, Snyder, Repka, Longfield, Newell, Utter, Hallas, Ben Davis, Switzer, St Lawrence, New Hampshire, Wealthy, Patten's Greening, Hibernal, Fall Spitzenberg, Antanovka, Ark Stripe, Haas, Bethlehem, Fameuse, McMahan, Pewaukee.

September 20—Apples from S. I. Freeborn. Box of Wealthy from Edwin Nye, Appleton, apples: Wealthy, Perry Russet, St. Lawrence, Utter

Vermont; Grapes, one basket Niagara. From J. P. Simon, Sturgeon Bay, German prune and Queen of Ireland plums and basket of Ohio pears.

September 25—Apples from E. W. Daniels, Auroraville: N. W. Greening, Pewaukee, and Wolf River. From Wm. Braydon, Omro, apples: Duchess, Wealthy, Mann, and Alexander. From A. D. Barnes, Waupaca: N. W. Greening, Wolf River, Pewaukee, Wealthy.

September 28—From H. Martin, Sturgeon Bay, apples: Plumb's Cider, Utter, Wealthy, Alexander, Wallas No. 2.

September 28—Apples from Wm. A. Springer, Fremont: Duchess, Crocker, Ratsburg, N. W. Greening, Mary, Wolf River, McMahan, Watterson, Jenney, Blain, Watterson No. 5, Cantwell No. 1, Watterson, No. 4, No. 7 and No. 8, Duchess, Purdy, Riches Greening, Wrightman, No. 20, Bailey Sweet, Casseys Blush, House, Casseys Sweet, Bennett No. 1, Cantwell No. 2, Black Detroit, Duchess Seedling, two varieties seedlings, not named, President Smith, Blaine, Martha, Manning, Helen, Hallas, Sweet Russet, Smith No. 4, Northfield, Alexander, Wolf River, Garfield Sweet.

October 3—Apples from A. L. Hatch, Ithaca: Fameuse, Haas, Snyder Crab. Plumbs, Cider, Pewaukee, Repka, Baltimore, Antonovka, Hallas, Winter Streaked, McMahan, Romanite, Walbridge. From S. I. Freeborn, Richland Center, apples: Willow Twig, Wolf River, Rollins Russet.

October 2—Apples from C. A. Hatch, Ithaca: Two barrels McMahan, Snyder Crab, Alexander, Wealthy, Seedling, Fameuse, Bloom and Newell.

October 10—From A. D. Barnes, box containing, several varieties of apples, of which Wolf River and Ben Davis were on branches; also single specimens of Wolf River measuring eighteen and one-half inches in circumferance.

The collection of grapes were very fine, embracing about fifty varieties, and were received from the following growers:

August 30—From A. L. Hatch, Ithaca: Dracut, Amber, Champion, Janesville and Harvest, a Wisconsin seedling. From S. I. Freeborn, Richland Center: Moore's Early, Champion, and in pears at the same date, Flemish, Beauty and Berean. From Geo. Jeffrey, Milwaukee: Lombard plums and Clap's favorite pears.

September 2—Grapes from Coe & Converse, Fort Atkinson: Moore's Early. A. L. Hatch, Moore's Early and Janesville.

September 5—J. M. Edwards & Son, Fort Atkinson: Worden, Telegraph, Lady and Janesville. E. J. Scofield, Hanover: Brighton, Moore's Early, Warden and Champion.

September 9—James Gillis, Cooksville: Brighton, Concord, Worden and Moore's Early.

September 7—From S. I. Freeborn, Richland Center: Janesville, Moore's Early and Florence.

September 11—From M. Gibbon, Berlin: Delaware, Early Victor, Moore's Early, Concord, Worden, Elvira, Lindley, Delaware, Brighton, two varieties not named, Agawam.

September 20—Delaware, Martha, Wyoming Red, Brighton, Rogers No. 44.

October 4—Lady Wilder, Catawba, Merrimac and Lindley.

September 14—Grapes from Coe & Converse, Ft. Atkinson: Golden, Pocklington, Concord, Red Prolific, Elvira, White Frances, Dracut, Telegraph, Worden.

September 14—Lindley, Eaton, Moore's Diamond, Vergennes and Merrimac.

September 16—Grapes from S. I. Freeborn: Lindley, Prentice, Delaware, Creveling, Lady Washington, Perkins, Lady Wilder, Black Eagle, Arnold's No. 2, No. 6 and No. 8, Telegraph, Vergennes, Merrimac, Elvira, Catawba, Agawam, Salem, Richling, Niagara, Brighton, Empire State, Wyoming Red, Rogers No. 28, Pocklington, Moore's Diamond, Woodruff Red, Hartford, Poughkeepsie Red and Concord.

September 20—Grapes from Isaac Gale & Son, Waukesha: Delaware, Niagara, Lindley, Brighton, Woodruff Red, Wyoming Red, Jefferson, Vergennes, Rogers No. 3, No. 4, No. 9, No, 15 and No. 19.

September 22—William Winkly, Janesville, Wis.: Worden, Lady, Concord and Delaware. J. A. Whiffen, Janesville: Concord, Worden, Niagara, Pocklington, Delaware. J. S. McGowan, Janesville: Concord, Delaware, Worden and Moore's Early.

October 10—S. I. Freeborn: Wilder, Lindley, Creveling, Catawba, Agawam and Delaware. C. A. Hatch, Ithaca: Delaware, Wilder, Concord and Worden.

The awards by the committee were: Wisconsin State Horticultural Society, collective exhibit, apples for 1892, Wm. A. Springer of Fremont, Joseph Zettel of Sturgeon Bay, and A. D. Barnes of Waupaca, for display of apples.

For 1893, Wisconsin State Horticultural Society collective exhibit, A. L. Hatch, Ithaca, apples and grapes; S. I. Freeborn, Richland Center, apples and pears; Wm. Fox, Baraboo, grapes; Sauk county, Baraboo, apples; cranberry Growers' Association, cranberries fresh and cooked; State Horticultural Society, cranberry marsh; L. L. Olds, Clinton, potatoes in variety. Geo. Pinney, evergreen seeds and cones.

The Cranberry Association with commendable pride, to show the manner of growing this fine fruit by improved methods of cultivation, transported sections of bog or marsh in its entirety and planted them out in the best condition possible under unfavorable circumstances which existed on the plat of ground assigned. Much of this work was done by voluntary contribution from the members of the society. A medal of award was granted for this exhibit as well as for the display of cooked and uncooked cranberries. These exhibits added very much to the complete exhibit of Wisconsin horticulture.

Later in the season Sauk county made an exhibit of apples and grapes under the direction of the county society, which exhibit will be reported

on by the acting superintendent in charge. The whole number of express packages received from April 11, to October 14, 1893, was two hundred and sixty.

In concluding this report I can only thank the members of the executive board of the State Horticultural society and others of the members for voluntary contributions of fruit and their efforts to make the exhibit a success under so many dificulties, but to A. L. Hatch, S. I. Freeborn, Wm. Springer and C. A. Hatch, my thanks as superintendent are especially due for their efforts to send in fruit at dates as early as possible to do so, and their ready response to every call made on them to keep our tables supplied until the close of the exhibition. All of which is respectfully submitted.

HARDINESS VS. QUALITY.

By J. C. PLUMB, Milton, Wis.

The principles involved in the discussion of this topic have a practical bearing on our northwestern horticulture, worthy of both careful observation and scientfiic research. Were it not so, I would have preferred to let my former brief statement of it rest for time and theorists to prove or disapprove as I have in other lines during the last thirty years of my published record.

And since our esteemed professor of horticulture has in the last volume of our society's report set up most eminent authority to controvert my former brief statement of theory on this topic, I am courteously granted this opportunity of a more full statement of facts in this line.

My position as hitherto given is:

1st. That extremes of desirable qualities in fruit and tree do not, as a rule, exist and may not be found in the same individual. Therefore,

2d. That our list of adapted fruits will, in quality or size, fall below the standard of New York and Michigan, as our climate is more severe on all trees and plants which cannot have artificial protection.

In support of my first proposition, please note the fact that of all our recommended list of very hardy apples, the Oldenburg, McMahan, Hibernal, Wealthy, Tetofsky, not one of them is accepted as of high quality at the east.

The Minnesota Society name for the south half of the state, only the Duchess and Hibernal.

Northern Iowa Society names Duchess, Tetofsky, Wealthy, with a long list of Russians for trial.

Tell me of one variety which the societies of these three northwestern states have recommended for general planting, that is recognized as first quality by apple growers east of lake Michigan.

One year ago, with that beautiful collection of Russian apples on our tables, I challenged any man to show me a first quality of winter apple among them, or among even our own very worthy seedlings which had established a reputation for great hardiness.

I also instituted a comparison of the quality of our hardy list with the standard apples of the east, not to make ours odious, but to show the truth of my theory. This test has never been accepted, to my knowdedge. During the past year I have interviewed a large number of practical propagators and breeders, who have conceded the main point of my theory, in both vegetable and animal life, that the development of the finer qualities is at the expense of vital force, or "*hardiness.*" Compare the Delaware grape with the Janesville; the Rugosa rose with remontant and perpetuals; the Jersey cow with the shorthorn; the thoroughbred horse with the Clydesdale; the Leghorn hen with the Plymouth Rock, and so on through the whole realm of nature – man not excepted.

If this be a rule of development, then we must adapt our practice to it in the selection of varieties, or fail of best results in our tree planting in the northwest. This we have done practically in our recommended lists.

A principle which holds good in our practice we should not deny in theory.

Permit a few words in review of the statements of Prof. Goff on this topic. Prof. Goff says (page 85, vol. 92): (*a*) "It is not the fact that it is necessary in order to have hardiness we must lose quality. (*b*) Sometimes we lose in quality what we gain in size, but we must not regard this as law." Again the professor says on page 146, Rep. of 1893: (*c*) "It is safe to assume that if there is a correlation between hardiness and quality in apples, it is capable of demonstration by a careful study of existing varieties," and then on the next page admits (*d*) "that the average quality of apples at present grown in Wisconsin is inferior to those grown in more favored orchard regions."

As *b* and *d* are admissions covering one half of the argument, I will pass them.

In support of the first and third statements quoted *a* and *c*, the professor brought the Downings as authority as to the hardiness of varieties of the apple. To this I then objected, and do still object, for the reason that their statement was based not on personal observation so much as the opinion of those from whom they received specimens, and from other authors quoted, and these primary authorities were scattered all over the states east and south of Lake Michigan, and some on the European Continent, and that of date from 1842 to 1869 or 25 to 52 years ago.

What changes have come to our pomology in the last half century, we who have seen them should best know.

In a careful analysis of the apple list of the Downings I find that of the 2,000 varieties of apples named by them, 225 have been grown under my observation in Wisconsin. Of this last number Wisconsin is now growing

only about 30 to any considerable extent, and that in her most favored regions, and only 14 of which any nurseryman of our state would dare recommend for the best location. These are: Oldenburg, Fameuse, Fall Orange, Tetofsky, Tallman Sweet, Utter, Wealthy Walbridge, Plumb's Cider, Baily Sweet, Lowell, Perry Russett, Willow Twig, Benoni.

Of the 225 varieties which have been tried in Wisconsin, as above stated, 48 of them are called by Downing "hardy or very hardy," but of which we favor but nine, namely: Oldenburg, Tetofsky, Wealthy, Utter, Plumb's Cider, Fall Orange, Fameuse, Walbridge, Tallman Sweet, and of these only the three first named do we class as *very* hardy.

So on the question of hardiness, the Downings will not do for the northwest. I think if the Downings could this day be summoned to witness, they would protest against the use of their data in the argument of the professor.

I have used this analysis of the Downings' list because it is the main stay of the argument against my theory, and they, more than any authors, use the term hardy in their description of apples, but very loosely as I have shown above. Dr. Warder uses the term "hardy" still less, and Thomas, Elliot, Kendrich, Cole, all authors of real merit for their times, hardly use the term at all, for they had little occasion for it at their early day of our pomology, and as before said, these writers use the term hardy from the standpoint of the then limited regions of apple culture to the east and south of Lake Michigan.

Downing does not quote one solitary authority from our northwest except in his last appendix. Again I seem to hear a protest from friend Hatch. "Why thus depreciate our buoyant view of this subject?" Sincere friends of our western pomology, I am with you not long, but for life. Let my past fifty years of devotion to this cause in Wisconsin be my answer as to motives, but be assured we gain nothing by holding on to old theories, which, in our practice we do not accept. The truth will not hurt a good cause.

The success of the Oldenburg is not on the line of high quality but hardiness, fine appearance and the abundance of fruit especially adapted to combine with cheap sugar. So with the Hibernal and McMahan and most of the Siberians.

What Freeborn and Hatch, the Tuttles, Phillips and others have done so successfully in the interior, must be the practice of the farmer in similar climate. The ultimate of the hardy Russian varieties in this country is on this line; every new seedling of staying qualities is in the same line.

"Give us more apples" is the cry of a million of people in our state today, and the only hopeful answer is — *hardiness before quality.*

The despised Ben Davis has won its way to the top round of the ladder of success commercially, in the west, not by its high quality, but on the line of bushels, beauty and long keeping. I believe the people of this state are thoroughly satisfied to plant mainly what will give them the bushels

of good selling and cooking apples, and the Wisconsin Horticultural society is practically on the right track in booming our own marvelous seedlings, which have staying qualities of tree and culinary qualities of fruit.

But I doubt if the northwest away from the ameliorating influence of the Great lakes will ever compete with the east in the production of high grade apples for winter eating.

REPORT OF FRANKLIN JOHNSON,

SUPERINTENDENT OF SAUK COUNTY FRUIT AT WORLD'S FAIR.

Sauk county played Little Jack Horner at the World's Fair. We "sat in the corner," we "stuck in our thumb" and "we pulled out a plum."

Some superficial observers, noticing our unique position, hastily inferred a lack of harmony between us and the rest of the state. There is no lack of harmony. We do not work against the rest of the state only as the thumb works against the other fingers. This feature of unlikeness to the other counties of the state—always prominent at our exhibitions, was intensified at Chicago by the arrangements of the exhibits—an arrangement not of design, but the natural outcome of circumstances and conditions over which no one seemed to have control.

At the extreme south end of the southwest curtain was a dainty yet practical exhibit by the Wisconsin Cranberry Growers' Association. Along the east side of the room was the main exhibit from our state. Then came an intervening space occupied by some of the other states, while at the extreme north end of the room was the exhibit of the stiff, sturdy, unflinching horticulturists of Sauk county.

While our characteristic features were strongly brought out at Chicago, yet, in some respects, the exhibit was not the equal of that which we usually have at the state fair. We showed fifty-five varieties of apples and sixty-five varieties of grapes; whereas at the state fair we usually show from seventy-five to eighty varieties of each. There were various reasons for this. It was partly on account of the season, but more from lack of preparation. Up to September 8th—only a few days before going to Chicago—we had made no preparation for going. By that time many of our early varieties of apples were out of season.

Of the sixty five varieties of grapes in our exhibit, all were from the vineyard of Mr. Fox.

The apples were selected, I should say, from as many as twenty-five different orchards, all within six or seven miles of Baraboo.

Although we had a few specimens of other kinds of fruit, apples and

grapes were really the only fruits we exhibited, yet we were accredited with having on exhibition varieties of fruit of which the inhabitants of Sauk county never dreamed. We had two contrivances to catch the eye of the passing crowd and thus to draw their attention to our beautiful exhibit. Each of these devices was quite effective. One was a stuffed badger that stood guard over the grapes, and the other was a design made of apples, cherry crabs and twigs of the Arbor vitae. At either end of the design was a star made of apples, and between the stars in large letters formed by the little crabs were the words "From Baraboo." A lady came along and exclaimed, "Oh, isn't that lovely! This is the prettiest thing I have seen yet! But what is it made of? Are those cranberries?" "No," answered her husband, assuming an air of indifference and of superior wisdom,—"no; they are haws."

But it was interesting to hear passers-by wrestle with the word Baraboo. Some would drawl the first syllable, just simply gasp at the second syllable, and then put emphasis and accent on to the last syllable in a way that was well calculated to strike terror to the bravest heart. Others would pronounce the word with the accent on the second syllable, as though our lovely town were sister to Barabbas. At last two ladies came along and read "From Barbadoes," and then went into ecstasies over the splendid appearance of fruit that had come so far!

That was enough. We then followed the advice or our worthy secretary —Mr. Hoxie—and changed the wording of our design to "From Sauk County."

No sooner was our new design in place than a lady read: "From *Sioux* County." Her companion seemed doubtful and slowly spelled S-A-U-K, then hesitated on the pronunciation, but the first speaker helped her out by saying "It is *spelled wrong.*"

I am often asked "What did Sauk Co. get at the World's Fair?" I always answer, "Glory." Then if I have time I explain that the World's Fair commission did not offer premiums, but awarded diplomas and medals, and that our county society received an award on its show of apples, and Mr. Fox received an award upon his show of grapes.

I take it that answers the question as it is usually asked; but as I look into the earnest, intelligent faces of these horticulturists and hear the question, "What did you get?" I feel that *you* demand a different answer.

A few days ago, upon the return of the noted surgeon, Dr. Senn, from a trip to the West Indies, one of the Chicago papers stated that he was a remarkably fine looking man for one who had been reported dead. That was similar to the opinion the average sight-seer had of the fruit exhibit at the World's Fair. It was a remarkably fine exhibit for a year that had been reported a failure.

We saw more. We caught a glimpse of the patience, perserverance and self-sacrifice of those whose life long efforts made such an exhibit in such a year, a possibility. Very pleasant was the intercourse with the cour-

teous, gentlemanly, and intelligent men from the North, the East, the South and the West, all with a common interest. This interchange of thought, this comparison of methods and results, this stimulus to renewed effort, must all be taken into account when we answer the question; What did we get?

We caught a glimpse, too, of the possibilities of the future. Representative fruit-growers from Maine to California, from Canada to the Gulf, united for the accomplishment of a certain object. They may, aye, they *will* unite for the accomplishment of other objects where they have a common interest. Verily man shall have dominion over every living thing that moveth upon the face of the earth, even the canker worm, the codling moth and the gouger.

ONE YEAR IN A MARKET GARDEN.

L. A. CARPENTER, Fond du Lac.

It is not my purpose in this paper to discuss the different garden crops and their culture, but to simply give some of the general principles which have been more forcibly impressed upon me during this my first year's experience in raising vegetables for the market.

In starting a market garden there are many things which must be considered, and questions will arise every day which had never before entered the mind of the amateur, and which he must solve for himself and to suit his own particular needs and surroundings. No rules can be laid down in regard to culture, soil, and varieties, which will hold good in every case; but from the experience of others we can get the general principles, and form them to suit our special requirements. One man may use one method of culture, and another another, and yet neither of these methods would do for you and me, for our soil is of a different character and must needs have different treatment. But if we study the different methods we will find that the principles which underlie them are essentially the same.

There are three main objects to be gained by cultivation, viz: To control soil moisture, destroy the weeds, and pulverize the soil; and the method which will best accomplish this on your particular soil is the one which should be adopted.

The first year is a year of hard work for which little immediate return can be expected. It will be mainly of a preparatory nature and a considerable amount of patience will be necessary. The one who undertakes such work should have a love for horticulture and be a student of nature, for natural adaptability is the secret of success in all things.

If starting on ordinary farm land it will take some time to get it in shape

for garden purposes, and the greater the extent to which it is subdued and fertilized, the larger will be the crops and the better their quality.

Many start with the wrong idea and expect to make a fortune the first thing, and failing in this first attempt, become discouraged and give it up. It is best to begin in a small way and have a variety, but not a large quantity of any one kind, until you see what sells the best in your market, and what your land will produce to the best advantage. There may be some crops for which your land is especially adapted and which can be grown at a profit even at moderate prices. When these points have been settled and you have your market somewhat developed. You can spread out in the lines which look the most promising. The Lake View district of Chicago is especially adapted to the growth of celery, and on hundreds of acres it is grown to the exclusion of all other crops.

One great mistake made by beginners is to plant too largely on land which is not suitable for the purpose. We lost quite a piece of onions the past season by not knowing the nature of the soil upon which they were planted. The soil (which was a heavy clay loam) dried off well in the spring and was in good condition at seeding time; but heavy rains set in soon after the seed was sown, and as no drains had been provided to carry off the water, the ground was soaked and packed to such an extent that the seed never came up. From this experience we have learned the requirements of our soil and will know how to handle it another season.

The question of varieties is one of great importance and should be carefully studied. We find that, as a rule, the earliest varieties are the most profitable, although the quality may be far inferior to the ones which come later in the season. The only redeeming quality of many of the early varieties of vegetables is their earliness. The earliest varieties of corn and peas are of very poor quality, and yet, coming first as they do, they command a price much higher than the later varieties, which come at a time when the market is glutted. The planting of the same variety at intervals during the season to secure a succession is not usually a good plan, for there are generally later varieties which are better in quality, and if planted at the same time as the early ones will form a succession which will be constantly growing better.

Every gardener should have his own hot beds, for in no other way can you be sure of early plants of the best varieties. For these the dirt should be prepared in the fall and kept from freezing, so that it can be used early in the spring before the soil thaws out. Here is also a field for those who wish to force vegetables for the early market, for the work can be done before spring opens and we can get onto the land. The manure which is drawn out during the winter can be composted to produce heat for the beds and will be in fine condition to put onto the land the following fall.

The old saying is, "Experience is the fool's teacher," but at all events it is a good one. We can learn much from books, and should endeavor to get as much information in that way as possible, but until we have had a measure of experience we can not hope to attain the highest results.

BEST SYSTEM FOR NURSERY TRIMMING.

By B. WADE HEWITT, of Waupun.

The two objects we trim for are first, a healthy tree; second, a tree well formed, smooth bodied and of good address, as it were.

After experimenting for several years, and watching very closely the effects, I have decided upon using the following system in nursery trimming and I submit the same for your consideration. Of course, care and cultivation go with the trimming, for by the neglect of cultivation at the proper time all other effort would be counter balanced.

In the trimming system I have adopted, thorough cultivation must be given whenever needed, in order to give the strength of root as well as the top growth necessary for the perfect tree. No rules can be given to govern cultivation unless it be the rule of, "Always exercise your own best judgment," as so much depends on atmospheric conditions, composition of soil, drainage, etc., that no two years would call for the same line of cultivation.

We will now commence with our trimming at the beginning; the first year from grafts. I do not touch with a knife this year, for all leaves that can be grown now are needed to give support and to help establish the graft by supplying from the air for its circulation (as man's lungs do for him) properties of most vital need.

The second year the graft is well established, and will commence storing vitality by growing a surplus of wood or limbs by which to defend itself against the elements of nature with which it may be brought into contact. If man does not order the system of growth by pruning, ultimately the strongest and most healthy growths will overpower the weaker and in time will smother and kill what is most needed when tree maturity is reached. If man orders the system of growth, our study is to retain what is necessary for best results in making a handsome and, at the same time, a healthy tree.

Early in June of the second year's growth, after the block has been thoroughly cultivated and the soil thrown from the bodies of the young trees, at the cultivation done the preceding fall, we select the growth that gives promise of making a straight tree, and cut all else away. In pruning care is always taken to make it smooth and never leave a stub on the upper side or end of cut. I believe in cutting even with the outer edge of the collar of the limb.

If there is no desirable growth on the graft to be left, trim to a single shoot and head this back to within two or three buds of the original graft, so that a new growth will shoot up straight. As soon as the spring's growth is well started, and before the young shoots have hardened into wood, I go through and pull off all shoots, except a leader, that show a tendency to make any considerable limb, leaving such as will only make

light growth to aid in leaf power needed. If our grafts have been tipped back by the winter, I go through the blocks as early as the buds are broken and well started, and cut back to a strong, healthy bud that will give a straight growth and make the best body, as the second season's growth determined the straightness of body of the future tree. I do not touch the knife to the trees again until next spring, doing the balance of trimming necessary by the pulling or rubbing system while the growth is yet tender. The third year but little knife work is necessary if the pulling system has been properly attended to the previous year, and still a little shaping is necessary. There is now and then a limb that must be cut off, and we go through the block as early in the spring as we can, after hard freezing is past, and trim up to a straight whip, leaving the straight growths, as they will pull out and rub off when the young wood is removed. This year I have the bodies rubbed and continue stripping or rubbing until no more young shoots will start on them. We also go through the block when the growth of limb is young and pull out such limbs as are not needed, from a balanced top and select a leader.

No time in the life of the tree is its cultivation so essential and absolutely necessary for its success as in this, its third year's growth.

If the block is well cared for a heavy per cent. of the trees are available in the fall and should be dug for fall orders or stored for spring use. Such as are too light for use are left in the nursery row and grown another year.

Early in the spring of the fourth year (which is with us the last of March or first of April), as soon as all danger of hard freezing is past, trim everything up to a whip and head back to a uniform height of five feet. By early trimming you get a very much stronger growth in new wood than you would if you trimmed later. If you will only trim on bright days, never cutting a limb on a lowery, misty or foggy day, you will never have a tree bleed or blacken by early trimming. My experience has been that June trimming is the worst.

DISCUSSION.

H. W. Ash—I was very much pleased with that trimming, but do you not think it would be advisable to clear everything off your grounds in three years?

B. W. Hewitt—It might be all right in Iowa, but in this state we can't use all the varieties when they are three years old; there are very few that will make good trees at three years of age. Most of them must grow until they are four years old. At three years you will get few trees that are between six and seven feet.

Geo. J. Kellogg—The best thing I have done in the horticultural line, this year, is to organize and get in line Mr. Hewitt. I organized a good

horticultural society at Waupun and Mr. Hewitt has come here from that society and given us this valuable paper.

Prof. J. E. Coleman—I move that the executive committee be a committee to arrange for the distribution of plants. Carried.

FERNS AND WILD FLOWERS.

WM. TOOLE, Baraboo, Wis.

When the lengthening days of February bring with them brighter sunshine, and sometimes melting weather, our thoughts look forward to the hoped for spring time, when the white and brown of the hillsides shall be changed to vivid green, and we long for the early spring flowers with woodland walks where the woodsy smell and sound of falling water, with soft murmur of breezes through the forest shall quicken our pulses, till life again seems brighter and full of the hopeful promise which a healthful appreciation of nature's beauty always inspires.

But February days are not all bright and balmy, and if winter seems to have forgotten her task, it is only the relaxation of girding up for more manifestations of her supremacy, so, storm-bound, we look from our windows o'er whitened fields to distant hillsides and winding valleys, and think of the days when we gathered ferns to press for winter albums and collected the nucleus of our home fernery.

Dried ferns are beautiful for room decoration where living plants can not be used. An album of these with well preserved specimens of our wild flowering plants, is an unfailing source of winter entertainment. Of the larger ferns like the *Osmundas* and Ostrich fern only smaller fronds are useful for the purpose, and whatever the kind it is best to use only such as are fully developed, and have attained their fullest green color, because those which are not matured will become brown or blackened in drying. For room decoration the Maiden Hair and Lady ferns are good, to which may be added those before mentioned, with also still better the *Aspidiums, Acrostichoides, Spinulosum* and *Marginale*. For our fern album we need as complete a collection as can be made, and with our nearly thirty species we can have an interesting variety.

But the growing ferns are more interesting, and few there are who can not have them in the house or garden.

Our native ferns are best suited for summer growth, and we will first speak of them and their care. They are easily grown if furnished with their needs, which are good drainage for most of them, partial shade, woods earth to grow in, a fair amount of moisture in summer and freedom from weeds. All cellar walls of houses should be so built that banking up

for winter protection is not neccessary. If walls are thus safe, a bed for ferns and early spring flowers may be had on the north side of the house, but it is still better if we can chose a corner between the main building and an L. If it is not convenient to grow them near the house, then the shady side of a fence will do; but a prettier effect may be had, and nearly as good a location, by building up a rockery with rough stones and plenty of earth, having the steep side to the north, and shading with some of our native shrubs and climbers.

For the larger ferns, like the Ostrich and Royal Fern, a deep, rich soil in the lowest part of our fernery must be given. Near by there may be the Cinnamon and Clayton ferns, and also *Onoclea sensibilis.* A little higher up we may plant the Lady fern and Maiden Hair, two of the handsomest and most easily grown, and with them put our common brake — *Pteris aquilinia.* Among the rocks, with a little attention to drainage; we may plant *Cystopteris bulbifera* and the *Phegopteris*, or Beech fern; while close up where rocks are shelving should be *Cystopteris fragilis.* Still higher up and in clefts of rocks we may grow the Shield ferns — *Aspidium acrostichoides*, *A spinulosum* and *Aspidium marginale* — also the pretty little *Asplenium Trichomanes* and the Cliff Brake — *Pellea abopurpmea.* Nestled on top with plenty of shade we should have *Polypodium vulgare* and the Walking Fern — *Camptosorus rhizophyllus.* With the ferns we have just the right conditions for such plants as *Lycopodium lucidulum*, that prettiest of club mosses, also Rattlesnake Plantain, Partridge Berry and the fragrant *Pyrola.* Rocks not being available, our steep wall may be built up of earth and sticks, which will soon become moss-grown and rustic in appearance. Make the fern garden long and broad enough to give room for our earliest wild flowers, such as the Hepaticas, Dicentras, Claytonias, the different Violets, Wood Phlox, Bellwort, Jacob's Ladder and wood lilies, with a host of others which may be added as love for the work grows.

For our shading we have to chose from among native shrubs the Viburnums in variety, Witch Hazel, the Cornels, decidious Holly or Strawberry Tree, Bladdernut and Mountain Maple, while of climbers we may use with suitable support, Climbing Bittersweet, Virginia Creeper, Clematis, Honey Suckle and Moonseed Vine.

