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TRANSACTIONS

OF THE

WISCONSIN

STATE HORTICULTURAL SOCIETY.

PROCEEDINGS, ESSAYS AND REPORTS

AT THE

ANNUAL WINTER MEETINGS, HELD AT MADISON,

Feb. 1, 2 and 3, 1870, and Feb. 7, 8 and 9, 1871.

O. S. Willey, Secretary.

MADISON, WIS.:

ATWOOD & CULVER, BOOK AND JOB PRINTERS, JOURNAL BLOCK.

1871.

STATE OF NEW YORK

IN SENATE

January 10, 1900

REPORT OF THE

COMMISSIONERS OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE

ON APRIL 11, 1899

AND A RESOLUTION PASSED BY THE SENATE

ON APRIL 11, 1899

AND A RESOLUTION PASSED BY THE SENATE

ON APRIL 11, 1899

AND A RESOLUTION PASSED BY THE SENATE

ON APRIL 11, 1899

Wm. H. Miller, Secretary

PREFACE.

In presenting this volume of the Transactions of the Wisconsin State Horticultural Society to its members and the public, I can but congratulate the horticultural fraternity upon the success which has attended your labors during the past, and especially during the year just closed. Through the efforts of a few friends your society now occupies an independent position; your Transactions and reports are hereafter to be published in a neat and substantial manner—alone, and not the attaché of some other body—which may entitle them to a place in the library of every horticulturist, and I trust that the society will have the encouragement and support of each horticulturist, while it has the fostering care of the state. Thus may your future be made even brighter than the past, and your labors be crowned with the success they so richly deserve.

O. S. WILLEY,
Recording Secretary.

MADISON, 1871.

LIST OF OFFICERS FOR 1871.

PRESIDENT,

J. S. STICKNEY..... WAUWATOSA.

VICE PRESIDENT,

A. G. TUTTLE..... BARABOO.

RECORDING SECRETARY,

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A. G. TUTTLE..... BARABOO.

W. FINDLAYSON..... MAZOMANIE.

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G. J. KELLOGG JANESVILLE.

I. J. HOILE OSHKOSH.

J. B. RICHARDSON SHEBOYGAN FALLS.

C. H. GREENMAN..... MILTON.

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LIST OF MEMBERS.

Anderson, M.	Cross Plains.	Lampert, Z. W.	Eau Claire.
Adams, I.	Door Creek.	Lampert, J. F.	Eau Claire.
Algavin, James.	Bluffton, Ind.	Lawton, H. G.	Brodhead.
Altaman, N.	Stoughton.		
Adams, B. F.	Door Creek.	Moody, N. J.	Madison.
		Morrow, G. E.	Madison.
Brown, B. F.	Madison.	Morrow, D. M.	Madison.
Burton, C.	Black Earth.	Mason, G. A.	Madison.
Bardsley, W.	Ashton.	McClay, James.	Madison.
Brown, George.	Woodman.	Moulton, Riley.	New Lisbon.
Bishop, S. H.	Woodman.	Markham, J. S.	Fordville.
Bates, John.	Chippewa Falls.	Mythaler, C.	Monroe.
Blackman, M. G.	West Bend.	Melven, Rev. C. T.	Sun Prairie.
Brown Robert.	Merton.	Mosley, J. W.	Reedsburg.
Brentnell, J.	Wingville.	Moulton, S.	Mazomanie.
Bartholomew, Wm.	Lodi.	McAfee, H. H.	Freeport, Ill.
Butler, A.	Sparta.		
Barney, J. B.	Mazomanie.	Plumb, J. C.	Milton.
		Plumb, T. D.	Madison.
Church, Harvey.	Madison.	Park, W. J.	Dodge's Corners.
Coleman, J. C.	Milwaukee.	Pitman, Frank.	Waukesha.
Cowin, George.	Glencoe.	Peffer, G. P.	Pewaukee.
Cowie, A. B.	Grant.	Palmer, N. N.	Brodhead.
Chase, G. W.	Brodhead.		
Cable, G. W.	Eau Claire.	Robbins, G.	Mazomanie.
Gurtis, F. C.	Rocky Run.	Roe, J. P.	Oshkosh.
Daniells, W. W. (A. M.)	State University.	Swain, S. G.	Baraboo.
DeWolf, M.	Delavan.	Stevens, J. T.	Madison.
Dunning, A. J.	Beloit.	Stickney, J. S.	Wauwatosa.
Daniels, E. W.	Aurora.	Swain, Geo. G.	Baraboo.
Davis, J. J.	Mifflin.	Stimpson, Chas.	Milville.
		Stimpson, M. Sen.	Milville.
French, J.	Madison.	Sherman, J. T.	Brodhead.
Findlayson.	Mazomanie.	Seltzer, L.	Monroe.
Flint, E. D.	Friendship.	Shook, S.	Monroe.
Ford, J. W.	Mazomanie.	Simonds, B.	Baraboo.
Flint, W. S.	Princeton.	Sadler, W. L.	Lincoln.
		Shields, J. T.	Eau Claire.
Gripper, J.	Madison.	Seymour, A. M.	Mazomanie.
Gould, I.	Beaver Dam.		
Greenman, C. H.	Milton.	Tuttle, A. G.	Baraboo.
Gange, John.	Monroe.		
Gibson, Joshua.	Potosi.	Waters, Chas.	Springville.
Grub, Jouq.	Eagle Point.	Willey, O. S.	Madison.
Greenman, H. H.	Whitewater.	Wilkins, F. B.	Bellefontaine.
		Wedgewood, G. R.	Monticello.
Hobbins, J. (M. D.)	Madison.	Wilcox, E.	Trempealeau.
Holle, I. J.	Oshkosh.		
Hobbins, W. (M. D.)	Madison.	Zumbremnen, —.	Monroe.
Holt, M. A.	Madison.		
Horsfall, J. W.	Milville.		
Hill, John.	Friendship.		
Hoper.	Monroe.		
Hills, Edwin.	Lincoln.		
Hunt, S.	Evansville.		
Judd, R. J.	Oshkosh.		
Kellogg, G. J.	Janesville.		
Kiser, C.	Madison.		
Knapp, J. G.	Madison.		
Lawrence, F. S.	Janesville.		

NEWSPAPERS.

Dodge County Democrat	Juneau.
Oshkosh Journal	Oshkosh.
Plover Times	Plover.
La Belle Mirror	Oconomowoc.
Grant County Witness	Plattville.
Richland Co. Republican	Richland Center.
Baraboo Republic	Baraboo.
Oshkosh Times	Oshkosh.
State Journal	Madison.
Democrat	Madison.
Milwaukee Sentinel	Milwaukee.
Western Farmer	Madison.

AN ACT

TO

PROVIDE FOR THE INCORPORATION OF THE WISCONSIN STATE HORTICULTURAL SOCIETY, AND THE PRINTING AND PUBLISHING OF ITS TRANSACTIONS.

The people of the State of Wisconsin, represented in Senate and Assembly, do enact as follows:

SECTION 1. The Wisconsin State Horticultural Society is hereby declared a body politic and corporate, and by that name it shall be known in all courts and places whatsoever.

SECTION 2. The objects of the Society being to improve the condition of horticulture, rural adornment and landscape gardening, it shall be allowed for these purposes to take, hold and convey real and personal estate, the former not exceeding in value five thousand dollars.

SECTION 3. The corporation shall possess all the powers and privileges conferred, and be subject to all the liabilities imposed upon corporations, by chapter seventy-eight of the revised statutes, so far as the same may be applicable.

SECTION 4. The State printer is hereby directed to print on good book paper, fold, stitch and bind in muslin, (uniform in style with the last volume published, of the transactions of the State Agricultural Society), two thousand copies of the transactions of the State Horticultural Society, embracing the years 1870 and 1871; *provided*, the number of printed pages of said volume shall not exceed two hundred, and to deliver the same to the Superintendent of Public Property, to be by him distributed as follows, to wit: Three copies to each member of the Legislature, fifty copies to each county or town horticultural society, who shall report its organization with officers elect, and number of members, with an abstract of its proceedings, for publication in said volume to the Secretary of the State Horticultural Society, and fifteen copies to each county agricultural society, twenty-five copies to the State Agricultural Society, twenty-five copies to the State Historical Society, fifty copies to the State University, and all remaining copies to the State Horticultural Society

SECTION 5. Hereafter or until the Legislature shall otherwise order, the transactions of the Wisconsin State Horticultural Society, together with abstracts of the reports of other horticultural associations of the State, so

far as the same may be furnished, shall be annually printed, published and distributed in like manner and number as provided in section four of this act, on the order of the Governor.

SECTION 6. So much of chapter 74, general laws of 1868, sections 2 and 3, as provides for the publication of the transactions of the State Horticultural Society in connection with the State Agricultural Society, and any additional copies of the same, is hereby repealed.

SECTION 7. This act shall be in force from and after its passage.

Approved March 24, 1871.

TRANSACTIONS
OF THE
WISCONSIN
STATE HORTICULTURAL SOCIETY.

1870.

TUESDAY, February 1, 1870.

President Dr. JOSEPH HOBBS called the society to order at 7½ P. M. About fifty members in attendance.

W. T. LEITCH, President of the Madison Horticultural Society, gave the

ADDRESS OF WELCOME.

Mr. President and Gentlemen of the State Horticultural Society:

Your annual assembling in this city has already become an event looked forward to with interest and pleasure by the local society of this city, which I have the honor to represent, and they have imposed upon me the pleasing duty of expressing to you their hearty welcome and sympathy in the objects which you have at heart. The field which you have entered is a wide one, and certainly needs to be well and fully occupied in this state. Our climate is such, that to make horticulture successful, requires a large amount of study, observation and patient scientific investigation. We have enemies in the winds, and in the great extremes of heat and cold, and it is for you to inform the people of this state how to fortify and protect themselves against them; you have not only to point out the enemy and the means of defense to the good people of the state, but your mission is also to incite them to avail themselves of the means of defense at their disposal. The man who makes two spires of grass to grow where but one grew before, has been well called a public benefactor, and the man, or body of men, who shall induce the farmers of this state generally to protect their farms, orchards and homes by belts of timber, and shall induce them to set apart a portion of every prairie farm to the growth of fruit trees, and who by word and deed shall cause the people to look upon every man who wantonly wastes and cuts trees and timber as a public enemy; who by precept and example shall persuade the people to adorn and beautify their homes with flowers

B.—HOR.

and shrubs, and who by experiments and study shall ascertain and point out to them the fruits that will grow and thrive in this state, and shall teach how to grow and care for them, so that they can plant with a certainty of eating of the fruits thereof in due season, will be entitled to the eternal gratitude of the people of the state of Wisconsin; and the benefactions which this and kindred societies, if true to their vocation, may bestow in wealth, happiness and comfort upon the people of this noble commonwealth are incalculable.

Appreciating to the fullest extent the labor you have to perform, and believing that the members of the State Horticultural Society are possessed with the noble zeal to worthily perform it, the members of the Madison Horticultural Society bid you welcome to this city—knowing that your discussions will instruct and encourage us in our work.

It is with great pleasure that I inform you that the Madison Horticultural Society was never in a more prosperous condition than at the present time. The interest in its work and discussions is constantly increasing in this community. During the last year we have had large accessions in membership, many of them of much scientific and practical knowledge of horticulture. At our public exhibitions there has been constant increase in the number of exhibitors of plants, flowers and fruits, and we believe we can with truth say that the evidences of our work can be seen in the increasing beauty of our city and the homes of our citizens.

Then, with the fellowship of a common object, we offer you the right hand of brotherly greeting—trusting that your brief sojourn here may be as pleasant and agreeable to you, as we know it will be profitable to us.

President HOBBS briefly responded, and read his

ANNUAL ADDRESS.

Gentlemen:—In looking over the reports of several state horticultural societies for the past year, I find that I have been trespassing upon your good nature by the lengthiness of my annual addresses. Thus admonished, and more especially as I have nothing to present to your notice on this occasion requiring anything more than ordinary consideration, my address to-night will be as brief as custom can demand.