If a mound has been raised in building the rockery, its south slope may be given to sun-loving plants, of which we may choose a good variety, but we wish to say more about ferns and will give but passing notice to the flowering plants.

Our native ferns are of little use for house culture in winter, but we may have them in a shady window or in boxes on the porch in summer, where they will thrive as well as if grown out of doors.

We can succeed in growing some of our native ferns like the Lady and Maiden Hair Ferns in winter by taking up and planting in a box of woods-

earth with good drainage. The box should be put in a shady place where the plants can be frozen and yet taken into the house in December.

At first they may be kept in the cellar for a while until the plants show signs of growth, when they should be placed near the window where sunshine will not strike directly on them.

Treated in the same way, we may have winter wild flowers, from the early blooming kinds like the Blood Root, Hepaticas, Spring Beauty, Anemones, Dicentra, Jacob's Ladder, and all such plants as come into bloom early in the spring, but the flowering plants will need more sunshine than the ferns.

The Ostrich Fern, *Struthiopteris Germanica*, is to be found in rich alluvial soils near the wooded banks of brooks, and sometimes springs. Clayton's Fern, *Osmunda Claytona*, commonly grows on springy slopes of shady hillsides and scatters from there along steep road sides and near marshy grounds.

The Cinnamon Fern, *Osmunda cinnamonea*, seeks places still more moist and may be found in the edge of brushy swamps or boggy springs, but spreads out to dryer places. The royal Fern, *Osmunda regalis*, is truly grand when found at its best in rich, peaty, shady swamps, but young plants may often be found in nearly dry places and if given room it does well in cultivation. The Lady Fern, *Asplenium Filix-focmina* and Maiden Hair, *Adiantum pedatum* are common in half shady woods. In like places if the soil is deep and rich, may be found the Moonwort Fern *Botrychium ternatum*. We had almost forgotten to mention of the ferns in marshy ground, the Sensitive Fern, *Onoclea Sensiblis* and *Asplenium thelypteroids*.

Of the Shield Ferns we find *Aspidium Noveboracense* in marshes, *Aspidium acrostichordes* in shady rocky woods, *Aspidium spinulosum* and *Amarginal* grow their best on shady, very rocky hill sides. The last three are nearly evergreen. *Asplenium Trichomanes* we find in clefts of shaded rocks. *Cystopteris fragilis* is found in crevices of dripping rocks and would not probobly succeed well in cultivation.

Woodsia Ilvensis grows in the most exposed places among rocks, and unlike other ferns seems to seek the winds and sunshine. Lower down we find where shade and soil are more plentiful the graceful *Woodsia obtusa*. The Beech ferns, *Phegopteris hexagonoptera* and *Phegopteris dryopteris* may be found in shaded underbrush not far from rocky places. The little Cliff Brake, *Pellaea atropurpurea* seems to choose only clefts in limestone rocks. We may may expect to find the walking fern, *Camptosorus rhizophyllus*, on the tops of broad shelving rocks where the shade is dense, while we find *Polypodium vulgare* in like and also more exposed places. The common Brake, *Pteris aquilina*, is common in open woods and probably more widely distributed than any other.

Our three evergreen Shield ferns, the *Aspidiums* before mentioned, are much used by florists in winter for green in designs, baskets and the like.

The fronds are collected in the fall in their native places and kept in cold storage until purchased from the collectors by the florists who keep them in the same way and use them as needed.

These ferns are more plentiful in the mountains of the east than with us, and some collectors claim to handle millions of fronds each year. For winter ferns in the house it is best to grow the different exotic species such as are started in green-houses specially devoted to their propagation. To succeed in starting from their seed or spores requires an amount of experience for which ordinary persons can not spare time to acquire. The reproductive spores are so fine as to float about in the air and become attached to moist surfaces, where if proper conditions for their germination continue, they in time develop into young plants.

A few weeks ago while visiting some green houses in Minneapolis, our attention was called to young Adiantums clinging to the sides of flower pots containing other plants, their only support being the green mould like moss which had first collected there.

Mr. Nagel said that he formerly cared for some old greenhouses which had been used for fern growing many years and there at any time hundreds of young plants could be taken from under the benches or where attached to the sides of the walls, and from among the palms growing in the same house, so that they never needed to sow for a number of species.

These houses were taken down to make room for newer structures, and it will be some years before the conditions will be again favorable for a plentiful supply of self-sown plants.

The demand for the smaller kinds of ferns to be grown in fern dishes and boxes is so great that our friend says it is difficult to keep a supply sufficient for his customers. In addition to what they raise themselves they buy young plants in quantity from those who make a specialty of them, like Dreer of Philadelphia and Whitbold of Chicago. We were shown a zinc pan, oval in form, about twelve inches one way and eight the other, which was filled with *Adiantum cuneatum*. This had sold for $1.25 some three weeks before, but through careless management the plants were not looking well, so it was sent to be refilled, and this expense would probably be repeated several times through the winter.

These little collections of ferns are fine for dinner table decorations and the effect may be heightened with the variety of a few fresh flowers placed among them. We all know how useful ferns are to the florist for made up work of various kinds. The varieties most used for the purpose are *Adiantum cuneatum*, *Adiantum gracilium*, *Adiantum Capillus Veneris*, *Onycium*, *Joponicum*, *Petersis senulata* and to some extent *Adiantum Farleyense*, except the last they are all suitable for fern boxes and with them may be used *Pteris Cretica Alba*, *Peeris Cretica*, *Pteris argyrea*, *Pteris Victoria*, *Pteris palmata*, *Davilla tennifolea*, *Nepherlepis pectinata*.

Other ferns are fine as single specimens and many of these while small may be kept growing in the pots among the other ferns until too large for

the place and afterward grown as specimen plants. A friend in the city who loves flowers, but must forgo the pleasure of most plants because of injury from burning gas, finds that Palms and Ferns thrive better than any other plants.

To succeed with Ferns it is best to commence in the spring with young plants and grow them on through the summer so as to commence the winter with good plants, or else buy good strong plants in the fall from the florists. They are easily grown on a shady porch where they are not liable to be whipped by the wind nor suffer much with dust. If necessary to sprinkle the foliage the water should be shaken from them else they will become spotted and brown if kept wet too long. Woodsearth with a little sand in well drained pots is best for the small plants; as the plants become larger add some well rotted manure when repotting. Thrifty plants will bear to be well fed. When summer draws to a close see that they do not suffer too sudden changes of temperature. The most trying time in the life of all house plants is when becoming adapted to the change of conditions from summer to that of winter, and we, too often suffer because thorough want of forethought we are not prepared for danger of being chilled in our homes. The plants should not receive bright sunshine, but ought to have plenty of air when it can be given without direct drafts or sudden changes. Dry air is harmful, and it is well to shade the pots to prevent root injury. Dishes containing wet moss standing among plants are a help, and still more efficient are bowls or pitchers of hot water to give off steam among the plants. Thrifty plants are not likely to receive too much water if reasonable judgment is used, but much care is necessary with small plants that they do not become either too dry or sodden. If the soil of any plant once assumes a sodden condition of being always wet it should be given a change of soil at once, with better care afterwards.

For large hanging baskets there is nothing finer than either the Sword Fern *Nephrolepis Exaltata* or *Nephrolepis davilevides fureans.* For baskets to grow them in we like to take good straight pieces of white cedar and split into pieces half inch square. The baskets are made of these log cabin fashion. They are lined with moss before filling, and as the plants grow, young ones will come out through the spaces of the basket. A beautiful summer ornament may be had by fillling one of these baskets in the spring with a variety of our native ferns planting some between the spaces. Suspended from the branches of a shady tree they are beautiful.

While at the World's Fair we took some notes of such varieties as seemed adapted for house culture and which we hope to give a trial.

First to attract attention were the tree ferns, and if once started they are not difficult to grow and will not be too large for several years. The largest species is *Dicksonia Atnartica* and as they do not show their tree like character until too large for house use, they are not so desirable as some others. *Dicksonia regalis* has longer fronds and is more graceful than *Antartica*, but not first choice for house use. *Alosphila Australis*, the

Australian tree fern, seemed best of any. The trunk is slender, showing its tree-like character when quite young, and we learned that it is easily grown. *Lomarium ciliata* is a small tree fern, very pretty and not hard to grow. *Cibotium princeps* has very long fronds and is showy, but we have not become acquainted with it. Other tree ferns are *Cibotium glancum*, *Cibotium regale*, *Cibotium Schideri*.

Adiantum Farleyense is perhaps, when well grown, the most beautiful of all the ferns and it often succeeds well grown in the house. No other *Adiantums* already mentioned are more easily grown.

Davilia Fijensis Majus, *Davilia Striclata* and *Davilia Fijensis Plumosa* have finely divided arching fronds, are easily grown and good for hanging baskets or specimen plants. *Davilia Moreana* is still stronger growing and makes a fine decorative plant. *Microlepia cristata* is easily grown and good. *Microlepia dispida* will do to increase a collection. *Adiantum Formosum* is good for large specimens, and *Adiantum decorum* is worth growing for its hardy appearance and thrifty gracefulness. *Pteris owrardi* makes a beautiful spreading plant, and *Pteris umbrosa*, more slender, is a fitting companion. *Pteris trimula* is so easily grown it should be in all collections. The New Zealand Shield Fern *Aspidium Mohrowides* is in our own collection and we like it very much. Its plumy fronds attain a fair size when well grown and the young plants are a choice addition to the fern dish. Its curious manner of reproduction is always interesting. The upper surface of the older fronds become covered with little tufts like young plants. If these fronds are cut off and pegged to the surface of damp soil roots are thrown out on the under side and as the stem decays these little tufts take root and become young plants.

Microlepia hirta cristata is a thrifty fern with finely divided arching fronds which are curiously forked at the ends. It should not be passed by.

Insects cause some trouble and worst of these are the scale louse such as infest ivies, palms and many smooth leaved plants. They can be got rid of by washing with diluted tobacco soap. Mealy bug is another pest often found on *Cactus Coleus*, *Bonvardias* and other plants. If they once get possession of a lot of plants they spare nothing, but they can be got rid of in the same way as the scale.

We will close this paper by advising the inexperienced to begin home culture of ferns in a small way, and love for them will grow with knowledge and experience. In a few seasons you will know more than can be told to you in one short paper, and the knowledge gained will more than repay the labor bestowed.

Q.— What kind of moss do you use for hanging baskets?

A.— Spagnum moss.

Q.— What do you do to rid your ferns of the scale or bark louse.

A.—I use sulpho-tobacco soap, the rose brand. I use two ounces to one gallon of water. It will destroy the red spider. Where scale, mealy bug or red spider are bad it is best to apply the solution with a brush directly to the parts affected.

THURSDAY AFTERNOON.

Delegates and members of the Wisconsin State Horticultural society, by invitation previously extended by President C. K. Adams, were the guests of the Agricultural and Horticultural departments of the University. Carriages were in waiting at the Capitol at half past one, and were soon filed with eager and interested sight seers.

The "Short Course in Agriculture" has been heartily commended and perhaps as heartily condemned. Some are enthusiastic as to the benefit it confers; others claim that nothing of really practical value can be acquired in three months' time. The condensed and abridged course given to the old people that afternoon led some, at least, to make a better estimate of what could be acquired in three months' steady application, because so much could be learned in three hours, and because they saw how much there was left to learn. Not one but went away better fitted for his life work for that visit to the university.

The party were first driven to the horticultural building, a building not yet completed, as the blind wall on one side shows. The money being expended, the work stopped. We trust the people, that is the voting population, will see to it that the next legislature makes a sufficient appropriation to have it fully completed and fully equipped. Under the guidance of Superintendent Adams of the university farm, the party was first conducted to the assembly room on the upper floor, where they were welcomed in few words by Prof. Goff who drew their attention to the building, its thoroughness of construction as to warmth, as to protection against fire and as to convenience in the work to be done. In only one thing did they claim originality in design, and that was the garden house, where under glass, during the coldest season, the student could successfully carry on all the operations necessary to a good garden. He cautioned them to remember that the green house was a green house for instruction and not for the raising of plants for exhibition or for sale. As they passed about the building they would see students at work in various ways, carrying out the instructions received in the lecture room; he hoped the gentlemen would not put the students through a new course of tactics, even if they felt sure they were wrong. He also cautioned the company to keep together, not to break up into little groups and stop to converse, for by so doing they might some of them fail to see all that it was desired to show them.

After all this painstaking, Superintendent Adams found it about as hard a party to escort as any he had ever known; he could not be at once in front and rear of the line and the company showed clearly not only its lack of

drill but the fact that each high private was an independent thinker and leader in his own way.

Passing through the assembly room, the party went through the various rooms, finding the students at work. Some were making berry boxes; some carefully weighing the ingredients and preparing to compound the Bordeaux mixture for spraying; some weaving lath together for protection to trees, etc. In the green house, they saw the cold frame and the hot bed, seedlings just coming up and seedlings being transplanted into thumb pots. Some were putting out grape and other cuttings and several varieties of evergreen were being grown from cuttings. In every line the student actually performs the work, and notes the processes and results.

The garden house was perhaps the most attractive spot of all. There under glass, in a summer temperature the students were cultivating the soil, a variety of patent cultivators being in use. At one end of the room was a hot bed made by the students, and one young man was setting out in his garden plat, in straight long rows, tiny young plants of lettuce, radish and other garden vegetables. Every visitor wanted to take off his coat and go to work there, he wanted to try the machine he did not have at home, he wanted to try some of his pet plants and theories there. The ladies were all of one mind, viz: that if they could be young again, they would come and take a course in horticulture. Why not? Tending a green house or making garden is no harder work than washing, and washing is considered legitimate work for women whereby to earn a living. And as dealing with soil is more agreeable than dealing with dirt, the greenhouse and garden must be considered as offering the more congenial occupation.

From the horticultural building to the dairy building was only a short walk. All were seated for a few moments in the lecture room while Superintendent Adams explained briefly the method of instruction. The students are taught by lectures and then go out into the different rooms to put into practice the knowledge they have gained. One section tests the milk, learns the use of Babcock test, and how to discover any adulteration of milk. Another section makes the butter and reports on every step in the process, and still another section makes cheese. These sections follow a certain system of rotation so that every pupil is compelled to do each and every part of the work.

Passing from the lecture room, the guests saw the students actually at work testing milk. In this school the pupil has the benefit of the latest thought, the best experience, and the best machinery. Different patent separators are in use and the student can decide for himself which gives the best satisfaction. The butter was already churned, but the working was not yet complete. Some one remarked as he saw the golden mass revolve that if there were a cooking school for girls where scientific bread could be obtained, he should much enjoy testing the butter.

In the cheese room the curd was waiting, wrapped up in each vat, to reach the proper condition in which it should be cut up. One thing deserved special notice, the care which is taken to have every pupil do his part well. About three students are assigned to each vat of milk, and they are responsible for the treatment and product of that milk. Every utensil necessary for their work is there for them to use and for them only; a sink is near with plenty of water, and thus cleanliness as well as skill enters into the scale by which they are judged. Blank reports are furnished which each pupil must fill out, and these furnish an accurate guide to the instructor as to the diligence, faithfulness and progress of the pupil. In the cheese room, long rows of cheeses were seen, the work of the students

Returning to the carriages the visitors were conveyed to the Agricultural building, which is the old south dormitory, remodeled. Here, Prof. Henry gave them a cordial greeting and wanted them to be seated in the Assembly room and rest awhile. He spoke very briefly of the growth and the needs of the University, of the progress he had witnessed in the thirteen years he has been engaged there. At present in all departments, the university numbers thirteen hundred students. In the agricultural college there are 173. Another year he could not be satisfied with less than two hundred. The university cost about $400,000, a year, or more than $1,000 for each day in the year, but the tax payers of the state do not furnish this money, only the smaller portion of it; the greater part is provided from the income of lands given by the United States government, and other sources. The yearly expense of the Agricultural college is $50,000, of which less than half comes from the state. He spoke of the two courses of study, of the advantages to the state in having the boys trained here. and the necessity of utilizing to the fullest extent, the advantages the state offers the people. The more students the less in proportion it costs to educate them. Among those now in attendance were men who had graduated in the literary departments of eastern colleges, and had come to Wisconsin to study agriculture. We need to go away from home to learn and appreciate the unusual facilities Wisconsin university offers. He welcomed this opportunity to make known to so many what the work of the Agricultural college was.

The curtains were drawn down and the visitors were treated to a stereopticon exhibition of famous animals, aristocratic horses, cattle and sheep, and the pictures of men distinguished for success in the agricultural world. Many of the faces were known by only a few if recognized at all, but when the features of the honored and lamented ex-governor Rusk appeared upon the canvass there was simultaneous applause. After these notables came the noted invisibles. Prof. Russell showed upon the canvass some new plates he had received showing the germs of various diseases, as the tetanus germ, the consumption germ. If this multitude of invisible creatures dwell about us and we are only now learning to discern them and name them by the aid of lenses which increase our power of

physical sight, why should it be so hard for us to believe that other beings dwell about us, whom we may discern and name when we have properly improved our spiritual sight?

A brief visit was made to Prof. Russell's room, where he lectures to the students on bacteriology, and he kindly explained the process of raising a crop of germs of any special kind required, and also told something of the germ which put in the cream makes the purest and sweetest butter, the process of sterilizing the milk, etc.

Next the farm institute room was visited, where everything spoke eloquently of the lamented Morrison, the memory of whose work as conductor of farm institutes in this state, will never die.

A little walk brought the visitors to the machine shops, where skill in the use and the fashioning of tools is developed. In the wood-working rooms the student learns to make his own patterns, and then in the shops below he learns how to reproduce them in metal. Among the curiosities were the first dynamo used by Edison in the electric lightning of Menlo Park about fifteen years ago; a dynamo made by the students, and a trip hammer in use which was the work of two students.

The visit to science hall, the beauty of the edifice and the wonders it contains, must wait until another day. With many and heartfelt thanks to Superintendent Adams, the visitors entered the carriages and were quickly and safely conveyed to the capitol.

THURSDAY EVENING,
Senate Chamber.

DOES IT PAY?

J. WAKEFIELD, Fremont.

Does it pay? That is an important question, one which has been oftener asked than any other question since mankind were driven from their pleasant garden home into the "wide, wide world," and commanded to shift for themselves. All classes, in all conditions, find it necessary to fully solve the question before engaging in any speculation or occupation in life. It is the way of the prudent man, it is the way of the successful one. Lack of caution, lack of calculation generally lead to failure, if not actual disaster.

It does not pay to depend too much upon chance. It is folly to risk too much before counting the cost. Fools "go it blind," but wise men look well to their steps.

It often pays to seek advice. If we don't know how, we should ask some one who does. It is more sensible to acknowledge our ignorance at the start, than have it proved later. Men know only what they learn by observation, or by being told, mostly by the latter. To acknowledge our ignorance or error is the first step in wisdom — and the last. The wisdom of

brutes is born with them, but men and women get the best part of their knowledge toward the other end of the route. God never makes a wise man. He merely gives the faculty of becoming so.

Its pays to make a reasonable provision for sickness and old age, but it does not pay to be miserly — to sacrifice every human impulse at the shrine of avarice. We came into the world empty handed, we shall leave it with empty pockets, carrying nothing with us — unless it is our devlish dispositions.

It pays to make home pleasant, if there is any value in a smiling wife, and a smiling conscience. It does not pay for a lazy lout of a husband, on a hot summer day, to be sunning himself on the shady side of a friendly tree, while his perspiring wife is hard at work gathering a few scattering chips to help cook "the master's" dinner. At least, our wife says it don't, and she ought to know — with her experience.

In trying to make home pleasant and attractive, in addition to the shrubs and shade trees, which should never be omitted, we must not neglect the garden, where the land is free enough from weeds to have one. And no garden can be complete without a plenty of berries and a few apple trees.

It pays to raise fruit — as good and as much as possible. It adds to one's comfort and conduces to health, domestic happiness and morality. We have noticed that families who always have a plenty of good fruit generally raise attractive, rosy-cheeked daughters and healthy, temperate sons— sons who seldom acquire that disgusting, disagreeable tobacco habit, or are found hankering after "forty-rod whisky" or beer slops. We firmly believe that not one youth in fifty grows to be a drunkard without having first acquired an unnatural liking for that filthy, poisonous weed. Think of that, ye temperance advocates; think of it, ye professed Christians!

In starting an orchard, it pays best to start right. It requires a little experience and some common sense to be successful. Much depends on the condition and varieties of the trees and location of the site. It generally pays best to purchase of our local nursery men. We have a plenty who are responsible, and the most of them are supposed to be honest and would not recommend an inferior article as long as they have better on hand. Then patronize home industries. Always steer clear of the windy, dishonest, itinerant tree peddler. Kill him if you can't get rid of him any other way. He will be more useful dead than living.

We had our experience with the gentry. Away back in the fifties, we were incautious enough to give one of these chaps an order for some "eastern trees," and when they arrived they were so dry and scragged that it was hard work to tell which end should go into the ground. We refused them, but when the agent generously offered a big discount, we took them, and set them out because they were cheap, and we have felt cheap about that transaction ever since. Part of them made out to show a few leaves, then got discouraged, and a small portion, after years of desperate effort, managed to raise a few scattering apples, just enough to show how varieties will change after being set out.

Then the location—some people prefer to set their trees in a slough near the house, where their neighbors pilfering boys will never dare to go, than locate an orchard further back, on a proper site. Suppose the boys should get a little fruit, better give them half than not be able to raise a quarter of a crop, after all your watching, besides, it may pay to be liberal to the boys, for while they are eating your apples, they will not be eating tobacco, drinking whiskey, or acquiring other bad habits.

The varieties — well, suit yourselves, only get those best adapted to our climate, and good enough to make you willing to take a second bite.

Our state and local societies have done, and are doing a noble work. Great things have been accomplished even within the last decade. We may well glory in their past, rejoice in their present, and feel very confident of their future. Yet, that ideal apple, the lazy man's apple, is still hidden in the dim uncertain future — and always will be — for there certainly is a limit to all human progress. But that is no reason why we should always feed on crabs!

B. S. Hoxie moved that the herbarium be presented to the state university and one half dozen covers used at the World's Fair be presented to the horticultural department. Motion prevailed.

Adjourned.

UNIVERSITY OF WISCONSIN,
Department of Botany.
FEBRUARY 22, 1894.

Mr. B. S. HOXIE, Secretary State Horticultural Society,
Evansville, Wisconsin.

DEAR SIR:—I beg leave to acknowledge the receipt of the herbarium of Wisconsin plants which the State Horticultural Society presented to the University of Wisconsin, and to express to the society through you not only the thanks of the botanical department, but also the grateful acknowledgment of this gift on behalf of the president of the university.

The plants will, as far as possible, be incorporated with the present collection of Wisconsin plants, and will bear a distinctive label indicating their source.

Respectfully yours,
C. R. BARNES.

CONDITIONS AFFECTING FRUITFULNESS.

By E. S. GOFF, Professor of Horticulture University of Wisconsin.

No fact is better known to the fruit-grower than that his fruit crops are precarious. Full crops are comparatively rare, the brightest prospects of spring are too often blasted before the harvest, and total failure of both flowers and fruit are not uncommon.

There may be a slight consolation in the reflection that this uncertainty of harvest is not peculiar to the so called fruit trees. I think it is common to all our trees. A burr oak, beneath whose widely-spreading branches I spent many a happy hour in my childhood, used sometimes to shed a shower of sweet-meated brown nuts in autumn, but more commonly we had to hunt among the fallen leaves for the meagre crop. The butternut trees that grew upon my father's farm, on the banks of the Chemung river in southern New York, occasionally bore so bountifully that we boys have gathered as much as fifty bushels of the nuts in a single autumn, sometimes gave no harvest. Generally there were a few nuts on at least a part of the trees.

Sometimes the failure is not difficult to explain. A frost during the period of full bloom destroys the delicate reproductive organs; a fungus epidemic, like a conflagration, sweeps over the plantation blighting and blasting everything in its course; untimely drought starves the half-formed fruits, or a severe attack of some destructive insect lays waste the prospective harvest.

But these manifold causes do not explain all the failures in our our fruit crops. How often are our plum trees laden with blossoms in May without the setting of a single fruit. I know that flippant explanations for these cases are very often given. "A cold northwest wind destroyed the pollen," "a heavy rain washed off the pollen," "the pollen matured too early or too late for the stigma." Only a few days since I saw a statement in one of our papers made by a very intelligent plum grower that some seasons the blossoms of the native plums are without pistils. I surely would not dare to say that none of these reasons are ever correct. And yet I do seriously doubt that they are always based on sound philosophy. Certainly they are not always founded on thorough investigation.

But we must look still deeper for the explanation of very many of the failures in our fruit crops. Granting that some of us are able to explain every case where blossoms fail to form fruits, or where fruits already formed drop during the first fortnight of their existence, who will tell us why, one season, our orchards, during the last half of May, are a mass of snowy bloom, while others they are spotted like a checkerboard, or others still, but here and there a lonely blossom may be found among the leaves; why one tree is laden with flowers and its neighbor, often of the same

variety, fails to show a petal; why a few branches upon a tree are often well laden with bloom while the rest of the tree is flowerless? These last questions lead us a step deeper into the mysteries of vegetable physiology, than the investigation as to the presence or absence of pollen on blossoms already in existence. A few weeks ago, I put these very questions to one of the most learned botanists of this country, and the only satisfaction I was able to get was the modest affirmation, "We do not know." He was rather inclined to reprove as presumptuous certain hypotheses of a possible explanation that had already developed in my own mind, and I left him with a still deeper conviction of how little I have as yet really learned about horticulture.

And yet no subject is of more vital importance to the fruit grower than these very questions. If we but know how to treat our trees, to make them yield a fair crop of blossoms every year, we should be far better off than we are, for granting that even with our bloom, the fruit is uncertain we will all agree that it is far better to have flowers than to have nothing but leaves.

But with all deference to my botanist friend, I believe that we should know, and may know more about this subject than we do. It is not a satisfactory explanation for the barrenness of our orchard trees to state that the wild plums and crabs and haws and the nut trees of our forests are as uncertain as our fruit trees. Our orchard trees are in a state of culture, and if we cannot so treat them that they shall be more productive than their undomesticated forest relatives, it is very strong evidence that we have not learned to properly cultivate them. The skilful florist brings his Bermuda lillies into bloom within a day or two of Easter, because he knows how to do it. He takes the pot plants from which the unskilled housekeeper fails to secure blossoms, and in a few weeks fills them with bloom because he knows the secret. Must we forever plead total ignorance of the laws that control the blooming of our fruit trees? I say no, so long as we have the ability to think and the power to investigate.

A collation of all the known facts that bear upon the production of flowers in plants should at least throw some helpful rays of light upon the causes that regulate the blooming of our orchards. We know that ringing a single branch of a barren apple tree early in the growing season very often causes that particular branch to bear fruit the next year. Binding the twig to an unnatural position, and tying it so as to keep it in that position, often has the same effect. Botanists tell us that this fruitfulness is due to the fact that the currents of assimilated food that pass downward from the leaves into the stem and root are intercepted by cutting through the cambium layer, so that the food material accumulates in the branch, causing the formation of flowering buds, a most suggestive fact if it be a fact. If the poor tree could assimilate food enough would it not bear fruit all over? If choking a single branch and damming up the growth currents enables that branch to bear fruit, how shall we go to work to fill the whole

tree with food? One thing we know, the food is assimilated in the leaves. Let us guard the leaves then as the sacred fountain of life. If we allow insects or fungi to ravish them, we are guilty of almost criminal negligence, if it is within our power to prevent it.

We also know that pinching the tips of growing shoots in early summer often has the effect to cause these shoots to bear fruit the following season. Root pruning has the same effect. If we can learn to interpret these facts, possibly we may be able to apply the knowledge. Possibly the facts that many greenhouse plants refuse to flower until they have filled their pots with root, and that withholding water from greenhouse plants often causes them to bloom, may result from the operation of the same principle. It is worthy of our consideration that all these operations check growth without reducing the leaf surface. It would seem that the natural result of this would be to stock the plant with assimilated food. It is a well known fact that plants in a condition of active growth seldom flower freely and also, that the flower buds of almost all plants are formed rather late in the season, when the soil is depleted of its moisture, and after the exuberance of spring growth has passed.

It seems to me that the intelligent fruit grower may take another hint right here. By so treating our trees that they shall make their wood growth early in the season, to be followed by a wholesome check in growth toward midsummer, we should approach the practice of the florist who shifts his plants from smaller to larger pots so long as he desires them to make growth, and then permit them to become pot-bound when he wishes them to blossom. But how shall we do this? you are perhaps ready to ask. I would suggest the use of manures well supplied with potash and phosphoric acid, and especially with some available form of nitrogen, early in the spring. Unleached wood ashes and nitrate of soda would be well adapted for this purpose, or perfectly decomposed farm yard or stable manure that had decayed under cover, would, perhaps, answer equally well. I am in favor of giving abundant plant food, but I would have it of a sort that is immediately available, and then would apply early in the spring, and at no other time. This will cause a rapid growth until about midsummer, when the dry weather that we expect at that season, with the giving out of the nitrogen stimulus will cause a check to the growth while the leaves, if well kept in health by the proper care, will continue to assimilate food until destroyed by frost. This store of food will not only tend to develop a good crop of fruit buds for the next year, but will also mature the crop of fruit already on the trees.

I offer this not as a demonstrated fact, but as a working hypothesis—a good plan for experiments that is backed up by the best knowledge I have been able to gain on the subject.

DISCUSSION.