Then, gentlemen, to commence with, let me congratulate you as a society upon your last exhibition, which, in spite of an almost unprecedented wet season, preceded by an equally unprecedented season of drought and an almost snowless winter, was distinguished by a better collection of fruit than ever before exhibited in this state. The marked feature, however, of the exhibition, to horticulturists, was the great variety of good and new fruits originated within the state—fruits eliciting the highest praise and expressions of astonishment, again and again repeated, from Dr. Warder and from members of our own society. I would also offer you my congratulations upon the very complimentary manner in which your last year's discussions and papers have been received by the horticultural press and the public. Such a report as your last is a credit, an honor, and a material service to the state. Nor is it less a matter of congratulation that the most friendly and harmonious

feeling continues to exist between the parent and the local societies, as well as between the state agricultural and our own society. I wish, gentlemen, that I could also congratulate you upon another interesting feature of our society. I mean the experimental gardens. All I can say of them here is that the trees, shrubs, vines, plants, etc., are flourishing, but that few additions have been made to them since our last meeting.

And now, with your permission I will give you some of the suggestions which have occurred to me from time to time in relation to the interests and the future of the society. We shall want a larger hall for our next annual exhibition, and I have little doubt but that we can have it, or, at least, have our present hall enlarged, if we ask for it. This is a matter that should be looked to early, for the reason that much dissatisfaction was created among the exhibitors at the last show by the want of space, and among the visitors from the same cause. And I would like, now that the grounds have become the property of the public, to see the building permanently ornamented with horticultural surroundings, which can be done partly by drawing upon our experimental gardens and partly upon your nurseries.

From the great and increasing variety of new fruits presented at our fairs, particularly at the last one, it has become a matter of the greatest importance that our committee on Nomenclature should have a considerable addition made to the number of its members. And that it should be required to *name* new varieties, not already named, but originating within the state, which are entered for competition, and to correct the errors in naming, always to be found among the old varieties—and to do this as far as possible before the judges commence their labors or make their awards. For various reasons I wish to urge this point. Our premium list is always headed with the condition—that all fruits entered for competition must be named. Yet at the last show I saw bushels of apples unnamed entered for competition and premiums awarded to them. I can neither understand how justice can be done to exhibitors, or instruction—the great object of such shows—be given to the public by such a manner of proceeding. The rule requiring all fruits entered for competition to be not only named, but correctly named, should be rigorously insisted upon by the judges. It is time that the society began to sweep away the confusion of conflicting of names prevailing among our fruits.

Hearing as I have, and as undoubtedly we all have, of the continuous failures of fruit tree planters in this state, I have per force, as it were, been led to think much of the proper remedy or preventive; and it has occurred to me, again and again, that it would be good policy on the part of this society to urge upon the public, or at least upon that large portion of it beginning fruit-growing, but not conversant with horticulture, a different line of practice from that now in vogue in the selection of varieties. My own opinion is that a radical change might be made in this respect with great profit to all concerned—the legitimate sellers and the buyers. The policy I venture to suggest is this: The planting of such fruit trees, and of such fruit trees only, as we know will grow an eatable fruit in any and all the peopled parts of this state. It is almost in vain, as far as I can judge, to try to stop the indiscriminate purchasing and planting of fruit trees, now everywhere observable in this northwest, by any other and less radical method. Tree peddlers and agents, eastern hor-

ticultural and agricultural papers and journals are doing infinitely more damage to the progress of horticulture in Wisconsin than can easily be believed, except by those acquainted with the matter. Our climate is taxed with an immensity of mischief to our orchards and gardens and vineyards that is solely attributable to the misdirection of outside writers and the cupidity of outside nurserymen; for it is in vain for these latter to claim that they are not responsible for the doings of tree peddlers. If nurserymen would not send out these notorious bark-lice gentlemen, or connive at their doings, then would it be impossible for them to invade us. Comparatively speaking, but few of the tree-planters in our state receive our reports, or even take an agricultural or horticultural journal; consequently they are at the mercy of the traveling agent, who too generally sells that which he has to sell, irrespective of its adaptability or name. As a natural result, most of his stuff dies, or living, is worthless, and the buyer, discouraged, refuses in the future to buy trees. Nor does the evil effect stop here. It spreads to his neighbors, and a public injury is thus inflicted. The practice for this state should be, as it seems to me, to begin with the purchase only of the most hardy trees—something that will grow to a certainty, and that will bear to a certainty, and that to a certainty can be used by the family with pleasure and profit. Therefore, in preference to planting trees with fine names, and getting nothing from them but disappointment and disaster, I do not hesitate to recommend beginners on a small scale, farmers with small farms, and others not conversant with fruit trees, but who want to grow apples without trouble and without risk of failure, to begin with the Siberian. We have a variety of them; they will grow anywhere with us; they are good and early bearers, and though called crabs, are, at least some of them, like the Transcendent, Hyslop, etc., well worthy the name of apples—good fruit. This is what I call beginning at the right end—at the bottom and not at the top of the ladder. Let us teach people to grow that which they can grow with a certainty, and afterwards they will learn to select for themselves. I would educate up from the Siberian, and not, as is so often the case now, down to nothing. Then, in order that the next step may be taken just as safely, let us see to it that our reports, with our list of recommended fruit trees, are scattered broadcast over the state, and that our nurserymen, in their circulars, recommend the taking of our own agricultural and horticultural papers, where our people will find just the kind of information they want—I mean local information. And again, let our nurserymen direct their efforts, for some years to come, to the raising of just such few varieties of fruit trees as we know will grow, rather than expend their efforts in raising a great variety, whose living or worth is uncertain. By thus confining their business and concentrating their energies and capital, my belief is that our people can be supplied by our own nurserymen; and this is the most powerful weapon, *home supply*, to use against tree peddlers, agents and outside injurious influences. If my views are extreme, so too are the evils I speak of. I must confess, gentlemen, that it is with considerable hesitation that I have brought forward this Siberian recommendation, and I do not know that I should have dwelt upon it so much, had I not found myself supported by so much better a judge in such matters—I mean Dr. Warder. “You have,” said Dr. W. to me, at the state fair, while conversing about this very plan, “to educate your

people in horticulture, and in order to do so, you must begin at the beginning, and not at the end. Give them fruit, and they will soon want good fruit." One word more in relation to what I have just said. In expressing my opinion about the influence of outside horticultural papers and journals in this state, I would not have it understood that the slightest disrespect is intended, or that my design was to prevent their circulating among our people. I am simply contending that their horticultural directions are not applicable to this state, and that our best horticultural teachers are to be found among the most experienced fruit-growers of our own northwest.