M. A. Thayer.—What is your opinion about cutting the roots of raspberries and blackberries?

J. C. Plumb—I have tried pruning the roots and it is always a sacrifice of next season's fruit.

Prof. E. S. Goff.—These plants fruit so freely that it is not necessary to do anything of the kind for the purpose of increasing their fruitfulness. If I had a blackberry that did not fruit I would prune it. Pruning the roots of trees has the tendency to shorten longevity.

A. G. Tuttle.—To stimulate a tree has the effect to produce wood growth. If fruiting is desirable, it is necessary to check that wood growth. The pruning in June when the trees were in full leaf checked the wood growth: pruning early, before the sap started, had a tendency to increase the wood growth.

F. H. Chappel.—I have been twenty-six years in the business of growing and fruiting apples and six years in the nursery business. I have found that in pruning in July I have checked the growth somewhat. When you check the growth you help the tree to ripen up its wood and to form its wood. Last season has been the only one that I have not had a good crop of apples. I think trimming in July will bring our trees into fruiting.

Q.--What will you do with a tree planted on ground you can't cultivate?

A.—I think the stones around the trees will keep them in about the right condition.

IS FOREST CULTURE IN WISCONSIN DESIRABLE? IS IT PRACTICABLE?

By L. S. CHENEY, Secretary State Forestry Association.

Mr. President, Ladies and Gentlemen:—I wish to consider with you, for a few minutes this evening this two-fold question. It is one which closely concerns each of us. The time has come when it should be answered. The time will soon come when it must be answered pro or con. If answered now, in the affirmative, and wise plans inaugurated to carry into effect the spirit of that answer, very great advantages will be gained. If the answer be deferred until we no longer have forests or great lumber interests within our state it will still not be to late to act, but we will be compelled to work under vastly greater difficulties should we then decide in favor of forest culture.

In the consideration of this question we will include protection to existing forest areas, as well as forest growing proper. We will, also, assume

an affirmative answer for the larger areas of Europe and the United States; since it is impossible to treat the general proposition, satisfactorily, in a paper of the length that this must necessarily be. We shall not go wrong in this assumption as it is maintained, I think, by the history of forest culture and the needs for it in this and other countries.

In our own state, once so lavishly endowed with a forest wealth, unsurpassed anywhere, we are just beginning to realize that what was once supposed to be an unfailing storehouse, is rapidly approaching exhaustion. If existing conditions are allowed to operate unchecked and unmodified for another decade, our vast timber consuming industries must look elsewhere for employment. Already, in fact, they are beginning to do so. To fully realize the extremes to which lumbermen find themselves compelled to go, it is only necessary to see what kind of timber they will cut at the present time. While engaged in work along the upper course of the Wisconsin river, during the past summer I had opportunity to see a very large portion of the previous winter's cut of logs that came down that stream. While I was prepared in a measure to see much inferior timber, what I did see was a revelation to me. There were hundreds of those logs (I think I may safely say thousands) eight, ten and twelve feet long that a man of ordinary strength might take upon his shoulder and carry away without serious difficulty while many of them would no more than clear a "two by-four."

At one place, a few miles up the river from Rhinelander, the timber was being cut from a small tract of land. Of the trees cut not over ten per cent. would measure sixteen inches across the stump, and ninety-five per cent. of them were Jack or northern scrub pine, *Pinus Bankisian*. This is a single example of what is transpiring all over the pine region. Five years ago this timber would not have been considered worth cutting. In many places, logs that have lain upon the ground for years and from which the sap wood has long since decayed and fallen away, are being worked into shingles, lath and even dimension stuff, if the logs have not been too nearly destroyed by borers. I have been informed, and I think credibly, that in many localities where some years ago fires run through the forests and killed the pine, and where large numbers of the dead trunks are still standing, the latter are being bought up and are to be used when better qualities of timber can no longer be obtained. These few examples, of the many that might be given, are sufficient to indicate to us what practical business men think of the fate of our primal forests.

Once these are gone what shall succeed them? In other words shall the people of this commonwealth by some united effort attempt to assist nature to reclothe herself or shall barren wastes replace over extensive tracts of our territory the deep and silent forests that have been so productive of wealth and prosperity to us during our entire history?

According to the tenth census report there were in the year 1880, seven

hundred and four mills in the state of Wisconsin engaged in the manufacture of lumber; each giving constant employment to ten men, with the employment to an additional ten during the cutting season, making a total of 14,080 employes engaged for all, or a large part, of their time at the mills, in the work of manufacturing lumber. Add to this number perhaps 10,000 employed in the forests in cutting the logs and in driving them to the mills, and we have a total of 25,000 men, representing probably 18,000 families. Assuming five persons as the average number in each of these families, we have 90,000 people depending entirely, or in large part, for their support, upon the manufacture of lumber. It is now thirteen years since these statistics were collected. In those thirteen years the lumber industry has no doubt grown very considerably, so that at the present time it would be safe to assume that there are from 110,000 to 125,000 persons engaged in the work of making lumber in the state of Wisconsin. By the report just referred to the total value of all products from the 704 mills of the state was $17,952,000 in the year 1880. The value of the annual output at the present time is probably $20,000,000.

If now the people of this state choose to say that nothing shall be done toward protecting or economizing our remaining forests, or toward replenishing, increasing and perpetuating them, this army of 125,000 persons must leave our state, seek employment in other lines of industry, or become idle consumers. And the annual income of $20,000,000 will be cut off; to say nothing of the reduced demand upon our farms and shops for the necessaries of life and the increased competition in other industries tending to reduce returns in them.

There are other reasons for considering it undesirable to remove the forest cover without some provisions for restoring it. Dr. Otto von Hagen, a Prussian, writing upon the results of removing the forest cover says: "How entire districts which flourished in the past have been reduced to poverty and want through forest destruction has been seen in Prussia, where large tracts of land have suffered under such calamities"

By stripping the beaches of their forests in the seventeenth and eighteenth centuries the sea-coasts have become exposed to all winds and storms. Fields, once fertile, have been transformed into waste sand dunes and whole villages, whose agricultural people formerly prospered, have ceased to exist.

In the middle and eastern provinces light and undulating soil has been replaced by small or large sand hills, and places where forests once stood and served to carry off stagnant moisture, have been turned into marshes. In the western mountainous provinces the fertile forest soil, the product of thousands of years of trees has disappeared. It has been dried up by the sun and wind, and washed into the valleys by rain and snow water, leaving the mountains bare and unfertile, whose soil is scarcely capable of supporting any vegetation save heath and broom-grass."

The rich meadows in the valleys have vanished. They have been again

and again, after every rain storm, washed and torn by the water rushing from the mountain top. The high moors which have been formed by the destruction of the forests, emit at all times of the year vapors and fogs which kill vegetation far into the land. Thus the soil becomes directly impoverished and the climatic conditions change and become worse. Instances of the injurious effect upon the culture of the soil caused by the destruction of the forests can be seen to a smaller or larger extent throughout Prussia.

In France and Switzerland the terrible mountain avalanche has come to the people again and again as the legacy of their improvident forefathers. By the latter the mountains were denuded of their forests. Their bared slopes, upon which all vegetation ceased to grow, became parched and barren, and the roots within the soil decayed. Thus, not only was the protecting wall of living trees taken from between the inhabitants of the valley and the threatening snow of mountain slopes, but masses of rock and the soil loosened by freezing and the decay of roots, became a new and ever present source of danger.

The history of the deforesting of the Adirondack region of New York, and the disastrous consequences which followed, is a matter of common knowledge. In sack cloth and ashes the people of that great commonwealth are to-day eating the bitter bread of repentance. That this repentance is sincere, you will appreciate when I tell you that the state, while holding 715,000 acres of forest lands in the Adirondack region, contemplates the purchase of from 3,000,000 to 4,000,000 acres additional adjoining what it already owns. The people of that state have had sufficient cause to regret their own short-sighted policy. The beauty of their scenery was marred or entirely destroyed. The snow from the mountain sides, suddenly transformed, rushed down the valleys in furious torrents, carrying destruction in its wake, leaving behind no reserve supply of moisture for the long hot days of summer. Droughts succeeded flood until the productiveness of their soil became seriously reduced.

At this point I doubt not I shall meet the off-hand statement: "This has nothing do do with us. You may strip the timber from the entire state and we shall never notice any difference." I answer, should this prove true, Wisconsin will furnish the first exception to a rule that has been verified in every land inhabited by civilized man. Go on with your work of destruction. Take from hill and valley the trees that stretch their protecting branches over the moist fresh earth beneath. Leave none. Take all as you go. The sunshine of summer returns as bright and warm as ever. The winds find now no obstacles in their course. They sweep across the lands, stirring the atmosphere to the very surface of the earth. Under the influences of wind and sun, the mould, the product of the decay of leaves for centuries, quickly gives up its moisture, becomes as an ash heap, and is carried away by wind or water, or burned. Now, when rain comes the moisture is no longer absorbed. The covering of decayed

leaves is gone, and quickly the water which should have been held in the soil, runs from the surface of the land into streams causing disastrous floods. The snows of winter, rich with gifts for the soil, are piled as deep as ever, but by the warm winds and advancing sun of spring, they are quickly transformed into raging cataracts and bear away with them, not only their contribution of fertility, but the soil itself. Thus it transpires that the productiveness of any given area of land is seriously impaired. The climate also undergoes material changes. With the removal of forests the country is exposed to all winds and subjected to extremes of heat and cold. With the lack of moisture caused by rapid running away or evaporation comes the dry, hot atmosphere of summer, oppressive to all things living.

The preceding statements are those of facts established by repeated experience, each and every one of which is capable of demonstration. Shall we, then, repeat in Wisconsin the follies of other states or countries, or shall we not rather profit by them? Our better judgment tells us to use and enjoy, rather than abuse and destroy the natural advantages bestowed upon us by a far-seeing Providence.

Can we successfully and profitably carry on the cultivation of forests within our state? However desirable it may be to have forests it would certainly not be the part of wisdom to attempt their cultivation without some assurances that the attempt will not prove an expensive and miserable failure. Fortunately we have some experimental evidence within our own borders bearing upon this point, and an abundance of it from the experience of others.

In the discussion of this part of our subject we must consider three chief elements, namely: The natural conditions suitable to the growing of forests, the availability of land for such a purpose, and the matter of protection to growing forests against fires.

Concerning the first of these it would scarcely seem necessary to speak at length to a Wisconsin audience. Occupying, as does our state, a choice position in one of the few great timber regions of the earth, it might be assumed that our natural conditions are suited to arboriculture. However, a few facts will not be out of place, and they may aid in convincing some minds still unsatisfied upon this point.

Three quarters of a century ago, when what is now included in the boundaries of the state was practically unoccupied by whites, that portion of the state lying west of a straight line connecting Milwaukee and Hudson, with the exception of narrow strips along the main water courses and a considerable area including what is now Richland and adjoining counties, was essentially a prairie region with here and there scattering groves of oak. To day it is far different. With the coming of the white settler, prairie fires became fewer and fewer, and finally ceased to occur. At once over all the country, oak, elm and cottonwood seedlings sprung up on the untilled lands. These were allowed to grow, and from them in time the seeding went on until at the present time there is an abundant supply of

timber, such as it is, throughout the region. This timber is valuable chiefly as fuel.

In 1880, Mr. E Reynolds, writing from Metamora, Fond du Lac county, makes the following statements: "Twenty five years ago our openings were sparsely covered with large Burr oak and White oak trees. These have all disappeared. In their stead, where the land has not been cultivated, there are dense groves of timber. Some of these are being cut away and yield from twenty to twenty-five cords of good wood per acre" By this it will be seen that the land in question would yield one cord of wood per acre per year, ranging in value from $2.00 to $3.50, depending upon the distance from market. Continuing, Mr. Reynol s says: "Thousands of acres have been cleared in our county and still we have a better supply of wood than we had twenty years ago. These are examples of what nature will do unaided, if man will but stay his implements of destruction. It is well known that when pine forests are entirely removed, as a rule, the land will be quickly covered with a dense growth of "popple" or white birch or both, if protected from fire. It has been a rather common belief that pine would not grow again upon land once covered with pine and from which it has been removed. The facts, however, I think are entirely at variance with this belief. It is true that such tracts of land are seldom covered again with a growth of pine, but this must be attributed largely to the fact that pine seedlings find the conditions of heat and moisture unsuited to them where the timber has all been removed, and that should they succeed in getting a start, they are usually destroyed by fire. Any observing person, who has traveled in pine forests, will tell that you there is no lack of pine seedlings. To come back to my own observations once more, I saw, during the past summer, young white and red pines ranging in size from the seedling with its seedleaves still partially enveloped in the seed coats, to trees large enough for railroad ties. These all upon land from which the salable pine had all been cut. From the facts stated above I think we are justified in assuming that so far as soil and climate are concerned we can grow forests.

Have we lands that may profitably be devoted to forest cultivation? Leaving out of consideration for the present the modifying influences which forests may have upon climate and soil beneficially affecting agricultural pursuits. We can not employ lands that will give a return, as farming land, of from $3 to $8 per acre, in the production of trees, with a return per acre of from $1 to $2.50. This is not necessary. There is an abundance of land in the state which may very well be given over to this purpose without interfering with agricultural pursuits. We have 1,365,000 acres of tamarack and cedar-swamp lands that will never be useful as tillable land. In addition to this we probably have 1,500,000 acres of sandy or rough lands upon which the growing of ordinary crops is practically impossible. To these we may, I think, add another block of 1,000,000 acres lying along our northern border which would, in a lower latitude, be good

tillable land, but upon which, as it is situated, but few crops can be grown and these not always successfully. This would give a total of almost 4,000,000 acres. Upon all this with proper care timber could be profitably grown.

It will be of interest in this connection to know what returns have been realized from systematic forest cultivation. The government forests of France yield an annual gross income, according to official report of 1887, of $5,741,000. The cost of management for the year 1886 was $3,028,000, leaving a net revenue to the government of $2,713,000, The *Century Magazine* for September, 1893, speaking of our forest management, says: "The United States sells its forest land for $2.50 per acre. * * * The French government forests return an average profit of $2.50 per acre annually from timber sales or 2½ per cent. on the value of the land. * * * The United States is exactly in the position of a man making large drafts on and using up an immense idle capital."

The kingdom of Prussia with its 134,500 square miles of territory and 30,000,000 of people, has in state forests 6,173,000 acres from which it realized in 1887 $6,567,250 net revenue. From these forests, for a series of thirty-five years, from 1849 to 1882, the average annual net income was nearly 50 per cent of the gross income, yielding net annual returns of from $2,000,000 to $15,000,000.

The most striking illustration of what may be accomplished by intelligent, systematic forest management, is furnished by the little kingdom of Wurtumberg. This is one of the better agricultaral provinces of the German empire. It has no inaccessible mountain lands, has only 7,532 square miles to support a population of 2,000,000. This little state has set aside 470,000 acres for the production of timber. From this acreage, in the year 1884, the government realized a net income of $1,236,477, or $2.63 per acre. For the five preceding years, the net average annual income was $1,087,163. Here we have a state as well adapted to agricultural pursuits as Wisconsin, or better. A little more than one eighth its size, maintaining a population of a third more, devoting one tenth of its area to forest culture with the results indicated above. The profits from forests to this litttle state for the year 1884 was more than the entire amount of our state taxes for the year 1887.

The most serious obstacle in the way of successful forest growing in Wisconsin is the constant danger of destruction to growing trees by fire. The percentage of timber destroyed by storms is comparatively small. Forest guards could reduce the stealing of timber to a minimum. So far in the history of the United States, American forests have not suffered seriously from the ravages of plant disease as European forests have. But up to the present time we seem to have failed to find any effective means of protection against fire. Strangely enough this appears to be a trifling source of damage to European forests. Strict laws rigidly enforced have done the work that we have failed to do.

In 1880, 108 considerable forest fires were reported from Wisconsin; 400,000 acres of land were burned over, with a loss of three quarters of a million of dollars. Assuming this as an average annual loss by fire, we find that we lose each year half as much as it costs annually to manage the forests of Wurtumburg, or half the amount paid annually into our state treasury as taxes. I doubt not that this three quarters of a million dollars expended annually in a judicious manner, would soon give us one million acres of timber lands paying handsome profits into the state treasury, with forest fires of rare occurrence.

An analysis of the causes of the 108 fires just mentioned will disclose some points of interest and suggest lines along which legislation may be made effective. Twenty of the fires had their origin in attempts to improve pasturage. Fifty eight in clearing land. Thirteen from locomotives, three in acts of malice, and the remainder in carelessness of hunters, rangers, etc.

Ninety-two of the fires may be traced to carelessness or something worse than carelessness. Can this be remedied? It certainly can. It has been done in other countries, it can be done here It may be impossible to entirely prevent forest fires, but the number of them and the damage wrought may be very greatly reduced. If there are not already laws covering these cases, enact them, establish a system of forest guards sufficient to allow one guard to each twelve or sixteen sections. Give to the guards the powers of sheriff or constable, to make arrests for infractions of the law. See to it that all settlers in the vicinity of forest preserve, understand the value of forests to them and thus secure their co operation. As soon as practicable require the burning of all tree tops when the trees are cut, particularly the small twigs and needles of coniferous trees. Insist that all persons clearing land or burning it over for pasturage, remove all combustible material from a strip between the land to be improved and adjoining tracts, of sufficient width to prevent the escape of fire, before setting what are known as running fires. Impose severe penalties for leaving camp-fires or for firing marshes or other lands to drive game from its cover. In short treat this source of wealth as other sources are treated. Make wise laws respecting it and enforce them.

If in this paper a fair presentation of the case has been made our ques- must be answered in the affirmative.

REPORT OF COMMITTEE ON RESOLUTIONS.

Resolved, That the committee on trial stations shall visit them, or authorize some one competent to do so, one or more times during the season, and report at the summer meeting.

Resolved, That where our library contains duplicate volumes of reports, one copy of each shall be donated to the horticultural library of the Agricultural college of the University.

Resolved, That the committee on legislation be instructed to prepare a bill to present to the legislature at its next session, providing for a law by which the secretary of state shall be required to secure the approval of the secretary compiling our volume of transactions, before accepting the same from the public printer, and that the above committee invite the co-operation of kindred societies of the state.

WHEREAS, Knowing the value of fruits, plants and flowers as an educator, and realizing that the love for them must be created in youth, therefore,

Resolved, That we urge upon the members of the State Board of Control the importance of establishing horticultural training at the industrial school at Waukesha and the State School for Dependent Children at Sparta.

Resolved, That to the members of our society who are not with us on account of sickness, we send cordial greetings and kindly remembrances, expressing our heartfelt sympathy and the hope for their speedy recovery, and that the future may bring to them many of the blessings of horticulture.

Resolved, That a copy of this resolution be forwarded to ex President J. M Smith, Green Bay; Daniel Huntley, Appleton; E. Wilcox, La Crosse; C. A. Hatch, Ithaca, and that they bear the signatures of ex President M. A. Thayer and ex-Secretary B. S Hoxie.

Resolved, That the Wisconsin State Harticultural society deeply deplores the death of Dr. Joseph Hobbins, and that we tender to his bereaved family our condolence in their irreparable loss, and we recommend to kindred local societies in Wisconsin the planting of memorial trees to commemorate his labors in the field of horticulture.

WHEREAS; We recognize the impetus given to the advancement of horticulture in Wisconsin by the prominent place given it on the program of the Farmers' Institutes.

Resolved, That in the death of W. H. Morrison, superintendent of Farmers' Institutes, the Wisconsin State Horticultural society has met with a great loss, and that our expressions of sympathy and condolence be tendered his bereaved family.

Resolved, That the thanks of this society are due and are hereby tendered

to B. S. Hoxie, secretary, for his faithful and, at times, arduous labors in gathering and sustaining a fruit exhibit at the World's Fair, which was accomplished only by a very considerable sacrifice of personal interest.

Resolved, That the thanks of this society are due and are hereby tendered to the fruit growers who so faithfully stood by the interests of the society in supporting our fruit exhibit at the World's Fair, and made of it a very creditable success in spite of most discouraging conditions; to the Thayer fruit farms for the donation of 30,000 small fruit plants, to the school children of Wisconsin, by means of which the interests of this society and the cause of horticulture have been very materially promoted and also to W. D. Boynton for a generous donation of spruce trees.

Resolved, That we hereby express to Prof. W. A. Henry, dean of agricultural college, and his co-workers our sincere thanks for the opportunity given us to visit the University buildings. We wish especially to acknowledge the favors extended in providing carriages for us, and the special pains taken to show us about the buildings and to explain the methods of work and instruction given at the University.

Resolved, That our thanks are due and are hereby tendered E. V. Briesen, superintendent of public property, for courtesies shown us during our twenty-fourth annual meeting. Our wants have been anticipated by providing such rooms in the capitol as has made our meeting a pleasant reminder.

Adopted.

REPORT OF COMMITTEE ON NOMENCLATURE.

Your committee would respectfully report that in the list of apples found in the Transactions of 1893, we find Red Queen is made a synonym of Lubsk Queen, which is incorrect; that we adopt the name Avista for the long keeping apple introduced by A. J. Philips, and recommend the same for our trial list; that the next volume of Transactions should have a brief descriptive list of all the varieties of fruit we recommend for general cultivation in our state.

We find in our volume for '93 various names of fruits and plants misspelled or mis named, which seem to be owing to the loose system of our state printing contracts and which call for some action by this and kindred societies of our state.

Adopted.

REPORTS OF DELEGATES TO STATE SOCIETIES.

REPORT OF WILLIAM TOOLE, DELEGATE TO MINNESOTA.

Mr. President, and Members of Wisconsin State Horticultural Society:— Your delegate to the Minnesota state society's annual meeting, held in Minneapolis January 9th to 12th, is pleased to say that he met with a very cordial reception, showing a strong fraternal feeling toward our state society. The attendance was large as is likewise the membership of the society, numbering we understood upward of three hundred. One reason for this large membership seems to be because they give less attention than does our society to organization of local societies, so that, while our society influence is widely diffused and probably reaches a greater number of persons, there is left to their people more reasons for joining the state society. It would seem to a passing observer that in Minnesota there is with them a more widespread earnestness to make the best of circumstances, and determination to succeed with apple growing in localities where years of experiment have given but little encouragement.

FRUIT LIST ADOPTED AT MINNEAPOLIS.

Apples for general planting — Oldenburg and Hibernal.

Apples for favorable localities — Wealthy and Longfield.

Apples for general trial — Patten's Greening, Anisim, Peerless, Charlamoff, Okabena, Kaump, Hotchkiss and Arabian.

Crabs and Hybrids for general planting — Virginia, Early Strawberry, Martha, Brier's Sweet, Whitney, Minnesota, Transcendent, Hyslop.

Crabs and Hybrids for trial — Darth's Hybrid, Greenwood, Faribault, Arctic, Gideon's No. 6, Not. Mary.

Plums — De Soto, Rollingstone, Forest Garden, Weaver, Wolfe (not the Iowa Wolfe).

For trial — Rockford, Owatonna, Ocheda.

Grapes — Concord, Moore's Early, Delaware, Worden, Brighton, Janesville, Cottage.

Raspberries, red — Turner, Cuthbert, Marlboro, Brandywine.

Black caps — Ohio, Souhegan, Gregg, Nemaha, Shaffer.

Black caps for trial — Older, Palmer.

Blackberries — Ancient Briton, Snyder.

Currants — Red Dutch, Victoria, Long Bunch, Holland, White Grape, Stewart.

[The attention of our members and readers is called to the foregoing report, made by our delegate to the Minnesota society. Be sure and note the

difference in apples for general cultivation and for general trial; set the former and let the trial stations and experimentalists report on others later on. Also, for fear of misleading our planters and orchardists, let me say that for our state their list of crabs and hybrids for general planting is too large except for the growers of nursery stock, as in four fifths of our state standard apples of good size and good quality can be grown with the same expense and care that crabs can. So, instead of eight varieties, cut it down to three or four; say Whitney, Martha and Virginia, and add Sweet Russett for Wisconsin, and if the agent should have those recommended for trial, say to him that you are willing to let the stations do that trial work — SECRETARY.]

Judging from discussions listened to, as well as the fruit list recommended by the society, it would seem as if much of our own state of Wisconsin is better favored with climate and situations favorable for fruit growing than is Minnesota.

Whatever they have learned by dear experience is of value to the horticulturists of our own state. Discussions in regard to distance apart of apple trees in orchards seemed to show that all favored a closer planting of trees in rows running north and south than the distance of rows apart. Some favored very close planting — for instance, Mr. Sommerville plants his apple trees in rows 16 feet apart and the same distance between rows, then between each pair of rows he plants still another row of trees alternating with them. The majority opinion of the society was probably in favor of rows 25 to 30 feet apart and various distances in the row. Mr. Patten, of Charles City, Iowa, objects to very close planting, because in a dry time the trees suffer more for lack of moisture, and also because the dense shade prevents best development of fruit.

There was an extended discussion of shelter belts, which assumed definite shape after a resolution was offered advising general planting of such shelter belts for orchards. The most strenuous advocates of this kind of orchard protection claimed that the chief value of such shelter is to hold the fruit on the trees during high winds. The resolution was tabled. A Mr. Pendergast stated that fruit trees, shrubbery, etc., had continued to winter kill with him on a gravelly soil until he became able to irrigate in the fall, and since following that practice by aid of a driven well he has had no trouble with winter killing. Protection of the trunks was favored and the use of paper, strawboard, wood veneers, straw and hay bands, lath, corn stalks, wire screen and boxes filled with earth around the tree were all recommended.

It is claimed that all close shelter should be removed in the summer time, but not necessary with the wire screen. Professor Green thinks that a forkful of hay in the crotch of the tree in winter is a valuable protection.

Mr. Harris gave an interesting description of new varieties of seedling

apples, but probably growers in our state will wait until they are better known before testing them.

He finds there is much confusion in classification of the different varieties of Russian apples. The same name being applied to several varieties, and also some varieties going by different names, and recommends that some competent persons take the matter in hand to correct the nomenclature of this class of apples. The weather conditions affecting pollenization both with apples and strawberries seemed to have been the same there as in our state, apples having failed to set and strawberries were imperfect. They do not yet seem to have our trouble with blight and scab, but with the close planting prevalent they will probably yet suffer more from that trouble than we do.

In the small fruit talk nothing was brought out so noteworthy as the remarks of Mr. Pearce, of Chowan, telling how he raises red raspberries, claiming that he has not had a failure of a good crop in fifteen years. He cultivates throughout the season from early spring to late in September, when he throws a furrow towards the canes, touching them but not against them. About the last of September and first of October, he bends the canes for next year's fruiting across the furrow and covers with a hoe, reaching forward for soil as he advances, only covering deep enough to hide the canes, and doing the work rapidly. The old fruiting canes are left standing over winter to hold snow for winter protection, and cut off with a brush scythe in the spring. After the rubbish is cleared away posts are driven at ends of rows and wires are stretched in such position that the intermediate supports point from the base of the row at an angle of 60 degrees. The canes are then lifted with a fork and brought up against the wires, growing through the season at that incline.

The young growth has the freedom of the other side and can be cared for through the season without interfering with the fruiting canes. The canes are laid down on the opposite side of the row the following fall, and each year the direction of laying down is reversed.

In the discussion of ornamental shrubs, Professor Hansen of the Iowa Agricultural College specially recommended the Russian Olive, Amur Tamarisk and Berhens' Thunbergi as very desirable and hardy. There was some opposition to allowing the secretary the expense of a stenographer in addition to his salary of $600 per year, but a fair majority voted in favor of the full allowance.

There was a good showing of apples, including some which had been sent to the World's Fair and afterwards kept in cold storage for this meeting. Early varieties like the Duchess were in fine order, and the opinion is growing that with good fall varieties and cold storage we need not seek for the ideal long-keeping winter apple.

The show of grapes was fine in a number of varieties. Delaware and Brighton were in good eating condition. Flowers from some of the greenhouses were there in abundance and very fine.

Without taking notes the following are remembered as being on the tables, either as cut flowers or blooming plants: Azalias, Hyacinths, Fushsias, Lily of Valley, Chrysanthemums, Roses, Carnations, Chinese Primrose, Primula Oboconica, Lilium Harissi, Cyclaman Cinerarias. Vegetables were fine and in considerable quantity and variety. Some of the members went the last day to visit a set of greenhouses having 55,000 feet of glass devoted to winter growing of vegetables. We can not presume on your patience by offering even a fair synopsis of the proceedings, but would advise all Wisconsin horticulturists to obtain copies of the Minnesota State Horticultural reports if possible. The small fruit list as recommended by the society is as follows:

Gooseberries—Houghton, Downing.

Strawberries—Crescent, Beder Wood, Warfield, Captain Jack, Haviland, Wilson, Bubach, Parker Earl.

For trial—Princess.

REPORT OF M. A. THAYER, DELEGATE TO THE ANNUAL MEETING OF THE IOWA STATE HORTICULTURAL SOCIETY.

The annual meeting of the Iowa State Horticultural Society was held at De Moines, Iowa, November 21 to 24, 1893, and afforded your delegate both pleasure and profit.

We received a most cordial welcome, and were nicely entertained throughout the session.

We found many practical horticulturists whose success has given them a national reputation.

We met some of the best writers known to horticulture and listened to many valuable papers. These may be found in the next volume of their reports, and I commend to every member of our own society as being of great value.

The criticisms are few to which your attention is called, with suggestions that may be of interest to our own society.

First: In the production of small fruits they are less successful than we, because they too often attempt to grow without winter protection.

Their sudden changes of temperature is more injurious to plants than a severe uniform temperature, and even though the fruit may not be entirely destroyed the constitution of the plant or tree is weakened, and like the human constitution, can not so well withstand disease. A large per cent. of small fruits, *not protected* in winter, is thus lost.

Again they are burdened with too many varieties of apples, pears, plums, and cherries. Instead of recommendations of a few well tested varieties, numerous new kinds are being propagated in nurseries and

distributed throughout the state, under approval of the state society, which are already proving great failures.

The Russians are prominent in this failure. We should exercise great care in our recommendations of varieties for general cultivation, if we would avoid similar trouble.

Some of the newer members complain that too many scientific and professional papers were presented, and too little time allowed for their discussion.

That the nurseryman and professional tree man, with his novelties and untried varieties, occupied much of the time that should be given to practical common sense instruction for the beginner as to setting, cultivating and protecting his little orchard and garden. This criticism seemed to be just, for some very excellent papers were passed without discussion for want of time, and there was an absence of questions and discussions by new members, which constitutes, in a great measure, the success of all horticultural organizations.

The fraternal feeling stimulated by the exchange of delegates with other states, results in great good and should be universally practiced Let us give our visiting friends a most hearty welcome.

REPORT OF B. S. HOXIE, DELEGATE TO ILLINOIS.

It has for years been my desire to attend a meeting of this society. So yielding to the invitations of H. Augustine, president, and others of its members who were in attendance at the World's Fair and to gratify this desire to attend some meeting of a horticultural society where I could be free from any responsibility of its success or failure, I boarded the early morning train or not so early by reason of a storm, December 12, for the capital city of Illinois. The lateness of the train as a matter of course deprived me of one session. The society is much larger than ours in membership and fourteen years our senior, and their work embracing a large state whose northern limit is bounded by the south line of our Wisconsin apple region, then to the south nearly or quite 300 miles into a country of peaches and nectarines, so as a matter of course the scope of their papers embraced topics not considered at our meetings. The promptness in discussing questions showed a lively interest in the work of the society.

One remarkable thing which was very noticeable to a Wisconsin man was the entire absence of ladies' names on the program and hardly a lady present in the room except the reporter. Possibly this was owing to the fact that the Illinois State Grange P. of H. were holding their annual meeting in the assembly chamber at the same time we were holding ours in the sen-

ate chamber; for we could not believe for one moment our Illinois brethren were lacking in gallantry to their sisters, wives or mothers as by word or act to exclude them from the program or participating in the deliberations of the meeting.

The sessions were harmonious throughout and the election resulted in the choice of the same officers as last year. Mr. H. C. Hammond, who had so long filled the office of secretary and did so much to bring the society into prominence at the World's Fair, passed away to spirit life before realizing or seeing the wonders he had so often anticipated. Dr. A. G. Humphrey, of Galesburg, paid a fitting tribute to the memory of a noble man and indefatigable worker for horticulture and horticultural science.

Mr. Bryant of Princeton, on "Utilizing the Waste Products of the Apple Orchard," started out with the proposition that all manufacturers and manufacturing establishments were obliged to use the by or waste products, which in many instances meant the difference between profit and loss to the entire industry. He said years ago the waste in quality in an apple orchard was very small, while now it amounted to 30 or 40 per cent. of the entire crop. The evaporation of apples was considerable, but should take a fair quality of fruit. All refuse apples should be used for cider, champagne or vinegar, and the second pressing of the pomace would make good vinegar, and cider vinegar is always in demand at remunerative prices; dirty or rotten apples should ever be used. Query: If the waste by reason of poor apples is from 30 to 40 per cent., what is the remedy? In discussing this question much valuable information was brought out relating to the manufacturing of good vinegar. One gentleman stated that he once had 300 bushels of apples which were frozen; after thawing out they were made into cider for vinegar. The result was a larger quantity and better quality than that made in the usual way. In making vinegar from cider the barrels should be about two thirds full, and allowed to freeze; this method insures more rapid fermentation.

Paul A. Bonvallet of St. Anne sent in a very valuable paper on "Grape Culture." His first proposition was that soil has much to do with quality of fruit. His soil was a yellow sand vineyard located on a ridge, so that perfect drainage was secured; in fact, this yellow surface sand rested on a kind of quicksand subsoil. Vines were planted 10x12 feet in rows; trains on wire fastened to posts, and finds that it takes from five to ten years for a vineyard to come into profitable bearing; would not select a rich soil for grapes. Concord with him was the best variety. The lowest price he ever sold at was the past fall, when some were sold for 16 cents per basket. Black rot was the only disease on his vineyard. It was stated in the discussion that the best grapes in their exhibit were from Mr. Bonvallet's vineyard.

Mr. Charles Garfield of Grand Rapids, Mich., gave a most excellent address, "The Planting of Trees." He referred to the trees at the old home in our boyhood days and their value — not so much in dollars as they were

for the beauty of the home. He would plant trees by the side of fences and lanes and by the roadside, would plant them by thousand to give away if his neighbors would only set them out.

There is a money value to trees as you may find out when one is wantonly destroyed and a jury is called to assess the damage. Ask your neighbor how much he would take for the trees on his lawn or in a certain grove. What are the two trees worth beside your gate which you see a long way off as you drive towards your home? What would you take for the tree you planted the spring Nellie was born? It was Nellie's tree, but where is she now? The tree is a better monument to the memory of the loved one than any slab of stone. Mr. J. L. Hartwell of Dixon, in his paper on raspberry and blackberry culture, gave much good practical advice, and while he had not practiced laying down the canes for winter protection had no doubts about its value, does not care to experiment with new varieties, is quite willing that others should do that part of the work. Mr. R. T. Fry of Olney, would give his apple orchard good cultivation for the first five years, plant on well-drained land but do not set trees too deep, sow rye in the fall, turn under in the spring and then sow buckwheat and plow this under. We must have good fertilizers if we expect a good crop of apples. Never plow under a green crop in very hot weather. Mr. Homer D. Brown of Hamilton, had a grand paper on horticultural homes. What is a home without trees and fruit? A diet of fruit is better than hog and hominy. Many fruit growers often neglect the adornments of home, but these men are generally a great success at meetings, but not at home. He believed in making the back yard neat as well as the front part of the house, and did not believe in having the wife and daughters do the lawn mowing. When you make the farm, leave some of the native trees; but; if these have been removed, go to the woods and select fine specimens and plant them out. The report of Mr. H. M. Dunlap, secretary, on the fruit exhibit at the World's Fair was quite full and complete in details of the exhibition, but my notes did not take it in.

The fruit on exhibition at this meeting consisted of 175 plates, containing 65 varieties of apples; 200 plates, containing 31 varieties of pears; grapes 80 plates, with 15 varieties, and 20 plates of quinces. The awards to this society at the World's Fair, were for exhibit of apples of 1892; continuous display of small fruit; pear crop of 1893; exhibit of stone fruit; collection of grapes; apples of 1893 — in all six medals.

J. L. Hartwell of Dixon, was chosen a delegate to attend the Wisconsin state meeting to be held in Madison in February, 1894.

REPORTS OF COMMITTEE ON OBSERVATION.

REPORT ON RICHLAND COUNTY FRUITS, CROP 1893, A. L. HATCH, ITHACA.

The ideal country of the ancients was one flowing with milk and honey. Perhaps the modern ideal is one producing an abundance of fruits. The town of Ithaca has a very small portion of its area devoted to fruit culture, but the crop of 1893 will make a very neat exhibit grown mostly in my neighborhood.

Of apples over 3,000 bushels were grown — only a partial crop. Of this amount my own orchard produced 1,500 bushels, which gave me a net profit of $1,200. Mr. S. I. Freeborn's crop was 800 bushels, and gross sales amounted to $700. Mr. Freeborn has, perhaps, the largest number of kinds in his orchard of any person in Wisconsin. Of these he has 200 kinds top-grafted on trees three or four years old in orchard; 100 other kinds of standard varieties and choice Russians brings the total number up to 300. He also has hundreds of pedigree seedlings of hardy apples.

The varieties that fruited mostly here this year were Tetofsky, Duchess, McMahan, Wealthy, Haas, New Hampshire, Newell, Tallman, Fameuse and several kinds of Russians. About 700 barrels were shipped to Chicago and brought an average of $3 or more per barrel net.

Of grapes about 15,000 pounds were grown — Mr. Freeborn having fifty varieties and producing nearly two thirds of the amount named. Some of the Roger's Hybrids were put in cold storage and are still in market. The prices ranged from 3 to 5 cents per pound, averaging not far from 4 cents. Delaware, Worden, Moore's Early, Niagara, Brighton, Agawam, Lindley, Wilder, Janesville and Hartford include the main varieties. For fine quality and perfection of fruit the grapes grown here are not excelled by any grown elsewhere of the same kind; 500 or 600 pounds were sent to the World's Fair and placed on exhibition by the State Horticultural Society. Also upwards of fifty bushels of apples, the exhibit being awarded two medals.

Raspberries, especially the Cuthbert, are extensively grown and mostly sold in the local market at Richland Center. In my immediate neighborhood about 500 bushels were grown, of which S. I. Freeborn and E. E. Freeborn produced over one half. The fruit sold at retail for $3.00 per bushel.

Of blackberries, 65 bushels were grown, of which nearly one half were grown by C. A. Hatch. A few Snyder and Stone's Hardy are grown; but

Ancient Briton produced nearly all of the fruit and is the favorite. The fruit sold for $3.00 per bushel.

The strawberry crop was mostly a failure here, only about 100 bushels being grown in this neighborhood.

There were also grown about five bushels each of pears, plums, currants and gooseberries, and we also grew about 40 bushels of cherries which found ready sale at $4.00 per bushel. Of these cherries Mr. Freeborn produced 17 bushels of Kentish and Early Richmond. Of these two I prefer the Kentish.

Although this last season was not counted much of a fruit season, the exhibit of this neighborhood is, upon the whole, quite satisfactory. We have further to report fruit trees, plants and vines in promising condition for next season's fruit crop.

I also append the names of growers here—all of Ithaca P. O., S. I. Freeborn, E. E. Freeborn, S. Spyker, C. A. Hatch, Geo. Hoke, John Lewis.

I estimate the value of the fruit crop of 1893 as above reported to amount to upwards of $5,500 and the total number of bushels of all kinds to be 4,100.

OBSERVATION BY J. L. FISK, OMRO.

The past season here was characterized in its beginning by the greatest promise of fruit ever vouchsafed to mortals.

At flowering time the sight of all our berry gardens, was simply magnificent; all varieties put forth their latent energies, and the result was akin to the appearance of a southern cottonfield in full bloom. But the outcome in respect to strawberries was simply exasperating; the successive droughts proved so severe and fertilization so imperfect that we, at the most, did not realize a one eighth crop. Some gardens of light soil and others of high altitude yielded nothing.

Our largest strawberries were the Jessie, only on first bloom. Our earliest were Windsor Chief. Best flavored, Chas. Downing. Sweetest and most lengthy, Haviland. The most enduring and yielding most, Wilson. The Glendale, Kentucky and Whardon stood the grief well, but fruited scantily. The Van Deman was not up to recommendation. Beder Wood, Enhance and Parker Earle held their own in growth of foliage; but of all yields of vines, under the most diverse circumstances, we find that the Warfield, fertilized with the Chas. Downing, beats anything else. We will conclude with the much daunted Vick. Verily! verily! I say unto you *beware* of it, for it is a delusion and a snare, and if, when Gabriel sounds his last trumpet, the originator of the Vick, should rise and request to accompany the blessed horticulturists to the abode of the righteous we shall naturally demand warmer quarters.

In consequence of the successive losses the three past seasons — first, 1891, late frosts and droughts; 1892, unusual rainstorms and scant daylight during the pollenization period, which blighted all bloom; and 1893, as stated, has caused the plowing up of many acres of strawberries in this section. Our preference is matted rows.

Raspberries.— Black caps did well. Ohio, first rate. Doolittle, of one year's setting, are fine. Gregg, a middling crop; too severe a latitude for them here even if laid down, which business causes a serious curvature of their spines and results in an entire physical derangement, proving disastrous to yield.

The Nemaha does the best of all here; are very hardy, and with proper cultivation will yield as well as Greggs'; are fine flavored and need not be laid down. They bring equal prices in market with any berry and ship well. Reds, did fairly; season though was unusually short. Turners were very early, very hardy here, but unless closely picked every day are soft. Marlboro, next in earliness, dry, large, yielding well if very highly manured, so firm that they ship well.

The Thwack is a close second in earliness to the Turner; none firmer, large as Cuthbert in diameter, a prodigious bearer, holding out in bearing the latest of all. The canes never rise above two feet, and it is an iron-clad that never requires trimming.

Shaffer's Collossal bears the largest berry of all, yields finely, but seems tender.

Our Cuthberts are not aging well; we think they should be changed often and severely trimmed and pruned.

The hill system of the culture of raspberries proves the most profitable here.

Of blackberries, similar results, this year from the same atmospheric conditions rendering the fruit from many acres so shrunken and devoid of moisture that they shipped "just splendid," rattling in their boxes on their way to market like gravel stones.

Our best varieties are Ancient Briton and Kittatinny. We keep in hills, prune sharply and manure well.

Of gooseberries, from the area planted we had an enormous crop. The Chas. Downings were fine, averaging in size larger than the Houghton, which yielded more numerously and were harder to pick. Among the Houghtons were some extremely large ones. Decidedly the most superior in size, earliness and quality, the Whitesmith exceeded all others; the yield was simply wonderful. They were beauties and as near transparent as any thing could be possessing internals. Those who saw the famous Puyullup Mammoth in the horticultural exhibit from Washington at Chicago said they were not as large as mine. Their habit allows of the fastest picking of any variety we know.

We cultivate in hills, trimming and shortening.

Of currants, like gooseberries, the season seemed perfection. Never

have we picked such great ones from the bushes. The White Grape never were so white, and corpulent with fatness. The small Dutch vied well with the large Dutch in size and yield.

The Victoria was prime, likewise the Goindoin. The Fay's were incomparable, with their long stems loaded to the tips, and generally larger and more translucent than the cherry, which themselves were a sight to behold.

From many a three-year-old bush of Fay's I sold one dollar's worth each. I treat my currants well, keeping them comfortable in the winter, and to prevent cold feet, which is as injurious to currants as the borers. I mulch with manure, six or eight inches deep; this brings them out blooming in the spring and very early. Likewise we keep in hills and do not let the ground under the bushes become bare of a generous mulch in the summer. Take all things in consideration, we deem that there is more money at the present time in currants than any other fruit, unless possibly red raspberries.

Of kinds of fruit aside from berries we have a few of the hardier varieties of apples introduced from the east years ago, which are being supplanted by Russians, Duchess of Oldenburg, Swaar, Yellow Transparent and Tetofsky are our most reliable for ironclads. A large area was set last spring in town, probably 5,000 trees; many Longfield, all mostly look well *now*.

Almost forgot grapes—They did well last season, that is, most of the varieties. The Concord never fails. Worden usually does well and is the finest dark we have. The finest after the Delaware of that tint is Roger's No. 9; it is monstrous in size of grape and the growth of vine. Our best grape of some 30 varieties is *Moore's Diamond*. It is not equaled in flavor by any variety we ever saw unless it is the *Malaga* from the Mediterranean which to us it much resembles in flavor, but you must watch it or bag it; for winds most thoroughly appreciate its worth.

Of plums, wild are all that is left us of which the Winnebago is much esteemed. The De Soto are being planted, some being tried on strong recommendations.

Cherries are not a success generally. The Late Richmond is the only variety that we now depend upon.

Of our soil that fruit is raised on, it is of all kinds that ever was compounded, from slippery quicksand to the most fraternal black clay, and the results seemed the past season to be good, bad, and indifferent on all, with like treatment.

Regarding insects, currant borers, scab, mildew, blight, black rot, curculio, or any other deviltry that enters into the *heart* of fruits, we clean the pests all out, with the Bordeaux panacea; we work aggressively by working early, and continue the battle with unremitting broadsides in and out of the season, which we propose to do until we gain the victory over all those abominations.

Late frosts had no appreciable deleterious effects on our fruit for 1893.

Our markets are: first, Oshkosh; when that is full, then St. Paul and Minneapolis with other northern points to take the rest.

The berry industry is an important one in this town and with the cranberry business, more persons are employed in the seasons, than in all other branches.

The small-fruit business as a whole, being remunerative, it is constantly increasing in magnitude. If we had time we would speak of a vital question, which is, of the dire necessity of some reasonably cheap commercial fertilizer to take the place of the elementary constituents of our soil, which have been absorbed and wasted in years past, and which loss we attribute to a great extent the failure in late years of our fruit crops.

OBSERVATION REPORT BY WARREN GRAY, DARLINGTON.

The old saying that "misfortunes never come singly" was verified the past season, in this part of the state as to horticulturists, for poor crops and hard times came together. There was but little frost in the ground in the spring, when the heavy snow that fell during the winter melted, so that nearly all the water was absorbed by the soil and we hoped that we had moisture enough to bring small-fruit crops through all right. But the unprecedented amount of sunshine, and continuous drying winds, caused a great failure in quality and quantity.

Strawberries started out very promising and the first pickings were of fine quality and yielded well, but the scorching sunshine and hot winds soon caused the leaves to wither, and the last half of the crop was a very poor yield and of inferior quality.

Our Warfields, which were loaded with berries, could not obtain moisture enough to develop, and many of the later ones dried without ripening.

Raspberries also suffered for moisture, excepting the Older, which came first with good yield and of excellent quality, while the Gregg, which came later, could mature only its earliest berries.

The Turner suffered least among the reds.

Blackberries of all varieties suffered greatly and a large percentage were worthless.

Apples, plums and all tree fruits were almost a total failure, as those that remained on the trees to ripen were of inferior quality.

The loss of the apple crop we think was caused by the terrible blight which came in the spring of 1892, and so shocked the trees that they formed scarcely any fruit buds in the fall.

The prospect for a crop of fruit the coming season is fair, as all went into winter quarters in good shape, and all fruit trees are well filled with fruit buds.

REPORT ON OBSERVATION, BY FRED A. HARDEN, WEYAUWEGA, WISCONSIN.

The spring of 1893 opened favorably with plenty of rain until about the middle of May; then it became very dry and the drought continued all through the berry season; only one fourth of a crop was realized, which was of an inferior quality.

Strawberries in some places burned on the vines. The first picking was made June 15; sold at ten to twelve cents a quart, later dropping to five and eig ht cents.

The Warfield, Crescent, Jessie, Michels, and Wilson are the principal varieties grown, but most growers prefer the Wilson, Crescent and Warfield as market berries.

Raspberries gave promise of a very large crop; they also were nearly destroyed by the dry weather; sold at ten cents per quart. Gregg, Palmer, Cuthbert and Marlboro are the leading varieties.

Apples were very scarce in Waupaca county; they commanded good prices, 80 cents to $1.25 per bushel. Crab apples sold at 40 cents to $1.00 per bushel. Duchess and Haas are perfectly hardy here and give us usually a large crop.

Nearly all the leading varieties are grown to some extent, while seedlings by the hundred are grown, and their equals are hard to find.

Cherries were a fair crop; sold at ten cents per quart. Fruit growing is increasing very fast in this section; trees and small fruit will be set in large quantities in the spring of 1894.

OBSERVATIONS IN ROCK COUNTY BY F. J. WELLS.

Our soil is a dark prairie loam. We have no wind breaks. April 15th found the frost out and onion sowing in progress. Strawberries, raspberries, grapes and blackberries seemed to have wintered well. Only ten out of forty young apple trees, grown in Missouri and set out in the spring of 1892, died during the spring following. From the middle of April to the 20th of May we had many cold, rainy days. Some set strawberries very early, those set in April making the best rows. Those set later were injured very much by the great drouth which lasted from July 15th to September 20th, when it seemed as though everything must die for want of moisture. I set my strawberries three feet apart in the row, and generally obtained a good stand: but the dry spell gave me meager rows last season. We commenced picking strawberries June 15th. The first sold for 15 cents per quart, but most of them sold at 7 cents the season through. The drouth reduced the crop from one half to one third of what there would

have been with plenty of moisture. The Warfields take the preference; however, we shall raise some Crescents and also some Havillands, Woods, Saunders and Earles. I have not had much success with the Smith seedling, it being too soft. The Governor Hoard gave some splendid berries in a small way. The Muskingum and Edgar Queen were soft, the Dayton handsome and large, but of small quantity; the Gandy the same, but later. Our last picking for market was July 13th, making a run of twenty-seven days. There were twenty acres of strawberries in our town. Ohio Black Cap raspberries lapped on and did very well for one year canes. The berries sold at 12½ cents per quart until they were gone. Cuthbert and Turner were badly injured by the cane borer and snowy tree cricket, notwithstanding I never had nicer canes. The season was too dry for blackberries. We succeeded in growing some very rich musk melons, which brought a fair price. Squashes were almost dried before getting large enough for use. Two wagon loads were all that we got from one acre. The woodchucks came in for a share and seemed to have gnawed a great many. I never heard of their doing so much mischief before. I expect to treat them to poisoned squash seed next season, the government permitting. The Yellow Transparent, Oldenburg and Wealthy gave us a few apples. The trees were young. Some of the old trees on high ground yielded moderately. There were no cherries or plums. Leaf blight was less than last year by fifty per cent. It usually takes early potatoes every year. We checked the chinch bug with kerosene emulsion. Grapes ripened well, but were small. A light frost warned us September 17th of winter's approach, and November 16th the ground froze hard.

REPORT OF OBSERVATIONS BY W. D. BARNES, NEW LONDON, WISCONSIN.

The spring of 1893 was wet and cold, consequently fruit trees were late in blooming. We had an abundance of blossoms on apple, cherry and plum trees, which set a fair amount of fruit. Southeast of this city on the high lands there are some fine orchards of apple and cherry trees; soil, heavy clay, limestone formation with some sand in some localities.

The cherry grows almost without care and fruits every season. We have here some apple trees forty (40) years old, and many new orchards are being set cut. In a trip during the month of September through the counties of Wood, Waupaca, Marquette and Outagamie we found about an average crop of apples, although rather small owing to the dry season. In the older orchards we find Tallman Sweet, Perry Russett, Golden Sweet and Golden Russett as most numerous. The new plantings are Duchess, Tetofsky Wealthy, Wolf River, Hibernal and other Russian varieties, with

a large percentage of Wisconsin seedlings, especially Northwestern Greenings, which seems to be the coming winter apple for the northwest. In this trip we found the best orchards on the hills with north or northwest exposure. At Ogdensburg, Waupaca county, we saw the vineyard of the Suhs Bros.' They have about two acres set out about fifteen years ago, and I never saw finer fruit. They plant mostly seedlings of their own production. The small-fruit crop in this section was a partial failure on account of drouth, which dried up the fruit before it ripened. All fruit plants and trees go into winter quarters in good, ripe condition. There are a number of small-fruit farms, from one to twenty acres, in this county, the principal fruits being strawberries and Ancient Briton blackberries. Weyauwega and Waupaca are noted as fruit regions, both of large and small fruits.

OBSERVATIONS IN RACINE AND KENOSHA COUNTIES BY JOHN RHODES, OF KANSASVILLE.

Predominating soil, clay loam underlaid with clay 50 to 200 feet deep. Native wild fruit, crab apple, plum, gooseberry, cherry grape, currant, strawberry, blackberry, cranberry, June berry and mandrake.

First cultivated fruit, peaches of fine quality and in such abundance as to be unsalable and left on the ground to be gathered by hogs. This was between 1845 and 1850. Next came apples and wild plums, then tame plums, currants, strawberries, gooseberries, cherries and pears. Grapes, raspberries, blackberries and strawberries of domesticated sorts came later.

The history of nearly every domestic fruit has been a success at first until generally disseminated as a standard crop. After this the insect and fungus, and other fruit enemies have so rapidly increased as to destroy all profit in the crop.

This stage has been reached in peach, apple, plum, pear and cherry cultivation. From the date of introduction to 1894, these last named fruits have not paid (in dollars and cents) for cultivation.

When each fruit was at its best we had no market. When population and wealth increased, we had little or no fruit. Personally I have no regrets; the pleasure derived has been ample pay.

Future prospects are better than the past to those who accept the changed conditions and concentrate thought and energy in the business. The market for first class fruit is ample. To secure the product, varieties suited to the soil and climate must be grown. Superfluous water drained from the soil, proper fertilizers applied, in which potash will most likely be needed.

And last, but not least, the spraying pump would seem to be a necessity.

For plums the jarring process may have to be resorted to where curculio are very numerous. There is no excuse for a landowner and his family living wholly on pork and beans for twelve months in the year. Grapes, strawberries, currants, raspberries and blackberries still give ample returns for expended labor in dollars, cents, health and happiness.

REPORT OF DANIEL WILLIAMS, SUMMIT CENTRE, WISCONSIN.

The abundant fall of snow in the winter of 1893, gave sufficient protection to all small fruit from frost, but rabbits injured fruit trees and shrubbery in many localities by eating all tender branches within their reach from the surface of the snow, which, in young orchards, was a serious injury. Also mice working under the snow where grass or mulch were abundant, caused much damage to young trees and berry canes. The last frost in the spring was on May 6th, and the first killing frost was on September 23d and 24th.

The strawberry crop was about an average one in quantity, and of good quality through the season; the weather being such that there was little loss from excessive heat or moisture. The Mount Vernon is our best late berry.

Raspberries were not a full crop, but were of good quality.

Blackberries gave promise of a large crop; but the continued dry weather commencing in July and continuing through the fruiting season nearly ruined the crop, heavy mulching doing but little good. But few blackberries are grown in this locality.

Cherries were a light crop, and are not often found in farmers' gardens.

Currants are not grown by farmers as they should be. They remain a long time on the bush fresh, and are not perishable like berries. Grapes were a good crop, and the season was favorable to mature the new growth of wood for next year's fruiting. The varieties that succeed best here in Waukesha county are Moore's Early, Worden, Concord and Delaware.

Apples were an entire failure, no doubt the effects of the blight of the previous year, as very few blossoms appeared on any trees. The Duchess of Oldenberg being the only variety that bore any fruit and that a light crop. Apple trees here, with most farmers, are a failure, and but few trees are being planted. The prevailing opinion among farmers seems to be that the soil and climate are unfavorable for a tree to live and bear fruit. This is a great mistake. The fault lies entirely with the farmer. The causes of failure it is sometimes impossible to prevent, but usually they may be enumerated as follows:

Selection of varieties not suitable for the locality where planted.

Want of care in the preparation of the ground and carelessness in planting.

Failure to mulch the tree at once after planting and protect the tree from injury.

Neglect to cultivate the orchard until the tree is well established and ready to bear a crop. I have had the best success with trees grown on soil of about the same nature as that in which the tree is planted, and by selecting such varieties as are known to succeed in the locality where planted, success is as certain as in any other business connected with a farm.

The cultivation of berries and grapes is increasing, and more attention should be given to the planting of fruit bearing trees.

REPORT OF W. H. HANCHETT, COMMITTEE ON OBSERVATION, SPARTA, WIS.

As a member of the committee on observation I have noted down a few points during the season which I respectfully submit. The horticultural interests of Monroe county are confined almost entirely to the raising of small fruits, there being over 300 acres in and about Sparta devoted to this industry.

The past season has been the most unfavorable that we have yet experienced. The heavy snow of last winter stayed with us well into March. There being not much if any frost in the ground the snow soaked into it as fast as it melted, leaving the soil well filled with moisture for the early spring. Work of uncovering fruit canes commenced about April 1st, the weather turning very warm for a few days. A heavy snow storm of three days' duration took place on the 20th, 21st and 22d of April, ending with a very hard freeze, mercury registering 10° Fahr.

Fruit buds were to all appearances uninjured and fruit growers commenced to congratulate each other on the fine prospect for the season. A period of cold, wet weather followed, lasting well into May, turning suddenly to very hot and dry weather. A great many of the shoots on blackberry canes commenced to wither and dry up until they presented a sorry sight. A great many reasons were assigned to this by several growers. Some thought that it was caused by the heavy snow and freeze after they had been removed from their winter covering, some that it was the heavy crop of the previous season, some that it was smothering by the heavy covering of snow, and some said it was "mud fever."

We didn't know, but kept our eyes wide open to take observations, and noted the following facts: That plots taken from their winter covering the 1st of April suffered no worse than those uncovered May 1st; that plots covered the first week in October (previous) suffered worse than those covered the last week of that month; that plots which hung loaded with fruit

which they could not mature the year previous, suffered worse than those not so heavily loaded; that plots on sandy soil suffered less than those on heavy clay, and that plots bearing their first crop suffered the least of all, and that on no plot was there a full crop.

Strawberry blossoms began to open on the 20th of May. Michel's Early being the first to show blossoms; Crescent next, followed by Warfield and Van Deman. The weather became very dry and hot as the season advanced. The first strawberries to ripen were Van Deman, which gave their first pick June 17. Three profitable pickings were taken from this variety before any other showed a ripe berry. Warfields commenced to ripen June 21st The severe drought cut the crop short and picking had practically ceased by the 27th of June.

The Raspberry crop was an average one. Varieties giving the best satisfaction were Palmer, Gregg, Nemaha, Marlboro and Cuthbert.

OBSERVATIONS OF W. A. RAMSEY, OF KILBOURN CITY.