The suggestion I have just made may be viewed differently by different members of this society, but the suggestion I have now to make will, I know, meet with your general approbation. We have long felt the need of a state entomologist. As horticulturists, we see and feel the importance and absolute need of such an officer—more so than does any other part of the community. Some of the older states, and indeed some of the younger states, have made such appointments; and I trust the time will soon come when our own state will follow their wise example. We are an agricultural people, and as such are afflicted with almost every plant-destroying insect on this side of the continent; and while other countries and states are seeking, with success, for means to diminish or avert the ravages of such plagues, we should not be folding our hands, awaiting for something to turn up, but be following the examples of our more intelligent neighbors. Therefore, I suggest that before you separate you elect, as entomologist to the State Horticultural Society, Professor Daniells, of the Wisconsin State University. I venture to make this recommendation simply because the professor is the best man I know of for the place, and because I know that he will spare no pains to serve the society and the people. I believe, also, that it will be greatly conducive to the interests of the horticultural and the agricultural societies of this state were you to appoint a standing committee on meteorology.

One more suggestion and I have done. We all know of our failure, as a society, to procure an appropriation last winter from our legislature for the purpose of carrying on our experimental gardens, and for the advancement of the science of horticulture in this state. We were kindly recommended to the legislature in the governor's message; we had been earnestly recommended to the favorable consideration of the legislature by President Chadbourne, of the State University; we had the assurance of the leading members, both of the Senate and Assembly, of their support, and the recommendation of the committee on agriculture, who reported our bill, and yet we failed. I could tell you the secret of our failure. It was caused by a little accident common enough in all our houses. The Assembly was a little out of temper on the day our bill was introduced, and therefore did just as we all do in the like state of things—what it ought not to have done. The speaker, whilst expressing his regret to me that the bill had not passed, assured me that had it been brought up a day sooner or later it would have carried. Now, so far as I can judge, there is nothing very discouraging in all this. We must repeat the attempt, and renew it again and again, if necessary, until we are successful, as successful we certainly shall be if Wisconsin remains an agricultural state. The horticultural

interest is the interest of agriculture. Practically speaking, if they are not one, they are too intimately related to be easily divided.

The efforts made by this society to advance the interests of horticulture in this state are everywhere acknowledged and appreciated, not only by our own people—as is shown by the formation of a number of local horticultural societies, the increasing crowding of visitors in our horticultural hall at the state fair, the crowding of the legislative halls to listen to our annual discussions and addresses, as well as for the demand for our transactions (published, be it remarked, by order of the legislature for the benefit of the people); but beyond and beside all this, by the people of other states, as is evinced by the very flattering things said of us in their press and state societies. So with regard to the experimental gardens, to speak of the liberal and handsome donations made to it by our own members, may scarcely be in good taste; but it is nothing more than simple truth to say that this society has originated and conducts the first and only state experimental horticultural garden in the United States; that it is in part planted by the generosity of our members and in part by handsome contributions by nurserymen in different parts of the country. To state also that free horticultural lectures have been given by members of this society to the students of the State University; that it is one of the cherished objects of the society, not only to teach horticulture theoretically but practically, but to disseminate through these students, and the members of the legislature, and the local horticultural societies, all the information to be gained by experiments in these gardens, as well as the trees, vines, plants, shrubs, etc., which are found suited to our state; in fact, to imitate to some extent, but on a more impartial basis, the action of the Agricultural Department at Washington—is but doing simple justice to ourselves, and is, in fact, due to the legislature whose confidence and assistance we are seeking.

Such, it seems to me, should be the course of argument addressed to our legislative bodies. Let us show them that we are earnest, capable and disinterested men, doing a good, useful and necessary work. Let us give to the state our services as we have done, and be the first to donate to the people, and we shall find that the legislature will do as the people have already done—acknowledge our services and comply with our wishes, as they are already pledged by implication to do, in the publishing of our transactions. If our transactions are worth publishing by action of the legislature for the benefit and honor of the state, surely our practical labors in the experimental garden are equally worthy of recognition by the same intelligent body. Theory and practice should not, as it seems to me, be separated by legislation,

There is another reason why the state should encourage the experimental garden. Horticultural experience and experiment everywhere show that plant-life depends for its character upon the conditions surrounding it. Not only climate and soil, elevation and exposure, a dry and a moist atmosphere, but also an infinity of circumstances—all deserving of study, because all playing an important part in determining the very color, form and character of what is grown. Such influences, with their relative effects, are everywhere acknowledged and taken advantage of by the scientific horticulturists of the old world. And let me ask, to whose benefit does

such knowledge accrue if not to that of the people? If I originate a new fruit or improve an old one, is it not an additional luxury to you who eat it—another contribution to, and article of business—another means of creating wealth as well as of imparting pleasure and giving food? Is there not, then, a manifest propriety in the state lending its aid in these researches, made by men whose sole object is the benefit of the state itself? But the response may be to the effect that such matters are best left to individual enterprise. Such a response, however, carries with it a very transparent contradiction, in the fact that many of our states—Illinois on one side of us and Iowa on the other—acknowledge by a state appropriation the value of horticulture to their people, while the general government has long, at a considerable cost, imported new seeds and fruits, and plants, and by its experimental garden, at Washington, sought to introduce and acclimate them. All I ask is, that each of the states follows the example and helps the good work of the general government.