Have been laid up with poor health for some time so my report will be deficient. Thermometer went below zero in five of the winter months December being the most changeable. But horticulture is still thriving The rainfall would have been suficient had it been properly distributed. Still the thrifty horticulturalist has prospered in this locality. Still the masses need stirring up, on this subject. Procrastination or neglect to plant and sow is bad. One aim for every young couple when starting in life should be to start in horticulture in a small way, and each year add to it and soon they would have their home surroundings such that their children would have pleasant remembrances of it, not alone in small fruits and flowers, but also in ornamental tree planting. This is as essential on the farm as in city or town. My wife and myself set, in 1868, in the yard and in the street, maple trees; in 1888 we made 55 lbs. of nice sugar, which was a paying investment, for besides sugar we had shade for 20 years besides. It is impossible to estimate the comfort derived from a few house plants; they are a comfort to me now. Even if we only grow Daphodils Hollyhock and Sweet Williams, all are hardy and grow without trouble The more we have of these the more bright spots we will have in our lives.

REPORT OF MRS. D. HUNTLEY, OUTAGAMIE COUNTY, WISCONSIN.

The month of April, 1893, was very unfavorable for farming, the weather very wet and cold, the ground froze nearly every night. On the 20th four inches of snow fell in Appleton, and portions of it remained on the ground ten days. This was followed by rain making the ground so wet that no seeding was done in this month, and but very little if any plowing.

The first of May we had our first fine weather; farmers commenced plowing and the first seeding was done on the 9th. We had no frost after this date. All vegetation was late, and all fruit blossoms especially so.

STRAWBERRIES.

The strawberry crop of 1893 was much less than the growers anticipated. The plants wintered well; but dry weather the last of June and first of July injured them badly. A few berries were sold on the twentieth of June at fourteen cents per box. A few days later they brought ten and twelve cents; and but few home-grown berries were sold for less than eight cents, at any time during the season.

The Wilson, Crescent and Warfield No. 2 are most satisfactory. Many other varieties are grown in this locality, but not in as large quantities as the varieties mentioned.

RASPBERRIES.

Raspberries were not a uniform crop last season; some gardens suffered from blight while others were free from it. More red raspberries are grown here than black. The Marlboro gives better satisfaction than any other red variety. The Cuthbert is grown to some extent but is not such an abundant bearer on our soil as the Marlboro. The first raspberries were picked on the 6th day of July, and on the 10th they sold at 16 cts. per quart, by the case, and sold at that price several days; later they brought 14, 12 and 10 cents; very few were sold less than 10 cents.

CURRANTS.

Few currants are grown in this locality. Last season the crop was very light, and the fruit small compared with previous years. No one thinks of growing currants without using Hellebore for the currant worm. Currants bring a good price in market, usually selling for one shilling per quart; they do not require frequent planting like berries, are more easily picked, and are very profitable, always in good demand in this market,

APPLES AND SOIL.

The soil in this locality is loam, mixed with clay, with red clay subsoil. Orchards on most farms are not protected. Apples were a light crop, but the quality was very good. Tetofsky, Duchess, Utter, Wealthy and Whit-

ing No. 20 are our best varieties. The latter sold readily for $1 per bushel. Tetofsky and Duchess for 60 cents per bushel the first of the season, and later for $1; Wealthy and Utter brought $1.25 per bushel in the Appleton market in October. Orchards were not troubled with insect pests of any kind.

GRAPES.

Many farmers in this vicinity grow grapes for home use, but few grow them for market. Prices were very low the past season; grapes for canning or preserving sold for two or three cents per pound. Fine table grapes in assorted colors and varieties, in eight pound baskets, sold at six cents per pound. The best varieties for this locality are Brighton (red), Niagara and Martha (white), Worden and Concord (black). Vines were not troubled with insects or mildew. In some gardens the Bordeaux mixture was used when the leaves were small. The crop was good.

We have a horticultural society which has been in successful operation twenty years. Our meetings are well attended, and the interest in horticulture is steadily increasing.

REPORT OF J. F. CASE, EAU CLAIRE.

The past season has been one of the poorest I have ever experienced since I have been in the fruit business. The forepart of the season was backward; strawberries were very backward; the first I picked was the Michel on the 10th of June (I have picked the Crescent on the same ground as early as the 25th of May in former years). At that time the sun was so hot that the berries cooked on the vines, notwithstanding the fact that we had plenty of rain.

When I commenced picking raspberries, the 25th of June, I never saw a better showing for a big crop. I thought, and so did several fruit growers, that I was sure of 10,000 boxes, but at the end of the week the showing was quite different, fully one half of the partially matured fruit was cooked upon the canes. I only picked 4,000 boxes, and my experience was the same as every one in this vicinity. Blackberries were about the same as the raspberries. Currants and gooseberries did well and were a good crop. Grapes did remarkably well, also cherries and plums.

The strawberries that are most grown in this vicinity are Bubach, Gandy, Eureka, Lady Rusk, Crescent, Haviland, Michel, Warfield.

Raspberries: Marlborough, Golden Queen, Brandywine, Arctic, a few Cuthberts, but they are not considered hardy.

Black raspberries: Nemaha, Ohio.

Blackberries: Ancient Briton, Stone's Hardy, Erie.

Grapes: Worden, Cottage, Early Victor, Niagara, Morris, Lady, Woodruff, Agawam, Moyer. Many other kinds are grown, but these are the varieties that are the most grown for market.

We had a good fall for ripening all plant wood. I never saw strawberry plants in better shape than they are now, or at least were when the snow covered them; we have about twenty inches of snow. There is a great deal of interest in horticulture here, and our county society is gaining in membership.

REPORT OF J. J. MENN OF NORWALK, FOR 1894.

May 2. Uncovered my blackberries and raspberries.
May 6. Set out blackberry plants.
May 10 and 11. Set out strawberry plants.
May 20. First blossoms on plum trees.
May 25. First apple blossoms.
May 26. Blue berries in bloom.
June 3. Strawberries in full bloom.
June 12. Blackberries in bloom.
June 20 First ripe strawberries; Jessie.
July 9. Last strawberries.
August 1. First blackberries ripe.
August 11. First Tetofsky apples ripe.
August 20. First frost and first Duchess apples ripe.
September 2. First killing frost in valley.

Have one half acre small fruit. Strawberries are Warfield, Jessie, and Michels Early. Promised a large crop, but hot weather spoiled it and had two thirds crop. In new setting, Michels Early made the best stand. Of raspberries I have Gregg for black and New York Thornless for red; gave a full crop; held moisture by manuring heavy about the hills early in the season, pruned severely. Blackberries I have Ancient Briton and Stone's Hardy. They failed to give a good crop as it was too dry. With me Briton is worth five times as much as Stone's Hardy. Not over two acres of small fruit in this township, but farmers are setting more as they find it cheaper to raise it than to have the women go to the woods to pick it. I have 350 apple trees, 125 in bearing, of which there are twenty-five varieties. Crop was light owing to heavy bearing in 1892. Had some Wealthys loaded with fruit that did not bear in 1892. Trees made good growth and ripened their wood well. Prospects good for a large crop of apples in 1894. Insects did more damage than usual. How to get rid of the tree ped-

dler that condemns every tree not grown in New York, is a problem with me. Prices of apples were good, both early and late. Farmers are taking more interest in orcharding than heretofore; many trees will be planted the coming spring on the ridges. I recommend trees from our own state nurseries. Not much blight the past season. Market for small fruits was good, and not enough to supply the home demand. We had good crops of grain and grasses. We have good soil and plenty of pure spring water in which brook trout abound. Our country looks rough, but I, for one, am contented and will not look for anything better.

REPORTS OF LOCAL SOCIETIES.

SAUK COUNTY HORTICULTURAL SOCIETY.

The Sauk County Horticultural Society held its annual meeting at Baraboo, January 9, 1894. The officers elected for the ensuing year are as follows:

President—Wm. Toole, Baraboo.
Vice President—Franklin Johnson, Baraboo.
Secretary—Mrs. Franklin Johnson, Baraboo.
Treasurer—Mrs. E. G. Marriott, Baraboo.

Miss Lucie Strong was elected a delegate to attend the annual meeting of the State Society at Madison, Wis.

MRS. FRANKLIN JOHNSON,
Secretary.

LA CROSSE COUNTY AGRICULTURAL, HORTICULTURAL AND DAIRY ASSOCIATION.

The above named society held five meetings during the past year. All these meetings were well attended, averaging over one hundred persons at each meeting. Never since the organization of the society has there been so much interest manifested as in 1893 The society now numbers fifty members. The following officers were elected at the annual meeting held January 3, 1894. for the ensuing year:

President—Henry Richmond, La Crosse.
Vice President—Wesley Whitbeck, Onalaska.
Secretary— John Hauser, La Crosse.
Treasurer—J. Johnson.
Executive Committee—W. L. Osborne, John Dawson and Mrs. Arthur Tripp.

John Hauser was elected a delegate to attend the annual meeting at Madison, Wis.

JOHN HAUSER,
Secretary.

EAST FREEDOM HORTICULTURAL SOCIETY.

The East Freedom Horticultural society at its annual meeting, January 19, 1894, 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 36 members; and quite an interest is being taken in the meetings, which are now held every two weeks.

CHARLES HIRSCHINGER, *Secretary.*
Baraboo, Wis.

WAUPACA COUNTY HORTICULTURAL SOCIETY.

The Waupaca County Horticultural Society held its annual meeting at the engine rooms in Weyauwega, January 12, 1894, for the purpose of electing officers and transacting such other business as come before the meeting.

There was a good attendance and a lively interest taken by all present.

Apples were shown by some of the members in a good state of preservation.

The following officers were elected:

President—Hon. E. W. Brown.

Vice president—W. W. Crane.

Secretary—Fred A. Harden.

Treasurer—A. Smith.

Executive committee—Wm. Springer, Wm. Masters and J. Jenney.

Wm. Springer, delegate to state meeting.

FRED A. HARDEN,
Secretary.

OMRO HORTICULTURAL SOCIETY.

The Omro Horticultural Society is still in a prosperous condition. We hold monthly meetings at the residence of members, and they are well at-

tended and a marked interest is manifest in the meetings. The society numbers 40 members. The present officers are:

President — W. E. Thrall.

Vice President — J. L. Fisk.

Secretary — Mrs. Jos. D. Treleven.

Treasurer — Mrs. L. Laiten.

Executive committee — Mr. and Mrs. O. W. Babcock, and Mr. and Mrs. L. C. Booth.

Our delegate to the convention is Mr. J. L. Fisk, who will take part in the discussions.

MRS. JOS. D. TRELEVEN,
Secretary.

REPORT OF THE GRAND CHUTE HORTICULTURAL SOCIETY.

In this annual report it is with pleasure I can say that the interest taken in horticulture in this locality shows no abatement, but evidently appears to be making steady growth each year.

Although winter apples have again been a failure there seems to be an untiring effort to plant more hardy and promising varieties, thus hoping to obtain orchards of the quality best adapted to this locality.

The growing of small fruits is largely on the increase. The strawberry season was of short duration on account of the dry weather. Raspberries exceedingly fine and grown in large quantities by some, while others in the same locality complained of a short crop and not of the best quality. Prices hold good to the last of the picking.

Grapes matured earlier than usual, and were mostly out of the way of the early frosts. The low prices were somewhat discouraging.

The surroundings of homes are becoming more and more beautified with fruits and flowers.

The love of horticulture is growing in the minds of the children, as is shown by the planting of flowers and trees upon the school grounds, etc. The observance of Arbor Day is becoming a popular and beautiful custom, enjoyed by older people as well as children.

Our meetings which are held quarterly have been largely attended and have had several accessions to the membership. Not the *least*, and I am not sure but it should be put the very *first* of the benefits accruing to the community, is the social, friendly feeling evolved by these periodical meetings of the society.

A comparison between a community where the families dwell in a state of isolation, having no interest in anything outside of their own boundaries, and one like our own where we are in the habit of meeting regularly on terms of friendship and good will, exhibiting the best side of our nature

and cultivating fraternal feelings; the mere comparison tells the whole story.

Our annual meeting was held on Thursday, January 4, 1894, and resulted in the election of M. B. Johnston, president; C. A. Abbott, vice president; A. A. Winslow, treasurer.

MRS. C. E. BUSHNELL,
Secretary.

WOOD COUNTY HORTICULTURAL SOCIETY.

I submit the following report of the Wood County Horticultural Society:

A meeting was called for January 11th, 1894, and a program prepared. The meeting convened in city hall and was addressed by B. S. Hoxie, after which a paper was read by L. H. Read, entitled, "Can We Grow Fruit in Wood County?" In the afternoon Mr. J. A. Gaynor led a discussion upon the question, "Can the Blueberry be Cultivated?' after w hich an organization was effected and the following officers elected:

President—A. S. Robinson, Centralia.

Vice-president—Peter Brown, Centralia.

Secretary—L. H. Read, Grand Rapids.

Owing to the severity of the weather the attendance was small, and it was thought best to adjourn until the evening of January 30th, at which time the Farmers' Institute was to be held.

On the evening of January 30th a large audience of nearly 1,000 listened to a fine program prepared by the school, and to addresses by Mr. J. A. Gaynor and B. S Hoxie, and adjournment was had to the close of the Farmers' Institute on the next afternoon, at which time we again met and the organization was completed by the adoption of a constitution and the election of Mrs. L. W. Quimby as treasurer and W. Scott, R. A. Havenor and J. L. Johnston as members of the executive board.

It was voted to hold regular meetings on the last Friday of each month at 2 o'clock P. M. L. H. Read was elected as delegate to the state meeting at Madison.

L. H. READ,
Secretary.

REPORT OF THE EAU CLAIRE HORTICULTURAL ASSOCIATION.

President—Z. B. Stillwell, Eau Claire.

Vice-president—James Bonell, Eau Claire.

Secretary—H. Burton Ho tchkiss, Eau Claire.

Treasurer—J. F. Case, Eau Claire.

During the past year this association has held eleven regular monthly meetings and one special meeting, all being quite well attended.

The membership has been increased by ten new members making now thirty-six.

Our meetings have been qute interesting as the reports of the varions committees bring out new thoughts and new hints on all topics common to the horticulturist, bee keeper and gardener and in their seas ns fine specimens of fruit and berries were exhibited.

H. BURTON HOTCHKISS,
Secretary.

CALUMET COUNTY HORTICULTURAL SOCIETY.

Horticulture in this county is a side issue. Nearly every farmer has spent more or less money and time trying to grow an orchard, which in the majority of cases (excepting such as where proper care was taken in the selection of very hardy varieties), has proven a failure, In some cases probably for the want of care at the time of and especially after planting. But we have come to the conclusion that by obtaining more knowledge on the subject, and using more care in the selection of varieties; then by doing the right thing at the proper time, we can see no reason why we can not raise fruit here.

For that purpose we have recently organized a society at Hilbert, to be known as the Calumet County Horticultural Society, with officers as follows:

President — E. S. West.
Vice President — C. P. Crawford.
Secretary — G. A Cressy.
Treasurer — J. S. Dixon.

G. A. CRESSY, *Secretary*,
Hilbert, Wis.

FREMONT HORTICULTURAL SOCIETY.

We are still at work. Our meetings are quite interesting, and, we believe, profitable. True, we keep having disappointments, many of our favorite seeding apples going back on us, as in other counties. But we are still ready to bet on Waupaca county for good fruit, and are still hopeful.

At our last meeting, held December 23d, the following officers were chosen for the coming year:

President — C. F. Eaton.

Vice President — Paul Scheisser.

Secretary — J. Wakefield.

Treasurer — Jacob Steiger.

Executive Committee — W. A. Springer, John Ploeger, G. W. Brooks.

Delegate to state society — J. Wakefield.

We have about twenty members, and quite an interest is taken in matters pertaining to horticulture.

J. WAKEFIELD,
Secretary.

EVANSVILLE HORTICULTURAL SOCIETY AND IMPROVEMENT ASSOCIATION.

Our society meetings have always been of great interest. We have money in the treasury, and some of us are doing our best to show to the world that horticulture is worthy of a high place in our studies.

WALTER MCFARLANE,
Secretary.

WAUPACA HORTICULTURAL SOCIETY AND IMPROVEMENT ASSOCIATION.

Annual meeting was held January 13, 1894, at which time the following officers were elected for ensuing year.

President — F. M. Benedict.

Secretary — O. Decker.

Treasurer — Mrs. M. R. Baldwin.

A. D. Barnes was elected delegate to the meeting at Madison and O. Decker, alternate.

T. RICH,
Secretary.

The following report of the aforesaid society was presented by the delegate to state society, A. D. Barnes:

We are pleased to say our society is in a flourishing and prosperous condition. We collect 25 cents annual dues. We hold basket picnics in groves at various seasons which we term strawberry, Blackberry, grape or apple picnics according to the fruit that is ripe at the time. We advertise these picnics and hold them when fruits are in abundance; this stimulates

much encouragement. We always discuss the culture, merits and demerits as well as the best system of marketing said fruits. In winter we hold indoor picnics, have papers, discussions and music.

Your delegate inaugurated the idea of planting fruit trees in the streets and roadsides, and this enthusiasm has been carried into our meetings and we now have several hundred fine apple trees planted and growing in the roads in place of common shade trees, and be it said these trees are respected by the boys and traveling public; though the fruits are often sampled yet I have never known a tree to be harmed or broken. We have some fifty members and have splendid meetings.

It is our determined purpose to extend our picnic meetings farther out into the country and thereby secure many more farm members.

JANESVILLE HORTICULTURAL SOCIETY.

Informal meetings have been held during the past year by the few who have kept together and talk over the days when so many of our old members were interested in horticulture.

The horticultural exhibits made at Rock County Fair were largely by members of the Janesville society, and were very good indeed.

The annual meeting was held on October 30th, 1893.

Resolutions of respect were adopted on the death of D. E. Fifield, one of our oldest and best members, and for many years the treasurer of the society. Mr. Fifield was one of the original members and always took great interest in the work. The following officers were elected for the year 1894:

President—Geo. J. Kellogg.

Secretary—E. B. Heimstreet.

Treasurer—Dr. J. B. Whiting.

Messrs. Geo. J. Kellogg and E. B. Heimstreet were appointed as delegates to the meetings of the State Horticultural Society and any other meetings held in 1894. Membership at this time, twenty.

E. B. HEIMSTREET,
Secretary.

RIPON HORTICULTURAL SOCIETY.

The annual meeting of the society was held January 17, 1894, a large number being present. Several new members joined the society. We now number 38 active members.

A committee was appointed to prepare subjects for discussion, appoint speakers, etc., and we hope to get both pleasure and profit from our monthly meetings the coming year.

Following is a list of officers for 1894:

President—L. G. Kellogg.

Vice President—W. T. Innis.

Secretary—A. S. Crooker.

Treasurer—E. Woodruff.

A. S. CROOKER,
Secretary.

MONROE COUNTY HORTICULTURAL SOCIETY.

Two meetings were held during the past year. The first, a special business meeting, was held at Sparta, June 17, 1893. The object of this meeting was to secure united efforts on the part of the several fruit growers to secure better facilities for shipping the coming crop to maintain uniform prices for picking, and to establish, from day to day, uniform billing prices for the crop. With these objects in view the following committees were appointed:

Committee on transportation — C. E. Tobey, W. H. Hanchett and A. H. Merrill.

Committee on billing prices for fruit — L. S. Fisher, C. E. Tobey and W. H. Hanchett.

The benefit derived from the united action of fruit growers can hardly be overestimated, as the committee on transportation were able to get better facilities for handling the crop than could possibly have been secured by individual shippers.

The committee on prices for fruit established a bulletin board at the post office, on which the suggested price of fruit for the day was posted each morning, together with condition of the market, position of refrigerator cars to be loaded, and all other items of interest to growers.

One season's trial of this plan has convinced most fruit men of this vicinity that their interests are mutual, and that strife and price-cutting don't pay.

The annual meeting of the society was held in the city hall at Sparta, January 26, 1894, at which the following officers were elected:

President — L. S. Fisher

Vice President — Z. K. Jewett.

Secretary — W. H. Hanchett.

Treasurer — Edwin Babcock.

Chairman Executive Committee — C. E. Tobey.

Chairman Committee on Finance — G. A. Freeman.

Owing to the general hard times no program had been prepared and the attention of the meeting was confined to the necessary business, with a few short discussions on the benefits to be derived from closer organization of fruit growers in harvesting and disposing of a fruit crop

W. H. HANCHETT,
Secretary.

KILBOURN CITY HORTICULTURAL AND IMPROVEMENT SOCIETY.

CHESTER W. SMITH, President.

The society held regular meetings during the spring and early summer of 1893, at which the subject of botany was taught, papers upon kindred topics were read and discussed, besides much information interchanged upon the subject of horticulture. The season closed with the society out of debt and money in the treasury. The first meeting for 1894 will be held on Saturday, March 24.

At this meeting one feature of advantage to all will be sending in clubs for flowers and garden seeds, and at later meetings for plants. Although the list of members is large the attendance at the meetings is often small, but oftener very interesting and profitable. The society takes an active interest in Arbor Day, and the result of their work is noticed in the place.

SECRETARY.

LANCASTER HORTICULTURAL SOCIETY.

Our society has held no regular meeting this winter though it still exists. What kind of a report do you want? What are the items usually given? We want our books from the horticultural society all the same.

CHAS. L. HARPER,
Secretary.

THORPE HORTICULTURAL SOCIETY.

Our society has not accomplished much the past year, as the membership was small, but we have now thirty-seven members. The last meeting was very interesting. The members freely entered into discussions on the sev-

eral topics. There are several essays to be read at our next meeting. I felt rather discouraged for a while, but it looks now as though we might accomplish something. The books received have all been distributed. Think we will send a member to the next annual state meeting of the society.

S. GORMAN,
Secretary.

REPORT OF DELEGATE FROM RUSHFORD HORTICULTURAL AND IMPROVEMENT SOCIETY.

A. A. PARSONS, Eureka.

The Rushford Horticultural and Improvement society was organized February 19, 1893. We have forty members; nearly all are interested. We meet the first Saturday of each month. There was put out by our society in the spring of 1893, in addition to 143 acres we had at that time, thirteen acres of strawberries of the following varieties: Warfield, Crescent, Jessie, Wilson, Michel, Beder Wood; twelve acres raspberries, comprising Marlborough, Cuthbert, Gregg, Nemaha and Ohio; four acres Ancient Briton blackberries; seventy-five acres grapes; one half acre currants; also 4,500 apples trees. All of the small orders given previous to the organization of our society were for varieties not adapted to our location, but since then the orders have been for Yellow Transparent, Duchess, Wealthy, McMahan, Longfield, Hibernal, Scott's Winter; also for 125 cherries, Early and Late Richmond; twenty plum trees and 120 Whitney's No. 20 crab apple; in addition to these there were set, by members of our society on the fruit farm near Rochester, Minnesota, six acres strawberries, three acres raspberries, 1,000 Concord Grapes, 400 apple trees, 150 crabs, 200 cherry trees. Nearly all of the above varieties that were properly set and cared for did well; 104 fruit trees failed to grow, and up to January 1, 1894, there had been seventy apple trees destroyed by rabbits and mice; they were unprotected by laths. Spraying was only done on cherries; on grapes for the slug and on gooseberries for mildew. It was a success where tried.

Strawberries wintered well but from lack of fertilization were only one fourth of a crop, except Beder Wood which produced a good crop of fine berries.

All red raspberries, except old pieces of Cuthberts wintered well and yielded a good crop; all of the old Cuthbarts, not protected, winter killed badly while all of those laid down and covered with soil were badly injured where the soil came in contact with the cane.

Black raspberries that were protected yielded a good crop, those not protected were badly injured. The same may be said of blackberries. Currants, were a good crop as well as gooseberries that were on high ground. Of apples the Tetofsky, Hass and North Western Greening were good, all other varieties were poor. Prices for all kinds of fruit was satisfactory. Nearly all of the raspberries and blackberries were laid down last fall and covered with soil.

I think there will be an increased amount of spraying done next season. We think the prospect for the honest and careful horticulturist is good; and we hope to profit by it and be a benefit to the community.

AWARD OF PREMIUMS.

Award of premiums at winter meeting held at Madison, Wisconsin, February 8 and 9, 1894:

Largest and best collection of apples, Chas. Hirschinger, 1st premium	$10 00
A. L Hatch, 2d premium	5 00
Best four varieties, quality and hardiness, A. L. Hatch 1st premium	4 00
C. Hirschinger, 2d premium	2 00
Best three long keepers, A. L. Hatch, 1st premium	4 00
C .Hirschinger, 2d premium	2 00
Best plate Bell Pippin, C. Hirschinger, 1st premium	50
Best plate Walbridge, A. A. Parsons, first premium	50
C. Hirschinger, 2d premium	25
Best plate Red Romanite, C. Hirschinger, 1st premium	50
A. L. Hatch, 2d premium	25
Best plate Haas, A. L. Hatch, 1st premium	50
Best plate Tallman Sweet, A. L. Hatch, 1st premium	50
C. Hirschinger, 2d premium	25
Best plate Fameuse Sweet, A. A. Parsons, 1st premium	50
A. L. Hatch, 2d premium	25
Best plate McMahan, B. L. Hatch, 1st premium	50
Wm. A. Springer, 2d premium	25
Best plate Perry Russett, A. A. Parsons, 1st premium	50
C. Hirschinger, 2d premium	25
Best plate Newell, A. L. Hatch, 1st premium	50
C. Hirschinger, 2d premium	25
Best plate Golden Russet, A. A. Parsons, 1st premium	50
Best plate Wealthy, Chas Hirschinger, 1st premium	50
Best plate Longfield, A. L. Hatch, 1st premium	50
Best plate Penan Ree, W. A. Springer, 1st premium	50
Chas Hirschinger, 2d premium	25
Best plate Plum Cider, A. L. Hatch, 1st premium	50

Best plate Northwestern Greenings, A. A. Parsons, 1st premium	50
A. D. Barnes, 2d premium	25
Best plate Wolfe River, W. A. Springer, 1st premium	50
Best plate Alden, W. A. Springer, 1st premium	50
Best plate Arista, A. J. Philips, 1st premium	50
Best plate Helen, W. A. Springer, 1st premium	50
Best plate Seedling Rushford, A. A. Parsons, 1st premium	50
Best plate Mary, W. A. Springer, 1st premium	50
Best plate Calender Winter Crab, J. Wakefield, 1st premium	50
Best display of potatoes, L. L. Olds, 1st premium	5 00
Purdy & Read, 2d premium	2 00
Best Wisconsin Seedling World's Fair, L. L. Olds, 1st premium	3 00

WM. A. SPRINGER,
HENRY W. ASH,
R. J. COE,
Committee.

In Memoriam.

Dr. Joseph Hobbins.
J. M. Smith.
George H. Robbins.

DR. JOSEPH HOBBINS.

By B. F. ADAMS.

Again death has entered our ranks and taken an honored and highly esteemed member of our society, Dr. Joseph Hobbins of Madison. He was born in Wednesbury, England, Dec. 23, 1816. In youth his advantages for obtaining an education were superior and well improved. Having graduated from Queens college he studied medicine at Guys, a renowned school in London. Having received his diploma and license as a physician there, he still further qualified himself in the hospitals of Edinburg, Dublin, Brussels, Paris, and first came to the United States to study methods practiced in our hospitals. Favorably impressed with this country, and having married, in 1841, an American lady in London, he returned and commenced practice in Brookline, Mass. After three years residence there, ill health induced him to return to England. After some time spent in traveling in his native land and on the continent of Europe, he settled in his native place and successfully practiced medicine eight years. But he had longings for America; and in 1854 he again sailed for the United States, with his family, and came to Madison, Wis., where he resided until his death. Dr. Hobbins was not only a skillful physician, noted in his profession, kind and sympathetic in his practice, but he was one of the best types of good citizenship; he possessed cultivated tastes; he loved art, literature and horticulture. In this latter field, we of the State Horticultural society especially recognize his worth and hold him in grateful remembrance. Amidst the cares of a laborious profession, he took time to devote to horticulture. The writer remembers a visit to his garden, more than thirty years ago which was an object lesson, showing the quantity of fruit and vegetable products that could be grown on a small area. His Wilson strawberries especially, grown on the hill plan, were a marvel of productiveness, and his grapes equally promising. Clean culture was his motto; and he practiced it.

He manifested a lively interest in organizing a local society of kindred spirits at this capital, The Madison Horticultural society, served it as secretary, afterwards as president thirteen years. During this period this society held annually two and sometimes three exhibitions of fruits and flowers in the assembly chamber of the capitol. The seeds were then sown that have produced results in later years. He identified himself with our society when we were few in numbers, was chosen president and served five years. Some of our members are yet living witnesses of his efficiency in that position. His executive ability, his urbanity and gentlemanly deportment admirably fitted him to preside

over a public body of this character. He seemed to imbue every member with a portion of his own zeal and enthusiasm in all matters relating to horticulture. Increasing business cares prompted him in 1870 to resign his office; but his interest in the work and prosperity of the society continued while he lived. Dr. Hobbins was a true lover of his adopted country, broad and liberal in his ideas, kind and genial in disposition, he dispensed hospitality with a liberal hand. Believing in a well ordered home he endeavored to make it a centre of attraction and love and aimed to make the surroundings worthy of such devotion. His life was replete with useful works that bless mankind. May its influence long remain in the professional, social and literary circles in which he moved. The friends of horticulture old or young can contemplate it with benefit in the time of budding trees and flowers, or w en they are clothed with full summer verdure, and when autumn tints, harbingers of ripening fruits, cover orchards, vineyards and fields.

J. M. SMITH.

By B. S. HOXIE.

Not many days after the close of the annual meeting of this society last February, the word was passed by wire, letter and the public press, "J. M. Smith, of Green Bay, died at his home, February 20, 1894." Similar words meet our eye every day as we look over the papers which lie on our tables. Some friend has passed away, but when our kith and kin, those we have long associated with, fill out the measure allotted to them and pass to the other shore, we pause for a moment while we contemplate life's mysteries and death's certainties. In the brief sketch which I shall here present of one who was so long an honored member of this society, I shall make no attempt at a biography of his life; abler pens than mine will perform that task. For fifteen years he filled the chair as its president, and as one who held intimate relations with him for a por tion of that time as secretary, it may be that some word of mine may be proper for this memorial page.