With these views, with some of the facts and merits of the case before us, it becomes my duty to recommend another earnest appeal to the legislature for an appropriation to this society for the purpose of carrying on the state horticultural experimental garden, and for the advancement of the science of horticulture in Wisconsin. We are but a department of the State Agricultural Society, and consequently are without funds for such a purpose. The University is in a like condition. So that, unless we can obtain assistance from the legislature, our gardens, so prosperously begun, must, to the dishonor and detriment of the state, become a loss and a failure.

In conclusion, gentlemen, it becomes my painful duty to allude to the death of the late Hon. B. F. Hopkins, member of congress for this congressional district, and some few years ago president of this society. Mr. Hopkins was not a horticulturist, but he was a friend to horticulture and a helper in everything calculated to promote the interests of his adopted state. He accepted the position of presiding officer over this society for the purpose of giving it a start and a stand in the estimation of the people, and I speak of him the more feelingly, that he was not only a personal friend, but that it was by his advice that you did me the honor to elect me your president. He has gone from among us, a tree withered in its prime—and for this reason the more lamented and the better remembered.

Mr. O. S. WILLEY then read the

REPORT OF THE RECORDING SECRETARY.

Mr. President and Friends of Horticulture:

The official position which I occupy renders it my duty, as well as pleasure, to address you at this time, reporting the year's progress and the prospects and desires of the future. But as I discharge this trust, I assure you that I also, like your President, shall endeavor to be brief; and ask your attention and careful thought to the lessons of the hour.

It is gratifying to know that pomology has not been stationary, but has kept at even pace, and even in advance, of the other arts and sciences of the day. Few, if

any, of the enterprises of the day exhibit so marked improvements as that of the culture of fruit. The doubt which rested upon the many ten years ago is now scarcely mentioned—but instead, men are talking of their fruit farms, and calculating upon the returns of their orchards and vineyards with as much certainty as any other farm crop. With a single exception, 1869 has been remarkably fruitful. The apple crop was very heavy; all small fruits very abundant, except grapes, and also, excepting grapes, were well ripened. It is one of the duties of this meeting to inquire what was the cause of the insipidness of most small fruits the past season, and the partial or total failure of the grape crop. Another marked token of the signs of the times is the formation of horticultural societies. This association was formed in the fall of 1853—but sixteen years ago; struggling for an existence—half dead, with the other half but little better for twelve years—your life-span may be reckoned to date from 1865. Since then, how changed the scene! New life, new energy, new sorts—and all move on with a record none need be ashamed of; and with this progress, local societies are springing up in all parts of the state. Six have previously been reported; two have been formed during the past year, viz: Milton, Rock county, and Leon, Richland county. An effort should be made to have all these societies more efficient auxiliaries to the parent society. Still one more sign of progress is in the demand for horticultural reading, and we are glad to report that the supply equals the demand. With a decided improvement in the old and reliable *Western Farmer*, we have now a new candidate for public favor, the *Western Pomologist*, published at Des Moines, Iowa, by Mark Miller; and I am glad to note that a worthy and esteemed colaborer of our society and one of its founders, is the editor and proprietor. These are omens of good, and may their influence never be less, but grow stronger and more extensive till they shall be a weekly visitor to every family in the state! Then will horticulture and its kindred labors prove labors of love. Meanwhile, let nothing dim your brightest prospects, and ever hopeful, go on—

“ Give new endeavors to the mystic art,
 Try every scheme, and riper views impart.
 Who knows what need thy labors may await?
 What glorious fruits thy conquests may create.”

The marked feature of the year has been the bringing to notice of new varieties—although this is not confined to the efforts of 1869 alone, but is the culmination of a series of years. This progress I would note as one of the dangers of the times. Within a comparatively short space of time fruits have increased almost beyond belief; for instance, but a few years since two hundred was the limit of the apple list. Now Mr. Downing enumerates 1840. Pears have increased from a little over 200 to about 1000; cherries from 75 to nearly 200; plums from about 100 to nearly 300; currants have thribbled; raspberries six times as many now as formerly; strawberries number 250, or more than seven times the former catalogue lists; of native grapes we have nearly 150, or about twelve times the number of fifteen years ago. Of other fruits there is as marked an increase, so that turn which way we will, new seedlings are offered—each thinking he has an acquisition. Some are fair to good—but the large proportion, of course, are no better nor equal to the

named sorts now in our books. In view of this, too great caution cannot be used in accepting and naming the seedlings placed upon exhibition. For, while such labors are worthy of all commendation as triumphs of the noblest ambition, conquests which scar not, nor leave an unhealed wound, upon memory or heart, nor stain upon the hand, and are worthy the life and labors of any man or woman, yet the danger is ever here, viz: of bestowing names unworthily, or in too great haste, or of re-naming a sort already in the books.

I would call your attention to the labor of a thorough revision of the premium list. It is very much to be desired that this be done while the society is in session, that all may participate in its revision; and not as heretofore, be left to the executive committee. There should be some radical changes made, many of which have been suggested from time to time, and more probably will be while you are in session. But whatever may be the result of a general revision, we would respectfully urge the using of as large a list as practicable of horticultural journals. The reason of this is two-fold. It in a measure compensates the publishers to whom we are indebted for much service by way of advertising, and without whose aid we could hardly survive. Then again, it is a means of circulating knowledge, and many may thus become readers of the horticultural press who had never done so before. So that, while we help the publisher, we are also educating the people to a stronger desire for horticultural progress.

A special feature of addition to the premium list should be that of encouraging a system that shall give us better reports of committees. As worthy of imitation in this respect is the report of the Boston Horticultural Society. It is not enough for the world to know that one takes the first premium and his neighbor none. The objects are, or should be, two-fold, viz: to educate the people, and to encourage horticulture. We are free to say that the masses do not know a good, or perhaps better, a perfect specimen of few sorts, hence the labors of examining committees may well be given to writing out not only the reasons why Mr. K. takes a first premium but *why* others have taken none. It is not enough to say because they were the best; we want to know why others were not just as good. Was it because they were over size or under size? I have only time to allude to it here. Many things will suggest themselves to you in this connection, and I would urge that a premium be offered of sufficient amount to encourage good reports from the chairmen of the several committees. Such reports need not be presented till the winter meeting after the fall exhibition—being then in time for publication in the volume of transactions. It is a subject worthy your consideration, and a source of gratification to the future officers, if the manner of arranging the fruit at the fairs should be discussed at some length. In the department of cattle and horses, they are classed as best Roadsters, best Devons, etc. Now is it not well to inquire if we may not have our fruit similarly classified. Best three, or five, or ten sorts, all to occupy a table by themselves, and with a suitable card printed thereon to designate the place the fruit occupied in the premium list. This manner has but one objection to it, viz: that mentioned by our friend Mr. Stilson, in a late number of the *Western Farmer*; and while this (the handling of fruit by visitors) is worthy of all consideration, yet are not the advantages more than sufficient to compensate. The great convenience

of this system to the various committees, and the better opportunity for visitors to study and compare sorts competing for the prize—it being one of the chief objects of the society to afford facilities for the 40,000 visitors to see and inform themselves—I say will this not more than counterbalance the inconvenience spoken of above, which inconvenience I hope might be remedied before another fair, by more room to our building, thus enabling us to give a wider space for the exhibitors' aisles? With this brief notice of change, for the fall exhibition, I pass to what I have no doubt you are all anxious to hear something of, viz:

The Horticultural Gardens of this Society.—And I am sorry to be obliged to report any less favorably than in my last annual report, and perhaps I have no reason to do so, yet, under the present arrangement, we cannot say that we are likely to get the benefit of such a garden as the founders have a right to expect. The reasons of this are obvious to those who have participated in its management, and now, without a complaining spirit, I shall speak briefly of its objects, how managed, and make suggestions for the future. Our idea of an experimental garden is one in which different fruits, trees, plants, shrubs and vines are grown, and a complete record of the same is kept. For instance, if vines, when set, age and sort, growth from time to time, how trained, when pruned, winter protection, what and when given, condition of vine when put into winter quarters, and date of same, in what condition it wintered, and time of uncovering in the spring. This now, compared to or with some other sort, other things being equal, and we have gained some knowledge that ought to be of public good. I am sorry to say that under the present arrangement no such lessons of instruction are gained; and why? The entire planting and care of the grounds are left to the farm superintendent, under the general supervision of the President of the University, who, I rejoice to know, has a love and desire for the success of these grounds beyond your most sanguine expectations. The grounds have been reasonably well cared for. Donations have been limited, both in number of contributors and quantity. A. S. Fuller, C. H. Greenman and A. G. Tuttle were the principal ones who forwarded donations. Plants have grown reasonably well; but I am sorry to report that it is next to impossible to keep up a record as mentioned above with one set of men to do one part and another to do the rest. For instance, when are the strawberries, grapes and other plants to be uncovered? Your secretary goes out with paper and pencil; farm superintendent has no time or men to attend to it to-day; will be ready at such a time; then the secretary, perhaps, is miles away or busy in his other affairs. The remedy is simple and easy. The department of agriculture at the University is carrying on and conducting experiments all the time. Their time is fully occupied. What can be done? I will tell you. These grounds are nominally under the care and management of this society, although the regents have really paid the expenses, and what we need is that they allow this society to expend a certain amount of labor in the planting and care of these grounds, not necessarily more than it now costs them. By this means this society will be enabled to direct what shall be done, and place a laborer there who is competent to record the various items essential to making a history. This is the first thing to be gained. Without it we can see but little encouragement for continuing the care of the garden. After this there should be some

definite plan for a continuance. The former system of soliciting donations, while it is well to a certain extent, is poor when continued as a dependence for the entire stock to plant. My own idea would be to decide on some one or more things that it is desirable to test. For instance, there are about one hundred and fifty varieties of the willow. What finer collection could there be than to have these arranged in rows or groups and their value fully tested for this climate? But how to get these? For this purpose we should appropriate a given sum for the purchase of plants, the Secretary never forgetting to use his soliciting power for the general good. By this means we may be enabled to focalize our efforts, expending them one year upon one thing—another year some other branch may be taken up. I mention the willow as it suggests a broad and very interesting field of labor. Others are just as much so. Even that much neglected bush the currant, numbers in the list about thirty named sorts; and yet how few in our state ever saw a half a dozen sorts. And so we may continue the list of subjects or items of special interest which should be taken up from year to year, as time and means are given us. Nor is this, gentlemen, like an idle tale, to be wafted away from us. There is great good in store from our labors. A plan can be matured which will prove tangible and result in great good. Shall we put our shoulders to the load, and with our joint action resolve that the sons of Pomona in the Badger State will lead the van in the successful organizing and carrying out an experimental garden? A state like ours needs just such a garden—a place where every known fruit, vine, and especially the small fruits, may be tested, not so much for profit—though in time it may grow to be a source of income—but particularly as a source of information to those who would be encouraged to plant orchards and ornamental trees if they knew what to plant. Another reason for requiring the continuance of this work is that we may have some place where all the old and new sorts may be congregated, worked in some manner so that they will fruit at the earliest possible moment, and by comparison of sorts very much can and would be done to correct the nomenclature of our present lists, and these lists, so corrected, should become the authority of the state. This garden in time should grow to an influence of no mean proportions. Imagine for a moment a thousand varieties of apples growing there, five hundred of pears, one hundred or more plums, and as many grapes and strawberries, not to mention other fruits, ornamental trees and plants. With a managing committee of say three of your best pomologists and botanists, whose duties should be to visit as often as might seem necessary the garden, comparing the various fruits and noticing its progress and condition. Will any one present say that such a work is not worthy your best efforts? Might it not become a labor of love of this society, and the pride of the state, to which other states may point with envious pride? Still another benefit, and one which to my mind is of incalculable benefit to the state, is the influence it would have upon the young men, students, who will see with honest pride the fruit resources of their state, and in their leisure learn to study its development, from thence the fruit sections or localities of their own homes, and when they leave their college life they will have learned what the books do not teach—practical horticulture; its effects will be known and read of all men in the renewed activity in tree planting.

Can our state officials do less than to grant a helping hand for the encouragement of one of the *most* useful of the industrial pursuits?