Mr. Smith was born December 13, 1820, and died February 20, 1894, thus completing his earth life in the seventy-fifth year of his age. Born and raised on a farm it was not strange that he chose horticulture and the market garden as a profession. Circumstances placed him in Green Bay, but he so far controlled circumstances that he not only built up a happy home, but amassed enough of wealth to take life at an advantage as he neared its close. Mr. Smith was keenly alive not only to the agricultural interests of his own state, but he was a close observer of men

and methods, and in his trips of business or pleasure to other states of the union the opportunity for observation and comparison afforded to him many lessons which served useful purposes for his own work, and also to enrich and give character to articles from his pen in the various agricultural papers to which he was a contributor.

He was always anxious that Wisconsin should take rank as first in agricultural education, and as president of the State Horticultural Society, signed a call with a few other prominent men – who were equally interested — for a convention to meet in Madison to discuss the propriety of asking legislative aid for the establishment of an agricultural college. Special friends of agriculture and horticulture convened on this call; and none were more pleased with the unanimity of the sentiment expressed in favor of the movement than Mr. Smith.

The burning of Science Hall early in the winter of the same year necessitated the rebuilding of the same as soon as possible, and in a conversation with him at this time, he declared that fate seemed to be against us, "for we cannot now have our bill introduced at the present legislature, for it will surely be defeated."

A law was, however, enacted making provision for farmers' institutes.

Mr. Smith, always hopeful and willing to take the best thing attainable, at once entered heartily into the work and gave much of his valuable time to assist in lectures and essays from the first inauguration of the work up to the time of his death, and though he did not live to see the consummation of his ideas in an agricultural college, he did live to see Wisconsin take rank as second to none; and first in many respects in research through the agricultural department of the state university.

The writer was so intimately acquainted with Mr. Smith that he can only speak of him as a friend, but he was friend to all who knew him. Cast in a mould which hated shams and hypocrisy, right and justice stood first and foremost. He never asked a man about his creed or politics, but all true men were his brothers. Generous to a fault, his house was always a home to his friends; and the annual gatherings at the strawberry festival where long tables were spread under the trees in his own lawn were always memorable occasions, for the renewal of old friendships and forming new.

Mr. Smith, during his presidency of the State society, was often a delegate to other societies, and at the New Orleans exposition was assistant commissioner from this state with Mr. Holten of Milwaukee, as principal, and as such, the management of the horticultural exhibit was under his immediate charge, and by his forethought and correct judgment Wisconsin came off with lasting honors for her horticultural products, and no man did more to honor horticulture at home or abroad than he, for his faith in Wisconsin as a horticultural state was unbounded, and this faith was manifest by his works — he not only dignified his profession but made the soil yield him valuable returns. It was not his am-

bition to possess the largest market garden, but to get the most out of it, or, in other words, to test the possibilities of an acre. We can offer no higher eulogy to a man than to say he was kind as a friend, generous and loyal as a citizen, devoted as a husband and father, and a lover of mankind; and such was the character of him whose memory we here perpetuate.

GEORGE H. ROBBINS.

George H. Robbins, whose death occurred at Platteville, Wis., April 17th, A. D. 1893, was the youngest son of Hon. Hammer Robbins, who was one of the early settlers of that place, and whose early social and legislative influence had much to do in shaping the railroad and normal school interests of that city. He owned and improved a large farm within the city limits, where for nearly half a century he ruled his family in love, and kept himself in touch with the advanced thought of the times in political, agricultural and social issues. The subject of this sketch was the youngest, and, with the exception of one, the last remaining member of the family. He inherited the homestead, and, having a love for horticulture, turned his attention to the raising of small fruits. He had just reached the dawn of success, when he was stricken down with a disease of the bone; he suffered very much for ten months ere death came to his relief. He left a widow and an adopted child. His widow, Mrs. Lelia Robbins, is a member of the State Horticultural Society and is managing the business so successlully inaugurated by her late husband. His memory will be cherished by the members of the horticultural society with whom he had associated; and all regret his untimely death.

AN INTERESTING LETTER FROM NEW MEXICO.

By CARL H. POTTER.

LAS CRUCES, N. M., Jan. 8, 1894.

Having been requested to write an article for the information of my friends, descriptive of New Mexico, from facts ascertained mostly by personal experience, I shall undertake the task and do the best I can from my limited opportuities.

Leaving home and friends at Wyoming on November 15th last, I crossed Iowa and Nebraska and on the second morning found myself still ascending to a higher altitude, and crossing the northeast corner of Colorado toward Denver. During the entire trip to Denver and south half way to Pueblo, snow continued to fall and the entire aspect of the country was that of winter cold and frigid. As we crossed the high water-shed between the head waters of the Platte and the Arkansas rivers the snow ceased to fall, although the air remained so thick that I found it immossible to see much of the grand scenery so near us on the the west. At Pueblo I saw for the first time numbers of our dusky Mexican cousins — those repres ntatives of a conglomerate mixture of ancient Aztec, Toltec and Pueblo Indians with Spanish, cow-boy, desperado and other strains of blood of all kinds and grades. Crossing the Colorado state line into New Mexico at an altitude of 7,622 feet in the middle of the Raton tunnel, we soon emerged into the full glare of day and went plunging down into the heart of the "Sunshine State." This territory is nearly 400 miles long north and south by about 300 in width. Its principal topographical features are the Rio Grande valley extending from north to south through the middle of the state; the San Juan in the northwest corner, and Rio Pecos extending north and south in the eastern side, the three principal valleys separated by mountain ranges.

Las Vegas lies east of the principal mountain range at an elevation of 6,298 feet.

As its name implies, it is a "City of Meadows," being situated in a small valley in the mesas or plateaus. Cattle ranching or stock growing is the principal industry of the section. The sheep industry has been very great and the railroad warehouses were filled with fleeces and hides of sheep and cattle. The old town on the west side is as typical Mexican city as is in the territory. On the court house one reads: "Casade Cortes," house of the court. All of the courts in the territory employ Spanish interpreters. East Las Vegas contains a handsome school building, the first in the territory, erected by public taxation. On the opposite side of the range lies a city of about the same size, 6,000

inhabitants, which contains as much historic interest as any in our union. This ancient city is still to a very great extent the sama old prehistoric town of Santa Fe del San Francisco. Here among a population three fourths Mexican, one feels like saluting every white person he meets. The streets are narrow and abruptly irregular. The houses are mostly all built adobe, or dobe, as it is popularly called. It is in such a building that the state officers are located and it was there that General Lew Wallace wrote that popular book, "Ben Hur." Climbing the foot hills at the east of the town one suddenly finds himself in the ramparts of old Ft. Marcy. After the first emotion incident to the spot hallowed by the life blood of brave men, one turns and views a grand panorama of mountain and valley. On every side but one foot hills and mountains crowd about, mounting one above the other, all covered with evergreens, cedar and pine or pinion, while away off to the south stretches the narrow but beautiful valley of the Rio Santa Fe. Out on the mesas to the left lies the penitentiary, and beyond the United States Normal School for Indians.

The soil in the valley is of a reddish cast and filled with small rock fragments and pebbles. It is said to be quite fertile when it can be irrigated. But the water supply is sufficient for only a few acres, and even that is poorly cultivated. The city exists upon money brought in by the territorial and government officials and troops and by invalids. Santa Fe is justly considered a grand health resort for many invalids. Her pure, clear water, dry sunny air, and her altitude of over 7,000 feet are a great help to many pulmonary troubles. Albuquerque lies on the Rio Grande a little northwest of the center of the territory, at an altitude of 4,949 feet. It is a typical American town of 6,000 or 7,000 people, and is the only such city in the territory. Its growth is largely due to railroad influence, it being the junction of the A. T. & S. F., with the A. & P. systems. It is a good fruit section and many vegetables are grown, but there is comparatively little of the valley land under cultivation. In conformity with every other town, it is now a dull place. From Albuquerque to Dona Ana, a distance of 200 miles south, there is practically no arable land. At this point the valley broadens to several miles in width, and from here to the mountain pass at the Mexican line it is known as the Mesilla valley. This is the great granary of the state. It extends for a distance of about 40 miles up and down the river and has an average arable width of about two miles. This would give an area of 80 square miles, equal to about two and one fourth townships in an agricultural county, But probably not more than one half of this is actually under cultivation. And yet on the other hand, if an abundance of water could be had and it were applied in a systematic manner the above area could be easily doubled. The irrigating ditches are owned by the communities and the water supervisors or "myradomas" are

elected by the land owners. No water rent is paid, but all users of water are compelled to help clean the sediment from the ditches, or to pay for the same.

The Rio Grande is such a river as the Missouri, only the mud and treachery of the latter should be multiplied several fold. The water contains an immense amount of sediment, which is disadvantageous in many ways, but this is more than compensated by the great fertilizing properties that it has. In general, no additional manure is given to the land, though vegetables and some other crops would be benefited thereby. The water also contains a great amount of weed seeds, which, under the poor cultivation of the natives, render this the most weedy section of the earth the writer ever saw. Sand burrs, cockle burrs, etc., and sun-flowers! Yes, sunflowers, here, there and everywhere that water has been or rain has fallen! There are many large orchards here, consisting of apples, peaches, plums, prunes, pears, quinces, apricots and nectarines. Cherries do not prosper. Small fruit is not grown, except strawberries, and as these lie on the ground and are watered with muddy water they are not much of a success. The best small grain in the world is grown in the valley. Here is located the Agricultural and Mechanical College, which institution is doing really good work, considering that it has been in existence only three years. Prof. Blount of the Experiment Station in connection, is growing hundreds of varieties of cereals and grasses, very many of which were originated by him. They have a fine, large orchard of peach and other fruit trees.

Never before have I seen such magnificent growths as fruit trees make here. I have seen peach trees set but three years that were six or eight inches in diameter. The Codling moth showed itself for the first time last season, so now we shall have wormy apples unless the trees are properly sprayed. The plum curculio has not yet appeared. A great many grapes are grown and of many varieties. They are not trellised but are grown on a stump vine about eighteen inches high, from which many laterals project. They are usually hilled up with earth in the winter. Undoubtedly the future industry of the valley will be fruit growing. The poultry yard and the apiary will also command a goodly share of attension, and of course grain, alfalfa and vegetables will continue to be cultivated. Alfalfa has grown in some places continuously for fifty years, and is apparently in as good condition as ever—owing probably to the large amount of sediment in the water. The American civilization practically dates from the advent of the railroad ten years ago. Con sidering this fact the country has certainly made good progress. The broad plains of which the territory very largely consists usually furnish pasturage for immense herds of cattle and sheep, which make excellent beef and mutton. There is a great abundance of minerals and ores; but excepting silver the mining of them is poorly developed. Coal is mined

in considerable quantities and is almost entirely in the control of the railroad companies. Good land can be bought here at an average price of about $20 per acre. A seeding of alfalfa adds as much more to the price.

In keeping with the whole Rocky Mountain country, there is here a great diurnal range of temperature. There are two contending features to produce this. Frst: a low latitude and dry air with a bright sun makes the days warm and pleasant; but at night the high altitude reduces the temperature very greatly. This morning the temperature was 18° F, and at 1 P. M. nearly 60°. Probably our average diurnal range is about 25° and the mean temperature for this month something above freezing. Occasionally a northwest wind brings us a moist atmosphere, but it lasts but a day or two and leaves snow only on the mountain tops. There has been no day since I came here that the sun has not shown brightly during at least a considerable portion of the time. We have had two light rains and two light sand storms during the same time. The latter come mostly during the spring months. The ground freezes but little and so permits irrigation and cultivation to continue throughout the entire year. Poisonous insects and reptiles exist, both in number and venom, vastly more in the minds of northern people than in reality. But no wonder northern people think this a peculiar country. The early settlers were compelled to go into the ground for wood, mesquit roots, and onto the hills and mountains for water. Even the streams in the valley run along the higher points, and one has to go up hill to cross them. The climate is warm and yet cold. We have no blizzards, or northers, but the tail ends of these storms swing around the mountains on the east and sometimes bring us a shower from the south. In isolated places both in the valleys and in the mountains there are small tracts under cultivation, some under irrigation, but those in the mountains usually depend upon the natural precipitation.

In the southwest portion of the territory there is some attempt made to develop a water supply, and in the northwest, the San Juan country, there exists, perhaps, the best general agricultural section in the territory. But it is altogether too far from a railroad for the average progressive, wide-awake American to be contented with. In the east at Roswell there is a small amount of good irrigated land, and in the southeast, in and about Eddy, is located that gigantic irrigation enterprise on the alkaline Pecos river. Most of the people who have come to that place are from the eastern states and from Europe. Here in New Mexico it is considered the most gigantic and iniquitous of all the swindles that ever disgraced the territory. The average New Mexican, owing to his contact with scheming politicians, jobbers and financial swindlers, is about the most wary game to snare that exists. Had they had less cause for this,

the territory would today be in a much more prosperous condition. To most people the small amount of arable land here, the large percentage of Mexican population, and the scarcity of water at times for summer irrigation, would be features objectionable enough to induce them to seek more agreeable associations and surroundings a little further north.

The following is the list of names of gardeners and fruit growers that were attached to a petition to the society for the establishing of an experiment or trial station at Omro, Wisconsin. The same endorsed by John L. Fisk, delegate to the winter meeting, February, 1894. The report of trees now planted and to be planted, also small fruit acreage is given of those who signed the petition:

No.	Growers of fruits of all varieties.	Fruit trees now set.	Will set the coming spring.	Acres of small fruit.	Post Office.
1.	Parsons and Loope	4,500	25 acres.	40	Eureka.
2.	C. E. Floyd	100	25 acres.		Eureka.
3.	J. J. Baldez	125	25 acres.		Eureka.
4.	Walter Carley	70	1½ acres	2	Eureka.
5.	Robt. Blair	15	25 acres	3	Eureka.
6.	H. H. G. Braske	92	40 acres.	5	Eureka.
7.	J. M. Franklin	25		¼	Eureka.
8.	E. Harris	1,100	1½ acres.		Eureka.
9.	J. J. Calhoun	40	3 acres.	6	Eureka.
10.	M. G Shelton	125	½ acre.	¾	Omro.
11.	J. S. Brooks	200	2½ acres.	4	Omro.
12.	J. A. Fridd	300			Karo.
13.	J. S. Williams	50			Eureka.
14.	H. P. Baiden	50			Eureka.
15.	W. W. Noble	40			Eureka.
16.	D. F. Hanson	14			Eureka.
17.	Geo. W. Brooks	125			Omro.
18.	L. E. Chapelle	30	15 acres.		Eureka.
19.	A. Havens		1 acre.	6	Eureka.
20.	W. W. Brown	50	6 acres.	30	Eureka.
21.	James Hess	40	25 trees.		Eureka.
22.	C. B Cope	50		4	Omro.
23.	P. Renlin	250	120 acres.		Eureka.
	Total	7,461	381½ acres.	101 acres.	

No.	Growers of fruit of all varieties.	Fruit trees now set.	Acres of small fruit.	Fruit trees will set.	Small fruit to be set.	Post Office.
24	August Buchlattz ..	100	.....	.....	....	Eureka.
25	C. A. Parsons	500	7	....	7	Eureka.
26.	Parsons & Loope....	.....	.....	300	.....	Eureka.
27.	E. O. Loper	60	.....	25	....	Eureka.
28.	C. H. Harvey	100	.....	100	.....	Omro.
29.	H. H. Hess.	50	.....	50	.....	Eureka.
30.	L. M. Butler.....	40	½	12	.....	Eureka.
31.	H. Floyd	500	5	50	1	Eureka.
32.	A. A. Stone	150	20	25	6	Eureka.
33.	I. Delaney	150	5	25	2	Eureka.
34.	J. W. Hoaglin.... ...	200	10	25 or 50	2 or 3	Omro.
35.	V. H. Wood	100	3	100	4	Waukon.
36	N. P. Pierce.....	100	4	50	4	Oshkosh.
37.	A. A. Sage	200	1	.....	....	Omro.
38.	W. S. Jennings... ...	20	¼	24	¼	Lisbon.
39.	Dennis Hart.....	25	¼	....	1	Eureka.
40.	J. K. Terrell	3,000	4	100	3	Oshkosh.
41.	E. R. Leoker Jr.....	300	12	200	5	Eureka.
42.	Fred Cota	10	1½	100	1	Eureka.
43	John Wm. Hess	100	1½	100	1	Eureka.
44.	William Hackney....	50	¼	25	.....	Eureka.
45.	L. B. Aldernar.....	40	1	12	.. ..	Eureka.
	Total.....	5,805	74¼	1,323	37	

No.	Growers of fruit of all varieties.	Fruit trees now set.	Acres small fruit now set.	Trees, fruit to be set.	Acres small fruit to be set.	Post Office.
46.	Joseph Roycraft.....	200	½	300	½	Omro.
47.	J. Crego..	2,000	1	.....	.....	Omro.
48.	J. W. Bradley..	100	1	50	1	Omro.
49.	Joseph Treleven . ..	125	1½	50	½	Omro.
50.	Thomas Brogden.....	700	½	200	....	Omro.
51.	O. W. Berkley.....	50	1½	.....	1	Omro.
52.	J. L. Fisk	150	½	.....	.. ..	Omro.
53.	James Samphen	150	1	.....	1	Omro.
54.	C. Booth	125	¾	....	... ...	Omro.
55.	C. O. King	100	¼	.....	.....	Omro.
56.	T. Cook	75	....	.....	.....	Omro.
57.	S. Shufelt	150	¼	.....	.....	Poygan.
58.	R. Pafrey	150	.....	.....	....	Waukon.
59.	W. Turner	300	1	.....	.....	Omro.
60.	W. Carter	150	¼	....	.....	Waukon.
61.	Sam Sutherland.. ...	500	.....	300	....	Waukon.
62.	Andrew Sutherland..	.....	....	.....	....	....
	Total.....	16,681	18¼	2,418	7½	

I John L. Fisk, as delegate of the Omro Horticultural Society, endorse the above petition as per instructions from the above society.

FRUIT OUTLOOKS FOR 1894.

ITEMS COLLECTED BY THE SECRETARY.

J. J. Menn of Norwalk, a very successful apple and small fruit grower writes, under date of May 29: The frost of last week did but very little damage, but the one of this week did lots of damage in some parts, though right here in this valley the damage to small fruit is very light. The prospects are good with me for a big crop of strawberries. The strawberry season will last ten days longer than last year. If the cold weather holds on, there will not be any ripe before June 12th. Prospects were never better with me for a big crop of apples; others had some frozen.

Howard S. Smith, son of the late J. M. Smith of Green Bay, writes, date May 28: Our berry crop will be somewhat later than usual on account of cold weather. Our best picking, as near as I can judge, will be about June 25th.

Mrs. Vie H. Campbell, our former treasurer, writes from Evansville, May 29th: Our strawberries are not affected by the recent cold weather; the vines are vigorous and berries well protected by the large leaves. If present cool weather continues, ripening will be retarded until June 20th. Think we could hold our meeting June 21st and 22d. Roses have suffered from cold weather.

D. C. Converse of Ft. Atkinson, writes May 30th: Weather is cool and from present indications strawberries will be at their best probably about June 15th, but weather is so changeable it is difficult to tell.

F. J. Wells of Milton, Wis., a small fruit grower, writes, date May 29: We had a light frost May 27th, but I do not think one fifth of the strawberries are hurt. Warm weather would give us some berries in a week, but the wind is in the east and cold. My berries will probably run until July 4th. Strawberries appear to be a large acreage; light rows moderately loaded To me it is a wonder how they stood the late cold spell

Wm. A. Springer, the veteran fruit grower of Waupaca Co., writes May 28: There have been two frosts lately that did some little damage in places in this county, but did us no harm. Last night's frost did no harm, not even to cucumbers or melons. Early apples are well set and will be a good crop, I think. Strawberries the same, and I think they will be ripe

earlier than usual. Think it doubtful if I can attend the June meeting, though I would like to, as I enjoy shaking hands with old friends. Glad to hear a good report of the Lewis Duchess in your orchard, which I would like to see in bearing season. How is Ratsburg with you. It is the proudest thing yet. Everything at our trial station all right.

F. W. Loudon of Janesville, the originator of the Jessie strawberry and Loudon raspberry, writes May 28: I hear they have lost their crop by frost at Cobden, Ill., so I cannot state the time of ripening here, by theirs. Think we will market berries here by June 15. My crop will be short by at least one half, owing to the recent freeze.

Mrs. Lelia Robbins, of Platteville, who is successfully managing the small fruit plantation started by her late husband, Geo. H. Robbins, writes May 28: I am sorry to say the strawberry crop is going to be light all over this section on account, I think, of the very dry weather last summer. Frost has not damaged fruit with us yet. Strawberries will be at their best I think in about three weeks. The weather has much to do with hastening or retarding the ripening of strawberries.

A. D. Barnes, a successful fruit grower and nurseryman of Waupaca, writes May 27: Owing to the cool weather and cold earth, I judge that strawberries will be at their best about June 21 and 22, certainly not before; ours will be better June 27 and 28 than any time sooner. No damage here from cold that I have noticed, except to early grapes. Prospects are good for a large crop of fruit of all kinds—cherries, plums and apples immense.

B. F. Adams, ex-president of our society and an extensive small fruit grower of Madison, writes May 28: I think strawberries will begin to ripen June 10th and be at their best June 20th. The crop will not be large on account of the continued drought of last season. The growth of plants was light. No serious damage from frost about Madison; but, in portions of Dane county, corn, vegetables and small fruits were greatly injured.

W. D. Barnes, a small fruit grower of New London, writes May 28: Prospects are favorable for eighty-five per cent. of a crop. With earliest ripening June 15th, and at their best June 20th to July 1st, would have been my report had not a white frost appeared this morning. The damage is yet to be seen, still I do not think it will be heavy as it was mostly gone before sunrise. Apples have set a fair crop; cherries poor. Bush fruit, canes and grapes are in good shape. Think state meeting should be as early as June 27 and 28.

A. Clark Tuttle, grower of Russian apple trees and small fruit at Baraboo, writes May 28: The strawberry crop has suffered in some parts of this county from frosts and cold storms. They develop very slow. Think June 20th early enough for our summer meeting. Do not think there will be any shipping from here before June 15th. Enhance stands at head of

list now in all points. Large growers near here suffered little and none from frost. I handle the fruit here at the Baraboo station again this year. Will try and ship some Enhance berries to the meeting, but fear press of business will prevent my attending.

Prof. J. E. Colman of Evansville, who finds small fruit growing in connection with teaching, both pleasant and profitable, writes, May 28: "Before the recent cold weather the outlook for strawberries was excellent; but the frosts will delay and shorten the crop very much. Would prefer the meeting after the 20th of June."

J. L. Herbst of Sparta, corresponding secretary of the society, writes May 27: Another frost last night and in some places pretty heavy. We very luckily had quite a heavy fog during part of the night, so we suffered very little. On the Thayer farm we built fires or smudges from two to five o'clock in the morning. The damage to strawberries will not exceed ten per cent. Raspberries and blackberries are not damaged much on account of not being far enough advanced. Prospects for a good crop of all small fruits.

Franklin Johnson of Baraboo, an orchardist and small fruit grower, writes May 28: The frost has done very little damage. The prospect for a large crop of strawberries is still good. They will be at their best about the middle of June. Apples promise a large crop. The Gouger has been putting in time day and night on the Duchess.

L. G. Kellogg of Ripon, president of the state society, writes June 2: I can not see that strawberries have grown any in ten days, but if weather turns warm they will come very fast.

G. J. Kellogg of Janesville, who has given our society more notes on weather temperature and observations on new fruits than any member we have on our rolls, writes May 30: Picked our first strawberries last Sunday and our first two quarts to-night; but it is cold. If weather should warm up berrries will be right on hand in a week or ten days, but considering the uncertainties I say June 19th or 20th for our meeting. Offer premiums for best collection of seedlings and for best varieties for the farmer. Prospect good for a fair crop of fruit.

Mr. W. H. Hanchett, one of the best growers in the vicinity of Sparta, writes May 26: Strawberry crop in and around Sparta has not been injured by frost thus far. May 12th and 13th will probably be the best dates for the summer meeting.

Our former secretary, B. S. Hoxie of Evansville, writes May 30th: It does not look this Wednesday morning as though we should ever have ripe berries, but two weeks will be as early as we can expect any from this date.

Fred A. Harden, superintendent of trial station, Weyauwega, writes May 31st: Strawberries will commence to ripen June 10th to 15th. Should think 21st and 22d would be a good time to hold our summer meeting. Straw-

berries will be a light crop here. I do not think frost hurt here any to speak of.

J. C. Plumb, one of the pioneer fruit growers of Wisconsin, who has spent the best of his life in the interest of horticulture, writes May 30th: Have waited to see other growers' Strawberries promise an average crop, if it rains soon and comes off warm again. We think 13th will be the best of the strawberry crop. 21st will be too late if it comes off warm soon; *who knows*? The apple crop in this vicinity is very promising. We intend to spray again next week.

In addition to the foregoing statements and opinions of representative horticulturists in different parts of the state, I will say that on May 29 I visited Sparta to ascertain the amount of damage that had been done, also to see the condition of the growing crops. This is quite an important fruit center of Wisconsin, as between two and three hundred acres of small fruits are growing in this vicinity. The different plantations vary in size from a village lot to the Thayer one-hundred-acre fruit farm. From what I could see and hear I am of the opinion that ten per cent. will cover all the loss in this vicinity by the recent frosts, though it looked precarious on the night of May 27th, when the temperature went down to 32 degrees. I think the heavy fog that set in during the night saved much loss. Never in my travels in this or any other state have I seen better cultivation and cleaner grounds than there is in and around Sparta, and the vines and bushes seem to respond to the care they receive. Raspberries look very promising, and blackberries are snow white with blossoms. Barring set backs there is a prospect of an abundant crop, and the way the orders are coming in to the recently organized Sparta Fruit association the demand and price will be quite satisfactory. Over twenty men were at work on the Thayer fruit farms, one of which was cultivating the state trial station acre. The apple trees growing on this acre when compared with those on heavier soils give unmistakeable evidence that either soil or location, or perhaps both, are not well adapted to their growth. The pear trees mostly have succumbed to cold or blight. Cherry trees look very vigorous and plum trees look thrifty. Saw some fruit on one of the Ocheda plums I sent to this station two years ago. Some top-worked trees of McMahan and Transparent on Whitney trunks, will show the experimenter that that plan is not a success. Better take a more vigorous stock with horizontal limbs, and work in limbs instead of bodies, as then you avoid sharp crotches. The raspberries and strawberries on this acre look well, but are of varieties that have been tried by nearly all our growers, and I am of the opinion that Mr. A. L. Hatch was right when he said that the setting of strawberries at the trial stations might as well be discontinued. I did not have time to visit the fine plantations of Messrs. Hanchet & Son; but the grounds of Mrs. Davidson, Mrs. Nutting, Mr. Fisher, Mr. French, Mr. Richardson and Mr. Leete all deserve especial mention. In the yard of Mr. Ira Hulburt I saw, among other nice things in small fruits, a Clinton

grape vine over sixty feet long that is filled with blossoms the entire length. It runs along the side of the house and is a beauty. Among the new varieties of strawberries on the Thayer farms, the Van Deman shows the first ripe fruit May 29, and the Great Pacific is well loaded and a very strong grower. Two acres of the Downing gooseberry, trimmed in tree form, look very thrifty and fine. Currants also look well here, and on the farm of our member, Mr. Z. K. Jewett, I will endeavor to collect more exact statistics of the size and yield in dollars and cents of these several plantations for presentation at our next annual meeting.

Additional, June 5th, J. J. Menn writes from Norwalk: My apple crop was damaged from one third to one half last week by something unknown to me. It was not the frost but the small apples with leaves, and all seemed to wither and dry up, but not all on the same limb; some are not touched. The Tetofskys are injured the most of any. It is the same all around in this vicinity. Previous to that I had the best prospect for a big crop I ever had, but the reverse is now true.

Note.—Mr. Menn describes the conditions in my own orchard at this date June 6th, only the late blooming varieties, like Avista and McMahan, are injured most, and earliest, like the Annis and Duchess, are injured the least. I have often said that I never was injured on the hill by a spring frost, but it does seem to me now that I cannot truthfully say so in the future. Mr. Menn says it is not the frost; but I think it is. I can find no traces of insects, and it cannot be blight because it is the blossom twigs, and the trees with no blossoms and the most vigorous leaves are not touched. I am saving some of the injured twigs for examination by Prof. Goff and will report later. At present I think my crop is injured at least one half, and it may injure the fruit buds for next year. Like the scripture phrase, one shall be taken and the other left. So you will find a well-developed growing apple and the injured twigs on the same limb.

Mr. John Howie, a small fruit grower of Waunakee, writes June 3: Strawberries, corn and garden vegetables generally badly injured by frost. Apples only slightly hurt and promise a good yield. Strawberries will be at their best from June 10th to 20th, but promise a poor yield.

HORTICULTURE.