The Secretary laid before the society a communication from P. A. CHADBOURNE, LL. D., and President of the University, in relation to the experimental grounds on the University farm, in which he expressed the willingness of the University to do any team work for this society, but could not, for want of means, perform the ordinary labor and care now demanded by the garden, and keep the required records. He thought the state should allow the society all the money needed to conduct the experiments in this ground, where the advantages of the University roads, fences, screens, etc., would allow every cent expended to tell to the greatest advantage in the experiments upon the plants themselves. Such experiments would furnish subjects for discussion at meetings of the society, and also the successful ones could be repeated and proved by the members, and thus the fruit capabilities of the state could be learned thoroughly in a short time.

The Secretary also read a communication from ISAAC J. HOILE, Corresponding Secretary of the Oshkosh Horticultural Society, inviting the society to hold its next meeting at Oshkosh, and promising facilities for the accommodation of the members and the society.

Judge KNAPP introduced to the society Messrs. SCOFIELD and McAFEE of Freeport, Illinois, as representatives of the Northern Illinois Horticultural Society, who were in attendance, and moved their admittance as delegates to this meeting. The motion prevailed and they were admitted to seats.

Mr. SCOFIELD said he came specially charged to urge the joint action of this society with the Illinois society for the abolition of duty on imported seeds.

Mr. McAFEE said he had brought with him a *lignarium* of the native woods of Stephenson county, embracing 49 genera and 168 varieties, which he would explain during the session. He also alluded to the position of Wisconsin, so far to the north, and yet it suffered less than regions farther south from changes of climate, though it required plants adapted to its condition.

THE TREASURER'S REPORT

Showed that he had a balance on hand of \$326.31, and that there were no demands outstanding. The report was referred to the committee on Finance.

COMMITTEES APPOINTED.

Committee to prepare and bring forward business, Messrs. KELLOGG, TUTTLE and GREENMAN.

To confer with the State Agricultural Society in relation to the annual exhibition, Messrs. HOILE, MASON and STICKNEY.

INDEPENDENT MEETINGS.

Considerable discussion arose upon the propriety of holding fairs independent of the State Agricultural Society, in which Messrs. LAWRENCE, KELLOGG, PLUMB, HOILE, WILLEY, STILLSON and DANIELLS took a part. This discussion manifested a growing desire for an independent organization, and action, as soon as it could be done, but resulted in referring a resolution that the committee of conference be instructed to ask for \$700, to be distributed in premiums; and also that this society select one of the speakers for the annual fair.

The committee of conference subsequently reported that they had agreed with the agricultural society about the annual fair, and that that society had appropriated to this society \$600 for premiums for the exhibition, to pay the usual incidental expenses, and give the horticultural society a voice in the selection of a speaker, if one was secured. The report was accepted and the State Agricultural Society so notified.

WEDNESDAY, 9 A. M.

President HOBBS in the chair.

The report of the committee on Nomenclature being called in its order, its consideration was postponed for the present.

ENGLISH SPARROWS.

Dr. HOBBS, from the committee appointed at the last meeting, reported that he had found it quite questionable whether the introduction of these birds would be beneficial or not. They were generally considered as a nuisance in England, where they were best known. However desirable they might be, they could not be procured at present, in this country.

DIVISION OF THE STATE INTO DISTRICTS.

The question was discussed—"Shall the state be divided into districts?"

Mr. LAWRENCE could see objections to a division of the state; and at the same time, owing to climatic influences, he was aware that some sorts and varieties of fruits did better farther north than in the southern portion of the state, and a division might develop important facts in that direction.

Mr. McAFEE said that the horticulturists of Illinois had at first divided the state into three districts. The state society overlooks the whole state, and these districts take care of themselves and the local matters. Now the state was divided by the geological character of the country into seven districts. The Rock river region, which embraced nearly all the northern part of the state, is on the Galena lime stone, and has essential differences from the region farther south. On this formation quinces will not grow, and pears on quince stocks also fail. Grapes require more protection, but are less liable to rot than in the other formations. He presumed that Wisconsin was similarly situated.

Mr. WILLEY thought the state could be divided into the lake shore, the prairie and the sand regions, with advantage, and different sorts recommended for each locality.

Mr. LAWRENCE had no doubt the soil had a great influence in many respects upon the trees that grew in it. Some required one kind of soil and some another.

Mr. STICKNEY had often noticed the difference between one kind of soil and another; but in the timber, whether sand or gravel, fruit grew better than in the open grounds. He was not certain as to the cause of the difference, but his apple trees were always firmer and freer from injury there than in the prairies. Some attribute this to the soil, and some to the greater protection that he received near the lake, and from the greater fall of snow.

Mr. TUTTLE was satisfied that some varieties grew and did better away from the influence of the lake than others. The Fameuse does not succeed near the lake nor in damp soil, but is well adapted to a dry, sandy soil. Some trees could be pruned to an open top, so as to be dry and airy; such did well; others required close tops. The character of the soil should be considered in pruning, so as to create or avoid dampness.

Mr. LAWRENCE—There is a marked difference between timber and prairie soil in the growth of trees.

Mr. TUTTLE—I have noticed that some varieties do well on rich prairies, and *vice versa*. The Bellfleur is worthless in rich prairie soil, so are the Wagner and others he could name. Some do well in almost all soils.

Judge KNAPP was glad to hear this discussion; it was a step in the right direction. He had long been of the opinion, that the question of *where* we should grow certain trees, was of as much importance as what should be grown. All know that certain kinds of trees grow in a certain kind of soil, and in particular climatic conditions. Any observing man could tell from the native vegetations, what was the

character of the soil, and subsoil. Trees that grew and thrived in sand would die in the clay, and those of the clay would perish in the sand. For each there should be different lists. There was also a difference in the climate of different portions of the state. Trees that could thrive in one portion would perish from the severity of the winters of another portion. Fruits that found abundant heat in the south to perfect them would not mature in another portion, from a deficiency of heat. The dryness of one portion would destroy plants what would thrive in the dampness of other parts. All these required different recommendations; some of which could be brought out only by the local organizations, and by observations upon temperature, currents of winds, rainfall and evaporation, which should be taken in every county of the state.