Transplanting onions, C. B. WALDRON (*North Dakota Sta. Bul. No.* 12, *Jan.* 1894, *p.* 10, *fig.* 7).— Attempts to grow onions in the ordinary way at the station have generally failed. April 4 seeds of a number of varieties were sown in shallow boxes in the greenhouse. When the plants came up the average stand was about 500 to the square foot. May 23 these small onions, with a diameter slightly greater than that of an ordinary wheat straw, were transplanted to the open ground 5 inches apart in the drill. On the same date and on similar soil seed of the same variety were sown. The rainfall from above date until June 30, was 3.62 inches, for July, 2.21, and for August, 2.72.

The onions were harvested September 22. At this time all of those which had been transplanted were mature, while of the others only the early pickling sorts and the Extra Early Red had thoroughly ripened. Only 5 varieties out of 26 planted made a satisfactory stand from seed. The following table gives the relative yields from the two methods of culture.

Relative yields of onions transplanted and grown from seed.

Variety.	Weight of transplanted.	Weight of nontransplanted.
Early Red	71	14½
Red Victoria	53	7
White Victoria	56½	11
Silver White Ætna	65	13
Yellow Globe Danvers	47	12

The author estimates that about 84 square feet of glass are necessary to furnish plants sufficient for one acre, and that the cost of transplanting an acre is about $10.

When the saving of seed is taken into account it is doubtful if the expense of growing a crop in the old way is less than by the method of transplanting. Transplanting onions produced large, regular, mature bulbs, greatly excelling the others in keeping and market qualities.

At the last summer's meeting of the state society held at Kilbourn City, there was offered a special premium of two dollars and an annual membership to the high school pupil who would write the best report of the meeting. The papers were passed on by Professor Smith and the premium was awarded to Miss Grace Smith for the following excellent report, showing conclusively that we have among our school pupils those that will be able to report our meetings in years to come.

SECRETARY.

MORNING SESSION.

The summer meeting of the State Horticultural Society was called to order by the vice president, Mr. Hirschinger, as the president, Mr. Thayer, was absent.

Announcement of committees read by Secretary B. S. Hoxie.

Committee on Program: C. W. Smith, Arthur Elliot, B S. Hoxie.

Committee on Resolution: J. E, Wright, J. E. Jones, Miss Mary Conway.

Committee on Fruit and Vegetables: George Campbell, John Stowell, Mrs. Woodruff.

Committee on Plants and Flowers: Arthur Elliot, Mrs. W. Hopkinson Mrs. Vie H. Campbell.

Committee on Special Premium: Wm. Fox, Mrs. J. E. Wright, J. L, Herbst.

Program for afternoon was read, after which the meeting adjourned until 1.30 P. M.

AFTERNOON SESSION.

The metting was called to order by the vice president, Mr. Hirschinger. Instrumental music by Miss Ella Smith.

Address of welcome by J. E. Jones was very good. He spoke (in comparison) of the welcome of Eulalia. Response by B. S. Hoxie. He spoke of the "World's Fair" taking a good many people away from here to-day, and the works on Arbor day in the schools. He seemed to think it was a good plan, (the works on Arbor day, I mean.)

Possibilities of Horticulture by C. W. Smith. He quoted a piece from "Our Dumb Animals." He said any one would take pleasure in raising flowers. He thinks raising fruit or flowers is a good thing for boys who haven't much to do in vacation. They will enjoy it. Mrs. Campbell said the paper ought to go into every home. Mr. Hirschinger said there was more back of that paper, and if he were to shake the professor he might get it.

Remarks, and reading of a paper on trees voted for on Arbor day, by B. S. Hoxie.

The vocal duet by Misses Tillie Ahrens and Yettie Weidenbacher pleased all.

Paper entitled, "Why?" read by Mrs. Campbell and written by Carl Potter. B. S. Hoxie explains why Carl Potter is not here to-day. Remarks on "Why?" by Mr. Hirschinger and Mrs. Campbell.

It was moved and seconded that the executive committee appoint a man to be corresponding secretary in place of Carl Potter. The motion was carried.

Remarks and a letter from M. A. Thayer, by B. S. Hoxie. Discussion of apples, by Mr. Hirschinger. He said, "The apple is the fruit of all fruits," and "Apples keep longer than other fruits," and "Any apple tree will grow with care." The paper was afterward discussed by Mr. Ramsay, Mr. Hirschinger, Mr. Haskins, Mr. Borst and Mr. Wright.

Remarks and a letter from Mr. Hatch, by B. S. Hoxie. It was moved and seconded that the meeting be finished this evening. The motion was carried. A letter from Mr. Kellogg read by B. S. Hoxie.

Meeting adjourned until 8 P. M.

EVENING SESSION.

The meeting was called to order by the vice president, Mr. Hirschinger. Remarks by B. S. Hoxie. Music by Kilbourn City band was very good.

Report of committee on resolutions read by J. E. Wright. There were five resolutions and they were all adopted.

Paper — "The Garden Within," by Miss Mary Conway. She represented the heart as a garden, cheerfulness as a plant and selfishness as a weed. She spoke of the garden within shown in the face. It is a very good comparison to a garden without.

Vocal duet by Misses Tillie Ahrens and Yettie Weidenbacher was enjoyed by all.

Paper — "Roses for the Garden," by J. E. Wright. He says there is no *best* rose. He says he has had a rose six years and has never seen a bit of mildew on it. He spoke of many roses and had a blossom for each rose he spoke of. He thinks this is the state to grow roses in. He says roses bring joy to a family.

Music by Kilbourn City band. We are always ready to hear a band.

Paper — "Neglect of the Beautiful in Nature," by Miss Fleta Huntley. She says young people are too much given to studying the artificial instead of the natural, and she said: "Show me a girl who rides a bicycle and I'll show you one who has paper flowers in her room.

Vocal solo — Flora Loomis. The audience showed how much they liked her singing by giving her an encore.

Discussion on strawberries, by Mr. Herbst and Mr. Harris. Mr Herbst said the strawberries rusted last year, but not at all this year. Mr. Harris said he raised 3,000 quarts of strawberries on one fifth of an acre.

There were a great many flowers and vegetables there. Mr. J. E.

Wright had 25 different kinds of roses. There was not a very large crowd on account of the rain.

The meeting adjourned to take a trip on the steamer to see the "Dells" Wednesday morning.

The report of committee on premiums was as follows:

PLANTS AND FLOWERS.

Best collection house plants, not less than ten varieties, Mr. Ramsay, first premium	$3 00
Best show of moss roses, J. E. Wright, first premium	1 00
Best collection of wild flowers, Lillie Bauer, first premium	2 00
Grace Smith, second premium	1 00
Best bouquet white roses, J. E. Wright, first premium	1 00
Miss Mary Conway, second premium	50
Best collection of roses in variety, J. E. Wright, first premium	2 00
Miss Mary Conway, second premium	1 00
Best table bouquet of roses, Lillie Bauer, first premium	1 00
J. E. Wright, second premium	50
Best roses other than white, J. E. Wright, first premium	1 00
Best foliage plants, Mr. Ramsay, first premium	2 00
Best show of pansies, Mrs. Fogle, first premium	2 00
Mary Conway, second premium	1 00
Best collection fuchsias, Lillie Bauer, second premium	1 00

STRAWBERRIES.

Best display of strawberries, not less than ten varieties, M. A. Thayer, first premium	$4 00
G. J. Kellogg, second premium	2 00
Best collection new seedlings, Mr. Herbst, first premium	3 00
Mr. Kellogg, second premium	2 00
Best quart for general cultivation, M. A. Thayer, first premium	1 00
Best quart of any variety, Mr. Borst, first premium	1 00

The visiting members of the Horticultural Society went to the Dells at reduced rates, and took their lunch. They all enjoyed themselves very much and expressed great satisfaction with their visit.

POINTS FROM OUR IOWA NEIGHBORS.

In F. M. Powell's report he stated that for northern Iowa the Duchess is the most profitable for early market. The discussion that followed will probably interest our members, so I give it in full.

Dr. Powell—If I had had the same opinion of Oldenburg five years ago that I now have, as a profitable variety for market, I would have 10,000 trees of it planted instead of 1,000.

The Secretary—Mr. W. C. Haviland, of Fort Dodge, has an orchard of 160 acres of Oldenburg. People ask, what are you going to do with them? Mr. Haviland states that a cold storage firm in Minneapolis has contracted his entire crop. In cold storage the Oldenburg becomes a winter apple. At the Tremont House in Chicago I found it used extensively last winter as a dessert apple. The fruit had lost much of its acidity and was good in quality. Its tenderness of flesh and juiciness made it superior to the hard and tough late winter varieties.

Cold storage, by the modern ammonia and compressed air system, is playing an important part in changing summer and fall varieties to winter. When removed from cold storage they remain firm and in good condition much longer than with the old ice system. Every neighborhood should have a cold storage house where ten thousand bushels of apples are grown. The New York grape growers are making use of cold storage houses and refrigerator cars for supplying the western market. We can afford to co operate in the same way in Iowa.

J. G. Berryhill.—About 11,200,000 ten-pound baskets of grapes were shipped from the Chautauqua grape region the past season. Such vast quantities would be entirely without profit to the growers but for co operative marketing. Here in Des Moines, with 60,000 to 65,000 people, if we, as fruit growers, compete with each other the markets are certainly glutted. The surplus is peddled about the streets and prices go down. In order to relieve the glut it is necessary to co operate and ship to distant markets. Shipments east and west are not so likely to prove profitable as north and south. The small grower markets his fruit in small quantities and must necessarily ship by express. But many growers together can ship in refrigerator cars attached to express trains. The present system is to ship to Chicago in car-load lots. The small towns then receive it from the large commission houses in Chicago. The fruit is necessarily deteriorated; much time is lost, and the cost increased. Unless we co-operate, small fruit and grape culture must necessarily be limited in Iowa. In New York the growers co operate and by securing car-load rates are able to flood our western markets. We will by co-operation be able to do two things. First, ship to distant markets imperfectly supplied. Second, keep

the home markets well supplied at all seasons by means of cold storage, the fruit being necessarily better than that shipped in by reason of less transportation.

W. H. Guilford.— Those eastern grape men are not making a collosal fortune out of the business. In my home city of Dubuque a dealer had six to ten market wagons peddling ten-pound baskets as low as twenty five cents retail. They can not compete with Iowa growers if we adopt the same methods. In many of our rural districts not one family in five has a sufficient home supply of grapes, the vineyard generally consisting of a few vines, competing, with more or less success, with a lot of tall weeds. It is our mission to encourage fruit culture about home.

J. M. Elder.— In my home at Concord, New York, grapes sold as low as twenty cents per ten-pound basket.

G. B. Bracket.—Prof. Fowler of New York, told me at the World's Fair, that in Chautauqua grape region many were digging up grape vines and planting orchard fruits instead. Prices were ruling too low for profit.

The following is a part of President Coleman's address delivered at their annual meeting.

The past year has been unusally discouraging for horticulturists. In many places the fruit crop was a failure. Still never in the history of our state, if ever in the history of our country, was there a table loaded with hundred bushels of more highly-colored apples than were shown on our tables during the late World's Fair at Chicago. Thousands of people admired our apples, and were surprised to find that Iowa was at the head of the great fruit states of America. We had 372 named varieties and 30 of unknown and seedlings, and 25 of crabs, in all 427 kinds. Had 30 varieties of grapes, 59 of plums, 25 varieties of pears and 10 of peaches, a list entirely too large for general planting.

Friends, to me this last is alarming! The unprincipled tree man has done our people a great injustice. It is our duty to educate our people. Our society is a state society supported by the people, and they have a claim on us that must be met, or it will only be a question of time when our support from the state will be greatly diminished, and our usefulness will only be found on the pages of history.

The fruit business in Iowa is no longer an experiment, but an established fact. We can grow better apples and more of them to the acre, than any other state in the union. We are planting more trees than any other state. It is estimated that over $100,000,000 are invested in this state in horticulture. Our people are eager to get our reports, so we must make them more practical and get them before the people sooner.

Therefore, I recommend that a competent committee be elected in each district, whose duty it shall be to revise the fruit list and recommend only such fruits as are adapted to their locality. The time has been when this could not be done, but now it can be done, for we have certain varieties that are adapted to certain localities; then we have varieties that are a suc-

cess in any part of our state. It is our duty to prepare such lists of fruits and scatter them broadcast over the state.

Again, I think the time has come when we should publish our own report. We can do it for less money and be a saving to the state, and we can get our report before the people much earlier, thereby being of greater value to the planter.

I have made it a point to look up the cost of printing our report and the rapidity with which it can be done. By this means I find that we can get our report before the people several months earlier. If this could be done, our report would be highly prized by every planter in the state.

The fruit business in the southwest part of our state is rapidly increasing. The small orchards have been made larger and farmers are planting large orchards on every farm.

The ridges that have been rated as second-rate lands are being planted to fruit trees and are now our best lands.

Stop and think! Let us plant an acre of our land with trees. If we plant twenty five feet each way, then we have about seventy trees to the acre.

Good home-grown trees can be found a short difference from every planter and can be bought at living rates. So the cost of trees and planting an acre need not be over $15, and with good care in a few years the trees would richly reward the planter.

It is a very low estimate to have a tree bear two barrels of apples at the age of twelve years, and the low estimate of $4 per tree would aggregate $280 per acre. What can we do with our land that will pay us as well? But some will say the fruit business will be overdone and in a few years we will have no market for our fruit. My answer is, it would be a great blessing if the millions of hungry children all through our land could be supplied with good fruit. If you had stood with me at the fruit table the last three months of the World's Fair, and could have heard the people from all parts of the world pleading for apples, you would never stop to think what will we do for a market.

Fruit should be picked carefully at the proper stage of development; it should be assorted carefully and packed in the best possible manner to have it keep well, bear transportation and open up in attractive shape. Packing fruit for market is an art.

Fruit dealers generally prefer handling fruit that is well prepared, and are willing to pay an extra price for perfect fruit.

So, friends, let us buy only good bearing varieties, and No. 1 trees; then plant well and care for the trees; then learn to handle and pack the fruit, and we will always have a market for all we can raise.

DISCUSSIONS ON NEW FRUITS—NEW RASPBERRIES.

Older.—We have watched this variety for seven years with much interest, and feel safe in saying that it is one of the best well-tested black caps I have some planted seven years ago that, from present appearance, are

good for seven years more, while Tyler and Gregg, planted close by at the same time, are worn out and will have to be removed. The fruit in size, quality and quantity, is all that could be reasonably desired. It ripens about four days later than Palmer or Tyler. The plant thus far is healthy, and one of the hardiest. The first season's growth from tips, is not as rank as some others, but the second year it makes up for that. I have reports from reliable fruit growers in northern Illinois, Wisconsin, and many places in northern Iowa, all saying it is one of the best they have. I have not heard of it being damaged by the winter in any of these localities.

Palmer.—We have had this in fruit three years and feel satisfied that it is the best *very early* black cap we have. It ripens with Tyler and Souhegan. We consider it more productive, healthier and hardier than either, and believe it will soon supersede them.

The Parker Earle (s).—I have now fruited three years and find it one of the best (if not the very best) staminate variety I have tested. But it is a poor plant-maker and will not be profitable to the plant grower unless he can get two or three times the price received for any standard variety. In order to get good fruiting rows plant them twice as thick in rows as Beder Wood or Warfield. It has borne a good crop every year regardless of unfavorable seasons and conditions. It is the largest plant, with largest roots, of any strawberry I have grown, and is very easily transplanted. It is a good grower, healthy and hardy, will stand more drouth and abuse, and produce a good crop of marketable fruit, than any I have yet tested. Fruit medium to large, bright red, handsome, cone shaped, with a slight neck, of good quality and moderately firm. It is immensely productive. I have counted on one plant fourteen fruit stems with from eight to twenty berries on each stem — over 200 berries on one plant. I have watched the reports on it closely for three years, and, having seen but one or two unfavorable reports in the whole country, I must conclude it does about as well everywhere, so far as tested.

Oregon Everbearing (s).—This had better be named *Neverbearing*, as it has not borne enough fruit in two years to give me one fair sample berry to test its quality.

Gillespie (s).—This is a seedling of Haverland and said in Ohio to be an improvement on that variety. But with me this year it was a total failure. It is a weak, delicate grower, making but a small number of plants, the foliage curls, and sunburns, and fifty plants set in the spring of 1892 did not produce a dozen berries. I shall not bother with it any more.

Gov. Hoard, Woolverton Saunders (s), all staminated, we have fruited the last two years, and they have all done moderately well—but both seasons being so very unfavorable, we are not fully able to decide that any are valuable; neither do we consider them worthless until we have given them a fair chance, in a good season. They are all healthy and hardy, good strong growers, fruit large, handsome and of good quality.

ORCHARDING IN NORTHERN IOWA.

By JOHN C. FERRIS, Hampton.

The northern fruit district of Iowa is probably the northwestern limit of successful commercial orcharding. Many efforts in that direction must be recorded as failures. For example, certain citizens of Cerro Gordo and Floyd counties invested about $2,000 in peach and pear trees. They were advised that these were reproducing seedlings, requiring no grafting and perfectly hardy. If they are planted the result will not encourage commercial orcharding in the northern district. Many other ventures will prove even more discouraging. Many apple orchards have been and will be planted as fruitlessly as these peach orchards, and the planters will smile in derision at the idea of commercial orcharding in northern Iowa. And yet I venture to say that no farming can be made more profitable, nor pursued with greater certainty of success, than intelligent commercial orcharding on suitable sites and soils in northern Iowa.

The requisites are elevated sites, clay soils, intelligent orchardists, honest nurserymen, careful, persistent effort and faith. No doubter will succeed. Yet faith must be based on experience and not upon the enthusiasm of specialists. The planter of untried specialties has fifty chances for failure to one chance for success.

The man who thinks apple trees are pretty much alike has no business planting apple trees at all, much less commercial orchards. But there is little danger that the uninformed will do more than experiment with eastern absurdities. The best informed will be the largest planters.

I must repeat the warning against many varieties in the commercial orchard. An orchard of Oldenburg in the vicinity of cold storage could be made very profitable. The two varieties, Oldenberg and Wealthy, with cold storage convenient, would supply excellent kitchen and desert apples, and being reliable fruiters might be as profitable as anything that could be planted.

In the absence of cold storage the best bearers of the Recumbent and Hibernal family might be substituted for Oldenburg, being fully as good in tree and a later apple. If quick returns are desired Kaump and Longfield would have a carload of apples as young as any two varieties of my acquaintance.

If winter apples are considered indispensable, top-grafting must be resorted to. Our orchards planted with Whitney, Virginia and Oldenburg, and top-grafted with Roman Stem, Scott's Wilter and Melinda, might sometime become a very satisfactory and profitable orchard. But we of the north can hardly expect to compete with southwestern Iowa in producing winter apples. It is likely that the very early varieties will be most

profitably grown in the north, and this will certainly be true when cold storage becomes general.

Of course, the south has many advantages not possessed by us. But we have certain things in our favor. We are near the great northwestern market. Mr. Haviland truly says there is not another such orchard between his and the north pole. We have fewer insect enemies. Given varieties keep much longer than the same grown in the south. They are higher in color and better in quality.

I will not attempt specific directions. If my suggestions serve to encourage intelligent effort I shall be glad. If any prefer the suggestions of foreign missionaries they can learn all about hardy peach and pear trees.

DISCUSSION ON APPLES.

C. G. Patten—Mr. Ferris speaks of clay soils being the best for commercial orchards. Yet I have seen splendid orchards in northern Iowa on rich, strong prairie land, inclined to be moist, and rolling enough for drainage. We rarely have sandy subsoil, except along streams. In my locality the rule is a heavy and tenacious rather than a sandy subsoil. Tallman Sweet and Golden Russet were successfully grown for many years on such soils. I have no doubt but that good orchards can be grown on any prairie soils. The Northwestern Greening has proven entirely tender in northern Iowa as a root graft, but top grafted on a hardy stock it has not been injured. This is a most remarkable instance.

J. C. Ferris—My experience with Northwestern Greening corroborates Mr. Patten's testimony.

J. S. Harris, of Minnesota—There is much discussion now regarding the Melinda apple. But it is very tardy in coming into bearing, as it takes about sixteen years to get half a peck of apples. Scott's Winter is much better, and should take its place. Mr. Wilcox, of La Crosse, in southwest Wisconsin, has been very successful in top-grafting Scott's Winter on Transcendent; the union is good. He also has it on Hyslop. It bears in two or three years after being top-worked. The fruit is acid in early winter, but in March and April it becomes of good quality. Dr. Hoskins, of Vermont, planted many Scott's Winter alternately in orchard with Wealthy about sixteen years ago. The Wealthy trees are now all gone, but he has had carloads of fruit from the Scott's Winter.

The Secretary.—Scott's winter has proven hardier in Iowa than Wealthy. We have grown it at Ames about seventeen years. When Wealthy wood was colored by the hard winters, the Scott's Winter remained perfect. Top-grafted on Hibernal the Scott's Winter comes into very early bearing. It is satisfactory in productiveness, although not as heavy a bearer as Oldenburg. Top grafting tends to early bearing and increased hardiness

for a time. I have cut off the top of a one year apple seedling, grafted it on a bearing tree and it bore in two years. The grafting caused more or less constriction at the point of union. This, like wiring and ringing, tends to retain the elaborated sap in the top, causing the mature condition of the wood essential to the production of fruit buds. I have found that the Jonathan, top-worked on hardy stocks, would endure very cold winters for the first three years. But later they were killed by winters of the same severity. I have also found Grimes Golden, top-worked on Oldenburg, perfectly hardy.

W. H. Guilford—The question of top grafting is a very important one. Our experiments in this line should be guided and directed by a committee from this society. This would save time and unnecessary duplication of work. In 1877 I began top-grafting on Whitney No. 20, and still continue the experiments. I find it a very good stock for some varieties, and a very poor one for others.

H. W. Lathrop—I agree with Capt. Speer's views on top working and manuring. There is nothing more important in farm management than barnyard manure well applied. One of my neighbors at Iowa city has not manured his orchard for twenty-five years, while I manured my orchard as needed and have been well repaid in the greatly superior crops of fruit. I began top grafting on hardy stocks in 1865 and also put out the same varieties on their own roots. My Ben Davis and Jonathan top-grafted are living today, while those root grafted have been gone several years.

To avoid crotch-scalding, the top grafting should be done on the limbs of three year-old Virginia or Soulard crab trees, from four to six inches from their bodies. When the grafts are one year old the trees should be taken up and planted in the orchard. It has been suggested that the Silken Leaf, and many other hardy Russian apples, would be good stocks for valuable tender kinds of apples, but the Silken Leaf is not a good stock, for the following reasons: It is well known to vegetable physiologists that the wood of different varieties of trees of the same species differs very much, in that it may be composed principally of large, thin walled vessels and tracheides, forming a loose, porous mass; or it may consist chiefly of parenchymatous tissue, or of a dense, firm mass of thick walled vessels and libriform fibres strongly lignified. The wood of the Silken Leaf, Ben Davis and Red Astrachan is of the kind which I have described first. When the bark of such trees is seriously injured by whipple trees or otherwise, the wood under it will rot to the heart in less than twelve months. The wood of the Oldenburg, Anisette, Tetofsky, and Virginia and Soulard crabs, is of the kind which I described last. Although one third of the bark may be stripped from the body of an Oldenburg or Virginia crab tree, the wood will not rot.

J. C. Ferris I do not think it necessary to top-work Wealthy on Oldenburg, as mentioned in Capt. Speer's report. It appears to be less productive

and slower in coming into bearing, although fruit is larger than when grown on its own stock. But why should it keep longer?

R. P. Speer—In reply to Mr. Ferris' question will say that my Wealthy top-worked on Oldenburg are larger, hang to the trees better, and kee p longer.

J. S. Harris.— Does not the Wealthy have more fibrous roots near the surface, while those of the Oldenburg go straight down with few fibres?

R. P. Speer.— Yes, sir. Probably that is the reason why my Wealthy trees top-grafted on Oldenburg, matured larger and better fruit than root-grafted Wealthy trees, as mentioned in my report.

M. J. Wragg.— In my experience with the Salome and Northwestern Greening I find they can not endure twenty degrees below zero. Last winter, at the Wisconsin State Horticultural Society meeting, at Madison, I heard the Northwestern Greening highly recommended. But their climate is not ours, the proximity to the lake influences the humidity of the air.

W. H. Guilford.— In my county pedlars have sold a great many Salome and Peter apple trees and delivered Wealthy trees instead.

J. S. Harris, of Minnesota.—You gentlemen are wasting valuable time in bolstering up such varieties as Northwestern Greening and Melinda. Not a single tree of Melinda survived the winter of 1884-5 in my locality, and the Northwestern Greening killed root and branch. At Oconto, Wisconsin, where it is highly recommended, the climate is almost as favorable for apple trees as in Michigan. It does well along the lake shore, but both are worthless for northern Iowa.

C. G. Patten—I wish to say a word in defense of the Melinda. In the past eighteen or twenty years it has been widely distributed in Floyd, Cerro Gordo and other counties in northern Iowa. We find trees alive where all others have been killed except Oldenburg. Last year they bore an immense crop, and this year as much as Oldenburg. Melinda is the hardiest *long keeping* apple we have found in northern Iowa. It is not a first class apple, and an rather inferior tree in nursery. I am propagating it largely by top-grafting in the nursery.

WOMEN AS HORTICULTURISTS.

By MRS. HERBERT OSBORN, Ames, Iowa.

If it is true that he who makes two blades of grass grow where but one has grown is a benefactor to the human race, surely they who add to the world's supply of luscious, health-giving fruit and necessary vegetables, deserve no less the title, and those who successfully engage in any line of work advance its interests in some degree.

Is it not strange that woman, who in this era is pressing into every department of hum an endeavor, should have early recognized in the various lines of horticulture a field admirably adapted to her taste?

This occupation, unlike too many others into which women are drawn by natural ability or force of circumstances, need not necessarily remove her from home life. On the contrary, many phases of it may be conducted in connection with the home and prove of inestimable value to the family, both by material results and the elevating influence which an interest in nature and her works always exerts.

When we consider the dietary value of fresh fruit and vegetables it is astonishing that so many families in both country and town have an insufficient supply or else depend upon the too often stale offering of the market, when a small spot of earth might supply these necessaries in the best form. Busy men are wont to neglect the garden on the score of cost. Much hired labor brings the cost of home production above that of the marketed product.

Many a housewife takes the matter into her own hands and, by personal supervision and careful study, she is likely to solve it successfully.

Mrs. J. K. Macomber, of Des Moines, in addition to the care of a large family and many social duties, supplies her table with fruit and vegetables of her own raising, and each year the surplus from a small area gives a sum well worth the trouble.

Children are easily interested in such work, and a love for the beautiful, and habits of observation and industry, may be cultivated in this way more easily than in almost any other, while outdoor life brings its own reward in physical development.

Women readily find employment in florists' establishments and with seedsmen. They are preferred on account of their superior taste and attention to detail. Especially is this true in Europe, where outdoor work is more popular for women than in our own country. There the painstaking work of cross-fertilizing flowers is largely given over to them, as well as much labor which our own country women would hardly undertake.

And then her vineyards, 43 kinds of imported varieties, as well as the principal American ones, numbering in all 13,000. Beside the citrus fruits her orchard contains apples, 30 varieties; plums, 25 varieties; persimmons, 12; mulberries, 10; and in addition to these, apricot, cherry, fig, guava, jujube, loquat, prunes, pears and peaches. Of small fruits she has 10 varieties, strawberry, raspberry and blackberry. Of nut trees there are English walnut, almond, butternut, beechnut, chestnut, hickory, pecan and filbert.

Women often combine fruit growing with bee keeping, poultry raising and kindred occupations. The most successful bee-keeper in Texas is a woman who is also a fruit grower of considerable note. These instances are but a few of many, but are sufficient to show the possibilities of fruit and flower growing for women.

Women writers on horticultural subjects are by no means rare. We find the results of their observation and experience in horticultural reports and periodicals. Notable among them was Mrs. Loudon, wife of the great horticulturist. With her husband she traveled through Europe in quest of information in this line. Besides her own independent writings she ably edited her husband's papers after his death, and prepared many of the cuts which illustrate them. Mrs. Lemon, of California, is also an able writer and authority on horticulture

Much valuable drawing and miroscopic work is done by women under direction. In fruit painting and making of fruit casts they excel. Prof. Budd tells me that the remarkable collection at Kew gardens is a woman's work. A Michigan woman displayed a set of paintings and casts in the horticultural building at the Columbian Exposition, which received much praise, and were pronounced, by good authorities, to be second to those of Mr. Brackett in excellence.

The study of horticulture seems to be gaining favor with women. In agricultural colleges they show an increasing interest in this branch of learning. At Ames it has become an established custom for a number of girls each year to take the lectures on horticulture. Two of the graduates, the Misses Mann of Algona, have laid the foundation for a nursery business. The people of their region do not believe it adapted to fruit growing. These enterprising girls intend to prove that it is if proper varieties are selected. They have already raised quantities of small fruits which find ready sale. In fact they can not supply the demand. England has a horticultural school for women. In Germany a benevolent woman of wealth and position has founded a school of gardening for women. The course of study is two years and the idea is that the student shall qualify for the post of head gardener on estates and in country houses. Girls are also received who wish to study gardening for their own homes. The school is well attended and the pupils work hard.

In Sweden the Noerviken nursery school, has already several young women students. There are two classes, one and two years respectively. The two years' course is for those who intend to make nursery gardening a profession. The instruction is both theoretical and practical, and it is said the young women have shown no fear of manual labor.

It has been my purpose to show something of what woman has done for horticulture, and also something of what horticulture has done for woman. Anything which will induce American women to spend more time in outdoor exercise must be considered a blessing. Have we not here the ideal pursuit to accomplish this purpose offering as an object—for an object she must have—recreation, food for thought, study, æsthetic pleasure and last but not always least, profit.

Our sister state, Minnesota, is, so nearly, situated as we are climatically, that items and notes of their deliberations are very interesting to our horticultural readers, so I will append to our report a few.

NOTES FROM MINNESOTA.

The Minnesota State Horticultural Society, with a membership of 325, must necessarily be doing a great work for horticulture in that state At their last summer meeting the toast, "Horticulture in Minnesota," was responded to in the following happy style by O. C. Gregg, superintendent of their farm institutes:

Ladies and Gentlemen:—Not because it is customary, but because I feel it, I wish to say that I have a very pleasing sensation come over me as I meet you here in Lake City to day. I want to make a personal statement of fact The time was when I regarded a horticulturist in Minnesota as a misguided man, but I always had a respect for you as a body. I thought Minnesota was a land of blizzards and not of fruit, but I have been converted.

I was brought up a Methodist, and I look upon you as brethren and sisters in the great horticultural church. I have come to this belief by reason of experience. I was slow to believe, being, probably, naturally conservative, but I have seen so much of the successful work of the horticulturists of Minnesota that I am forced to believe that it has in it all the elements of success. Perhaps you will say that all I mean is that we can raise choice cherries, etc., but I am satisfied that we are going to make a grand success of that New England product, the apple. We propose to stand by apples on the southwestern frontier, where my farm is, not with the hope only, but with the expectation that we will succeed. I expect today, from branches in southwestern Minnesota, fruit that I shall pluck with my own hand.

Very naturally I regard this from the stand point of one who goes about a good deal over the state. When I go through the streets of Minneapolis and see the little newsboys, I wish they had the privileges I had when I was a boy and could go out into the orchards and pluck all the fruit I wanted, club the trees, etc. But there are many boys on farms even who are hungry for fruit. Very soon, however, we shall have a lot of boys and girls growing up who shall no longer hunger for fruit

I look upon you this afternoon, and I say you are every one of you ministers, and may the Father of all bless you in the noble work in which you are engaged. The work has a brighter look than ever before Some one asked me, "Do you think every one is going to raise fruit?" I said no, but scatter all the seed you can and some of it may fall into receptive soil. You who are old members of this horticultural society can take this consolation; you can say, "I earnestly work for a cause, that has made the state better." You can say that success is with you.

Toast—"The Horticulturist, — While observing the laws of nature, he observes the laws of the land." Response by Hon. R. H. Moore, Lake City.

Mr. President, Ladies and Gentlemen:—I have no notes not even a bank note. * * * * The horticulturist is an observer of the laws of the land. Abraham Lincoln usually fitted in a nice little story, and I am reminded of the story of the physician who was asked how was the health of the community. He answered, "It is distressingly healthy." Though you are horticulturists, you never "raise Cain," and so far as the criminal lawyers are concerned, you never "butter any of his parsnips." Perhaps you occasionally find a black sheep in the class to which I belong, but I believe you will have to search a long way before you will find a black sheep among the horticulturists, yet you will occasionally find one who will steal a row off from his neighbor's raspberry patch.

In this age in which we have a conflict of rights, it is pleasant to think that we have a class in our community that will offset a good deal of the evils that we annually import from abroad.

Toast—"The Horticulturist — The man who in nature's garden works with God." Responded to by Rev. E. B. Chase, Lake City, Minn.

Mr. Chairman, Friends of Horticulture:—I appreciate the honor of being called upon to say a word before this wise and practical body who are to be judged by the divine standard —"By their fruits ye shall know them."

It is because the fruits of horticulture have grown to such perfection, and been such a blessing in ameliorating the general condition of man, that it is every way fitting for brethren who try to conserve the spiritual welfare of a man to plat a wreath with which to crown the brow of horticulture.

Did you ever think the first of all recorded industries was that of the horticulturist?

The Creator, himself, we are told, was a gardener, and that part, I suppose has prompted the form of this toast. For if Kepler's thought be true in the realm of science, "I think thy thoughts after thee, O, God," it is equally true you think God's thought and work God's works. For we read in a work that has many hints on horticulture, that is not, however, quoted as authority on horticulture, that God planted a garden eastward in Eden, and there he put the man whom he had formed *to dress it and to keep it.*

I salute you then as the especially commissioned of God, you whom He called to carry on the work of creation He began. Christ, himself, who showed a most intimate knowledge of horticulture in the parable of the vine and branches, who said, grub out all that bear not fruit, in the miracle of cursing the barren fig trees, who showed his soul was near to nature when he said, "consider the lilies of the field," expressly declared the "works that I do shall you do, and greater works than these shall ye do." Let us wrest these words from their original application and see how the horticulturist illustrates their truth in the line of his grand calling.

The society closed their pleasant summer meeting by a drive around the beautiful Lake City.

In the discussions at their winter meeting the following points were brought out:

Wm. Somerville said the Scotch pine will stand more drouth than any evergreen we have, and will live where almost any of the deciduous trees will starve to death for want of water.

Prof. Fernon, of Washington, D. C., chief of forestry division, said that the Red Cedar has a wider distribution in the United States than most trees. It has a greater range than any tree we have except perhaps the Box Elder. I only recommend planting Red Cedar in the south and southwest.

J. S. Harris stated that he preferred the Aspen Poplar to the Cottonwood.

Mr. Brackett stated that much of the poor fertilization of our fruit trees was caused by rain washing the Pollen on to the ground, so that the wind does not carry it.

Mr. Urie, a bee-keeper, said: I have observed that when we have a good crop of fruit the weather is generally such that the bees can visit the flowers. When we have such a year as last with such weather as we had the bees cannot visit the blossoms. The result is generally a poor crop of fruit. I believe that bees are the finest things that horticulturists can have near their orchards. I have observed that, for thirty or forty years. I think that is why our fruit failed this year.

Prof. Green favors the Virginia crab for a stock for top working, and gives his opinion that the Anison is the most promising Russian apple that has been tried in the state, and that the tree is one of the hardiest. He also regards the Breskora another valuable Russian, and that the Red Wine and Borovinka are blight proof. He reports strawberries a fair crop, with leaf blight quite bad on some varieties, notably Capt. Jack; for fruiting in '94 he has seven hundred seedling plants of the Warfield and Haverland fertilized with Michel's Early.

HIS NOTES.

On new varieties of strawberries desirable kinds are started. Bederwood, a very promising new berry that has done remarkably well with us this season. It is bi-sexual, has lots of pollen and I think it well worth trying as a pollenizer and for market. Its foliage is only slightly affected with the rust.

Bubach. (p) Gave us magnificent berries, but not enough to make a profitable crop.

Boynton. (p) A red berry, size and appearance of the Crescent, but apparently no better.

Crescent. (p)** This old standard variety has done very well this season. In our old bed it produced a far larger crop than in the new bed, but it did not do nearly as well as the Warfield, which, I think, is generally superseding.

Captain Jack. (p)* Was nearly ruined by rust.

Great Pacific. (b) I am somewhat disappointed in this variety. Some of the fruit is large, but much of it is small and irregular in shape and rather inclined to rust.

Haverland (p)***Has done much better than last year, and was in many ways our best berry The foliage is healthy and the berries are elegant. It produced rather more fruit this year than the Warfield.

Jssiie. (b) Was nearly a failure with us this year, as well as at some of our trial stations. I regard it as a very uncertain kind and think there is a weakness in the blossoms that makes it peculiarly susceptible to injury from winds, frosts and heavy rains.

Michel's Early. (*) I think well of this variety as a pollen producer, but it does not produce much fruit and has not been as productive this year as last. Yet its fruit this year was rather larger and better in quality than last. I mean to continue using it as a pollen producer. It is a vigorous grower and free from rust.

Little's No. 7. (b) From John Little, Granton, Ont. Is one of the most striking in foliage and fruit of all that have come to my notice for several years. The foliage is tall, dark green and very healthy. The fruit is long, large and firm, on long peduncles. Very productive and a promising late fruit.

Little's No. 9. (p) Also from John Little. Is a very productive and promising variety of large size.

Little's Seedling No. 37. (p) Resembles the Warfield very much, but it is not quite as early and is somewhat sweeter. Very productive and promising.

Lovett's Early. (b) Is a berry of good color, form and substance, but not sufficiently productive to be profitable.

Enhance. (p) Has produced some very good fruit on August set plants, but needs another season's trial to thoroughly test it. Promising.

Oregon Everbearing. Whatever everbearing qualities it may once have had, it does not show them here, and I rather doubt whether it ever bore over any number of consecutive seasons more than one crop a year. Not desirable.

Parker Earle. (p) Is about ten days behind the Warfield. It has a great lot of green fruit, but during the hot weather much of it fails to ripen satisfactorily. This year a part of the space devoted to it was shaded, with the result that the portion so treated produced a fine crop of fruit while the rest gave a very light crop after the first picking. Plant very healthy and vigorous, but it does not make many runners.

Princess. (p) Seems to be doing better in the hands of its originators and elsewhere than with us. I regard it as generally a profitable berry for the near market. It is of large size and fine color, but rather soft.

Pearl. (p) A beautiful bright red berry that did poorly with us last year, but this year is very productive.

Schuster's Gem. (p) Did remarkably well with us last year, but not so well this. It is of good size and worthy of further trial.

Saunders. (p) Did very well with us last year, but this season seems much inclined to rust.

Warfield. (p)*** The most popular berry grown, and it is fast supplanting the Crescent in this state. It is a better shipping and selling berry than the Haverland. Our customers especially like it for canning purposes.

RASPBERRIES.

The raspberry crop has been a very profitable one this season. Almost every variety has given good returns. Many plantations of red raspberries are affected with the disease commonly called "leaf curl," and it is becoming a very serious matter in many places, where it is spreading slowly but surely. No remedy is known for the disease, but the best treatment for it seems to be the digging out and burning of all affected plants. In starting a new bed, it should be only on new land, and great care should be taken to be used only healthy plants.

SEEDLING RASPBERRIES.

About five hundred seedlings of Schaffer's Colossal fruited this year for the first time. The fruit resembles very closely that of the parent plant, and a number of seedlings appeared fully as valuable as that of the Shaffer. Fifty of these were selected as being worthy of further trial. It is a point of special interest that the seedlings of this variety, which is generally termed a hybrid, should be so uniform and show so much of a fixed type. Three hundred seedlings of Souhegan and Cuthbert were raised the past year.

NOTES ON SOME OF THE NEW RASPBERRIES.

Gladstone. Grows vigorously and produces a little fruit until frost, but what little fruit it does produce is so small and soft as to make it almost worthless, either for home use or for market.

*Golden Queen.*** Continues to be the favorite yellow kind. Its fruit is large and firm. With the exception of color, practically identical with Cuthbert.

*Hansell.** A very early kind that is becoming quite a favorite. It is a rather weak grower, except on rich soils, and until well established it needs high cultivation.

Superlative A new variety sent out by Ellwanger and Barry of Rochester, New York, at six dollars ($6) per dozen in 1892. Fruit on spring set plants, very large but crumbly and of poor quality. Foliage and cane of the Antwerp type.

Champlain. Similar to the above in foliage and cane, but has not fruited here.

E. H. S. Dart writes of the Onatonna tree station:

Preparations have been made for making 2,000 root grafts of about seventy-five varieties, among which are a goodly number of seedlings from the best Russian varieties, also seedlings of the Wealthy and other American apples. Mr. Gideon's noted Minnesota seedlings are all on trial, and when King Cold comes around again as he did in 1884 and 1885 and knocks out all the varieties that he did then and others of like ilk, we may reasonably hope that by noting the survival of the fittest a few varieties may be found of real permanent value. The orchard now contains 600 trees, and 120 more will be added in the spring. All trees have done fairly well, none being injured by cold and few by blight.

Clarence Wedge in his report of show of apples at Freeborn county fair, says:

At the Freeborn county fair there was one of the finest lot of apples ever brought together in the west. The total bulk of fruit shown, amounting to nearly thirty bushels, included fifty-four varieties. The entries numbered 121, and were made by thirty nine exhibitors. It was made in a separate pavilion and attracted as much or more attention than any other feature of the very successful fair.

As was stated at the beginning of this report, our fruit raisers are not measuring up to the needs of the market or their own opportunities; but it is hoped that the past favorable season, the fine exhibits at the fairs and the influence of horticultural meetings will give an impetus in the direction of more and better home grown fruits.

He also gives the following opinion of two of the Russian varieties that are on the recommended list in Wisconsin.

The Hibernal (I mean the entire family, including Recumbent, Juicy Burr, Pendant Ear, and Silken Leaf) is, probably, the next most reliable variety. At the late northern Iowa meeting it was repeatedly declared to be twenty per cent. hardier than Duchess, and no one was heard to dispute. It is noticeable for its early and heavy bearing. Trees in my orchard, five years set, have already paid first cost and all expenses, indeed, have brought in about as much money as Duchess nine years planted. Careful investigation and observation among the orchards from Minneapolis to central Iowa lead me to the belief that I can serve the fruit interests of the country no better than by urging the merits of this variety. J. C. Ferris aptly calls it "The Ben Davis of the North." While it does not monopolize all the pomological virtues, it will, if given the opportunity, afford our people an abundance of apples up to the first of January, and will extend the region of profitable orcharding a hundred miles or more to the north and west. It is, fortunately, a variety commonly found in the nurseries, and I am advertising no monopoly in publishing its virtues.

The Longfield is not a variety of great hardiness, but it is to-day perhaps the safest variety to plant for sale as a dessert apple. It will bear a bushel

of apples a little quicker than any variety I know of, and although a little undersized is quite handsome and about as good in quality as Wealthy. The Wealthy is commonly considered an early bearing variety. With me it has borne a few specimens about as soon as any, but it has taken double the time to carry a crop than has the Longfield. There has been so much evidence brought to show the advantage of top working that I should favor setting the Virginia crab and Hibernal, and top-working them with either Wealthy or Longfield, with a strong leaning in favor of the latter. As an all winter variety the Malinda is attracting much attention. Were it an early bearing kind I would think it valuable in spite of its half hardiness, but life is too short and our climate too uncertain to admit such a variety into the commercial orchard.

Secretary—Wm. Sommerville, one of the most successful orchardists I have ever visited in Minnesota, writes, on care of orchards:

I came here more to take notes and to listen than to talk myself. I will say that in 1862 I set out fifty Duchess apple trees 16 feet apart each way, and if I were to set out 50,000 thousand more that is the distance at which I would set them. I want the whole ground occupied and I want it shaded when the trees get large. A great many of us set our trees here in Minnesota with the expectation that one out of ten of them will live, and the balance of the ground will be cultivated for other purposes. I think that is wrong. We can afford to take better care of a small piece of ground, and thus insure our trees living, than we can of a larger one, if they are scattered too far apart. Of the fifty trees that I set out in 1862, there are forty-nine of them living to day. I have not failed to get a crop of fruit for twenty-five years. The fiftieth tree overbore itself and broke down. My orchard occupies a space of ground about nine by thirteen rods, and it is the most profitable piece of ground that I have on my farm.

I believe it is necessary to feed our trees as much as it is to feed our stock. In the first place, we put on the mulch in the winter, and that retains the moisture in the ground. In the next place, the ground never freezes so hard when it is mulched. There are more trees starved to death than killed by severe winters. The roots are kept cool and moistened by this mulch, and our trees are not subject to blight as they are when the sun has licked up the last particle of food in the way of moisture that the trees can get at. I believe it is an advantage to do this, and I have found by doing it that I have very little blight in my orchard. I have a number of Russian apple trees that have done well. There are a number of our seedlings that are good fruit trees. There is no doubt that we have taken a step in the right direction in this matter of seedlings, and when we get two or three generations of these seedling we will be right at home in raising apples in Minnesota. I am satisfied that we are increasing our yearly crop of apples in this state quite rapidly, and I believe that we shall continue to do so. Of course, whenever we leave the corn belt we do not talk about raising apples, but wherever we can raise corn we may be sure of success

in raising apples. Now, there has been a great deal of talk made in regard to locations for orchards, but I do not think that either Mr. Keel or myself has any better location than other people. It is largely a matter of care and good judgment. (Applause.)

The estimated value of the apple crop in Minnesota in 1893 was $200,000, and one half of same were Duchess of Oldenburg. Mr. R. C. Keel of Rochester, who marketed 3,500 bushels of apples in 1893, gives this mode of handling. Of course crab apples do not require so careful handling as Duchess, but they should be picked before they are really ripe, never putting more than one variety in a barrel. Market for apples should be looked up beforehand, and as soon as they are picked and in barrels, they should be shipped.

In handling my Duchess, I take my barrels to the orchard, new barrels; I do not use anything else. I have found that it does not pay to use old, dirty barrels. New barrels can be obtained from twenty-five to thirty cents apiece, and apples will bring about fifty cents more per barrel than when they are packed in old ones. My packers get instructions before they commence, that they must handle the apples as carefully as if they were handling eggs. Each one is supplied with two half bushel baskets and a step ladder; they pick the apples clean from the trees and bring them up to the packing place. There I have a man, generally one that I can depend upon. He takes the full baskets and sorts and packs the apples, places the first layer in the bottom of the barrel with nice, even-sized, and good-colored apples, stem down. He handles every apple by hand. I do not allow him to pour the basketful into the barrel. After the barrel is full, a little above the rim, I have another man who heads it up; after that is done he turns the bottom end up and puts on my stencil and the name of the variety. No poor fruit should be allowed in the barrel; the reputation has much to do with getting good prices. The windfalls and those that are shaken off in picking are picked up at once and sold for what they will bring.

Last season I sent hundreds of barrels of Duchess to this market, that had been kept four or five weeks, and got a top market for all of them. It is not the overproduction of apples that brings the market down every year, it is the careless handling and the shipping in old, dirty, broken-up barrels. I have often noticed farmers coming into town with a load of apples, hand picked, they would say, but they were poured from a basket or a pail into sacks, boxes or barrels and then hauled in a lumber wagon ten or twelve miles. When they got to market they were not in condition to ship, but had to be pushed for anything they would bring. Such goods are a drug on the market, and it is about time for farmers and other small growers to look into these things and learn to handle their produce in a proper way.

BIOGRAPHY

of that eminent florist, R J. Mendenhall, who was the fifth president of the Minnesota State Horticultural society.

He was a native of North Carolina and came to Minneapolis in 1856. Previous to this, he joined a surveying party in New York City, came west and was on a railroad survey in Iowa almost two years, crossing the state three times. On February 11th, 1858, he was married at West Falmouth, Mass., to Abby G. Swift, daughter of Capt. Silas Swift, and together they came to this (then) young city and planted a home and flower garden. From 1857 to 1873 Mr. Mendenhall was engaged in the banking business. From 1862 to 1866 he was president of the old State Bank of Minnesota, afterwards merged into the State National Bank of Minneapolis. During the financial panic of 1873, the savings bank with which he was connected succumbed to the pressure, and the business thus summarily ended took several years to settle up. Mr. Mendenhall's natural fondness for flowers led him to engage in floriculture as a pastime and future business which has developed into the largest of the kind in the northwest. He was president of the Minnesota State Horticultural society during the years 1871 and 1872. He has done much to cultivate the tastes of the people in this direction, and has been a useful citizen in the city of his adoption for more than a third of a century.

NOTE—The foregoing sketch was taken from the Minnesota report for 1893, and published here as a tribute to the memory of a useful citizen and noted horticulturist Many of our members have visited his beautiful greenhouses in Minneapolis.

SECRETARY.

WHY NOT EXHIBIT AT THE STATE FAIR?

BY E. H. S. DART, of Owatonna, Minn.

I object to what are known as sweepstake premiums in the horticultural department of the fair. I believe these premiums are discouraging to a large majority of the apple producers of our state. A few of the largest growers are pleased. They can pool and divide up the sweepstakes, then come in as producers and rake in all the honors and nearly all the cash, while small growers are left so far in the shade that most of them covet obscurity. It is claimed that these premiums are necessary to secure a good exhibit. It is more essential to have a good show than it is to encourage the production of the best. It occurs to me that if first and second premiums are kept low enough so that third, fourth, fifth, sixth and seventh premiums can be kept well up, competition will bring out a good exhibit or, in other words, if there is something left for the people after the bosses have been provided for, then the people will become more interested; it is also claimed that the sweepstake exhibitor does not come in competition with the producer. I know how that is for I have been there.

In 1891 I gathered my choicest apples, which represented the expenditure of thousands of dollars, and the work of the best part of a lifetime and went to the fair. I entered as a producer and displayed as best I could, staying by my exhibit to answer questions and inform the people. My nearest neighbor entered for sweepstakes and as a producer. He attended other fairs and had gathered in a large lot of bouncing big apples; he covered five times as much space as I did, and he beat me five to one in the show; he pranced up and down before his magnificent exhibit like a fighting cock; and I sneaked around more like a lame spring chicken just out of the swill barrel. What premiums did I get? I do not know, nor do I care; I've had enough swill barrel experience. Do not ask me to repent. I will not again enter my own productions at any fair where nonproducers are recognized.

NOTE —No one who has experience in showing apples at fairs, but has had some experience similar to that of Friend Dart. To show fruit that you have worked hard to produce, and then be beaten by one you are satisfied beyond a doubt, has gathered his fruit from his neighbor's orchards, is unpleasant and humiliating. The man who manufactures oleomargarine is in honorable business compared to this. A man can stand it to be beaten by one who produces his own fruit, but it makes him squirm to be beaten by a fruit gatherer, as Mr. Dart says. I have been satisfied for years that our sister state was making a mistake in favoring those large exhibitions instead of encouraging, more of the smaller growers. Still their plan of paying $2, as first, on single plate, and $1 for second, has has

given the grower of a few varieties a chance to get some premiums. This plan of gathering frnit to show has made trouble and hard feeling in our society in former years, and it is to be hoped that at our coming fairs it will be avoided and a fair exhibition may be made. That will certainly give better satisfaction both for our society and also for the officers of the state fair.

SECRETARY.

WISCONSIN AS A FRUIT STATE.

[As published in the Wisconsin *Agriculturalist*, written by A. J. Philips, West Salem, Wisconsin.]

MR. EDITOR—As your paper reaches many thousand Wisconsin farmers' homes, I will pen you a few horticultural items that may not only interest some of you readers, but may prove a benefit to them, if they are properly located. I will take for my text a statement made by ex-Secretary Hoxie in his report of the fruit exhibit at the great World's Fair at Chicago, where Wisconsin apples and grapes were accorded so much commendation. This statement probably has not been read by many of your readers and may appear an unreal one, but you will remember that Supt. Hoxie had a chance to hear remarks and inquiries from fruit men of many of the different states and to see and know something of all the different exhibits made during the fair, and just at this time when the daily papers are filled with accounts of ruin and disaster to the fruit crops in the south, this statement is well worthy of our careful consideration. It is as follows: "I believe Wisconsin can hold her position with any of the fruit regions, and I would to day choose a site for an apple orchard in Wisconsin rather than an orange grove in California, so far as dollars and cents go to make material wealth."

A gentleman from Illinois who has given much study to the growing of fruits, and having practically retired from active business, said to the writer the past winter: "After looking at and carefully examining the Wisconsin apples at Chicago, I am strongly tempted to visit the fruit locations of your state the coming summer and if I can secure some land that suits me, to purchase it and set out a large orchard." He said, "I was wonderfully surprised at the appearance and quality of your apples." Now, experience has taught us that the farther north an apple is grown, the better it is and of the varieties that are sufficiently hardy for our climate. We can produce as fine specimens as can be grown anywhere, and right here we can readily realize the great obligations we are under to the many northern apple growers, who, through their love of the business and by their persistent efforts, have originated and brought out so many valuable

seedlings, some of which bid fair to supersede many of the old eastern varieties.

Now it is a fact that in many of the central and western counties in our state there is a large amount of high ridge land that is well adapted to apple growing, and I am of the opinion that the time is coming when much of this land will be utilized for this purpose. For the reason that these high lands are quite free from spring and fall frosts, as on examination since the cry of damage from cold has been prevailing in the south, I find nothing as yet that has been injured in my locality. Of course it takes more investigating and greater care in selecting to secure varieties for central and northern Wisconsin than it does in more favorable locations. Still when we think that we have varieties in bearing that have stood the test of 35° to 45° below zero, we feel quite confident in planting and recommending the same to others similarly located. Of our new seedlings the McMahan, Avista, Wolf River, Northwestern Greening and Newell are proving quite hardy and productive and of the Russians the Duchess, Transparent, Hibernal, Longfield, Browny and Golden White are giving me satisfaction, and by using Virginia crabs for a stock I am having quite good success with Wealthy Utters. Fameuse and Malinda. Of the eight crabs recommended by the Minnesota Society at the late meeting, I only endorsed three, to wit: Virginia, Martha Whitney and would add Sweet Russett. This is on my location in La Crosse county. Other localities might change this list. If you buy trees get them grown as far north as where you intend planting them, avoid trees grown on quick, rich, sandy soil. Secure trees grown as near home as possible. Set, if possible, Wisconsin grown trees in Wisconsin. Be quite sure they are true to name and that the dealer you buy from knows what he is selling and you may be reasonably sure of success. In some future number I may give you some account of the origin, history and quality of some of the new northern grown seedlings.

FRUIT IN THE NORTHWEST.

By A. J. PHILIPS, West Salem, Wis.

EDITOR AGRICULTURIST—Since my last was written has been a time of intense interest and anxiety to not only the apple growers but also to the small fruit grower and not only the Wisconsin grower but to the grower in more favored localities.

I had one-thousand apple trees in blossom May 12th—weather fine, the the 13th and 14th very warm, 94 in the shade. Then temperature began to fall the 18th. I saw it snowing so fast between Jefferson Junction and Madison that a bushel could have been easily gathered on some platforms.

It looked blue for strawberries and apples, in the northwest. Thermometer down to freezing the 19th and 20th. Corn, potatoes and garden vegetables hurt considerable in valleys and on low lands but up to this morning, 21st, I have seen nothing injured on my hill, as apples and plums are setting nicely. Though the weather has been very warm at times, I have realized all the time that 12 days in advance of 1893 and 14 days in advance of '92 made the chances for injury much greater than they had been for many years. So I have been waiting anxiously for the crisis to pass as barring freezing and excessive drought the prospects for an abundant crop of fruit, I have never seen better. But when I read this morning that the lake shore region of Wisconsin and Illinois papers both report damage by the recent frosts, and Omaha reports ice one quarter of an inch thick on May 19th; I think that we who are located in Northwest Wisconsin have little cause to complain.

I promised to say something on seedling apples, but this cold weather has taken my attention for a few days. But will now say something of northern grown seedlings and continue it perhaps at some future time. Just at present seedling apples are attracting considerable attention probably owing to the fact that many noted nurserymen and apple growers have expressed in their talks and writings that our future hardy apple adapted to the north would be found among our seedlings. And many of our most enthusiastic growers seem to be competing with each other as to who will be the lucky man that will produce said apple. And to accomplish this will be an honor worth striving for. Already Wisconsin and Wisconsin growers have received words of praise and commendation for our show of seedlings shown at New Orleans and Chicago.

Our Wolf river seedling took more money in premiums than any other seedling shown at New Orleans. Our McMahans are being inquired for as far east as New York. Avista Cions have been sent to Vermont and Colorado by request. Pewaukee is a favorite in many places, Newell attracted much attention in Washington, and Northwestern Greening received the highest premium in fall of '92, by Wisconsin committee as the finest bushel of winter apples collected for the great Fair, and they were grown as far north as Waupaca.

Now I have mentioned only a few, comparatively speaking, that are being tested. For I have some forty different seedlings on my grounds, and other growers and trial stations have many more. But these I have mentioned have stood the test of our climate from 15 to 25 years and have been found worthy of a place in most of our leading orchards, with the exception of Pewaukee which does better in the southwest.

We must remember that while we in Wisconsin have been up and doing in this direction, our sister states with their workers have not been idle. Minnesota through the veteran Gideon has given the world the beautiful and valuable Wealthy. It has given us also the Okabena, Peerless Bret No. 1, Gilbert and others. Iowa has done much to disseminate the Pattens

Greeding and Malinda. Illinois has, through A. R. Whitney, given us that delicious apple and beautiful tree the No. 20.

Some of these from other states have not been tested sufficiently long and in different places to warrant their adoption over a large territory; but all are well worthy of a trial. And with few exceptions have been placed on the market by the originators or disseminators at prices that planters could afford to pay. I am prompted to write this article on seedlings by the fact that many agents taking advantage of the anxiety of planters to try new seedlings are placing some untried variety at the head of their lists as a leader at big prices, as high as a dollar each. Now my advice to planters is do not pay these exorbitant prices. There are plenty of good trees grown in our state to be had at fair prices and from reliable growers, let things at big prices alone.

Our state alive to the interests of our farmers, is trying these new things at our trial stations, and it costs only $1 to be a member of our State Horticultural society and receive the annual report containing not only reports of our trial stations, but you get in those reports the experience of our best horticulturists who have made this branch their life work. And another advantage being a member places you in touch with its officers to whom you can write for any information you may desire as such inquiries are answered free of postage.

April 28, 1894.

Apple Buds Killed.—O. W. B., Manteny, Ill., writes: It was thought when the hard freeze came during the latter part of March that the apple buds were not far enough advanced to be injured but that the cherries would be killed, as they generally start very quickly. However, the reverse proves to be true. It now appears that 99 per cent. of the apple buds are killed while the cherries (at least the Early Richmonds) are uninjured and give promise of an abundant crop. The later varieties of apples such as Rawle's Janet may have fared better as they are not yet far enough advanced to determine their true condition. There is no doubt all the apple trees would have been completely covered with blossoms had it not been for the recent cold weather.