Several others spoke on this subject, but no action was taken.

LOCAL SOCIETIES.

The call being made for reports from the local societies—

Mr. HOILE spoke enthusiastically for the Oshkosh society, and the marked influence it was having upon the citizens of that county. It had started under adverse circumstances, and a few persons had been obliged to carry on the work almost unaided. If some of the officers of this society could be induced to come among them, and address them, it would have a good effect. As it was, he was authorized to extend a challenge to any society in the state, for a competition at a June exhibition, in fruits and flowers.

Mr. LEITCH replied for Madison, that he would accept the challenge thus given. For his own society he could say that it was one of the institutions of the city; and to it, and its influence, was due the ornamentation of the city, as well as most of its fruit.

Mr. LAWRENCE, for Janesville, said that their society had somewhat fallen off from its former standing; but by holding a series of weekly meetings of late, a new interest had been awakened, and matters appeared better. He thought Janesville would not allow Oshkosh to have the exhibition all to itself.

Mr. GREENMAN, for the Milton society, reported that it was but recently organized, but it is progressing very satisfactorily. They had held an exhibition, and have frequent meetings for discussions.

Mr. PLUMB, for the same society, said that Milton owes to the state society a debt of gratitude for the encouragement it had received in its organization, and for the many and great results that they had already felt for their place. The best men in the place had become enlisted in the subject, and were giving them a helping hand. The faculty of the Milton College were taking hold of the matter, and are adding strength to our encouraging work of holding monthly meetings. He hoped that an exhibition would be held in June, and that Milton would be named as the location.

SUMMER EXHIBITION.

Mr. STICKNEY offered the following resolution, which was adopted:

Resolved, That this society hold a summer exhibition, offering premiums to individuals, and also liberal premiums to local societies; and that we appropriate one hundred dollars of our present funds for this purpose. The location of the exhibition and time to be decided by the executive committee.

[This meeting was held at Oshkosh in June, 1870, but owing to the dry, hot weather in the southern counties, few from those counties attended. The show, however, was a success qualitatively and pecuniarily.—*Secretary's Report for 1871.*]

HORTICULTURAL LIBRARIES.

Mr. McAFEE inquired whether any of the local societies had established libraries, as one of the means of usefulness in their work?

Mr. LEITCH replied for the Madison society, that it had begun a library, and was making additions to it constantly.

Mr. HOILE said it had been resolved by the Oshkosh society to commence a library for the use of the members. They were acting on the principle that the dissemination of knowledge was the best means of promoting horticulture. Pains were taken to have many horticultural papers and periodicals relating to and giving knowledge upon this subject laid before the people; and they were already feeling the good results of their endeavors; and among the best of these was the *Western Farmer*.

Mr. MORROW, of the *Western Farmer*, said that in view of the great importance of horticultural knowledge to the community, he would announce that his paper should be always open to the proceedings of all the local as well as state societies and others who desired to use its columns, and he should endeavor to make it worthy of a place in the library of every society.

HONORARY MEMBERS.

Mr. STICKNEY then introduced Mr. EMORY of the *Prairie Farmer*, and Mr. ANDREWS of Marango, of "Siberian crab" notoriety, and moved that they be admitted as honorary members. Which motion prevailed.

THE EXHIBITION OF FRUITS.

There being on the table a large show of apples, pears and grapes, exhibited by the members in attendance, on motion the President appointed Messrs. PLUMB, STEVENS and STICKNEY a committee to examine and report on these fruits.

EXPERIMENTAL GARDEN.

At the afternoon session the question occurred in its order, "What course shall be pursued with the experimental garden?"

Judge KNAPP. There is no way to dispose of this subject but to obtain an appropriation from the legislature to carry it on, and he therefore moved to refer the matter to the committee to memorialize the legislature.

Mr. PLUMB approved of the object of the garden, which was as yet but an experiment. The horticulturists have done much that will be valuable to the state and the university, if not to this society. Scattered as its members were, its management presented many difficulties. He was therefore in favor of passing it over to the care of the regents and the professor of agriculture in the university.

The Secretary, on request of members, stated that there were about 1,500 plants and trees donated in 1868, and that in all there were about 2,000 of all varieties, now growing on the grounds, and in good condition. He did not approve of the suggestion to hand this enterprise over to the university. That institution could not carry on the desired improvements, because the department of agriculture was now fully occupied with its system of experiments.

Professor DANIELLS, of the University, suggested many reasons why the society should continue the care of the garden. Among others was the fact that the University cannot, for want of means, carry on this work. As professor at the head of the department of agriculture, he had no time to do more than he was now charged with, and could not think of carrying on this work.

Mr. MORROW said no one who had the opportunity of witnessing the work done by Professor DANIELLS would doubt the impossibility of his taking charge of the garden. He rather needed an assistant now, than that additional labor be cast upon his department.

On motion of Mr. KELLOGG, the subject was then referred to the President, Recording and Corresponding Secretary, as a committee to memorialize the legislature for an appropriation to be expended in experiments on the experimental garden of the society.

ABOLITION OF DUTY ON IMPORTATION OF SEEDS.

Mr. L. K. SCOFIELD of Freeport, introduced the following preamble and resolution:

WHEREAS, In view of the fact that our native forests are rapidly disappearing, to supply the increasing demands of commerce, and that by careful calculation, it is estimated that before the present generation shall have passed away, our present source of supply, derived from the pine forests of Wisconsin and Michigan, will have been almost entirely exhausted, it becomes a matter of great national importance to encourage the planting of forest trees, especially in our northwestern states and territories; therefore,

Resolved, That we deem it the duty of our national and state legislatures to encourage, by every means in their power, the *general planting* of forest trees in our country, and that the members of congress from this state be requested to take such action, either by themselves or in conjunction with congressmen from Illinois,

C.—HOR.

who have been instructed by the horticultural societies in that state, to use their influence with the committee of ways and means to have the importation of trees and plants again placed on the free list, as prior to 1860.

Resolved, That our Corresponding Secretary is hereby requested to forward to each member from Wisconsin of our national legislature at Washington, a copy of these resolutions immediately after the adjournment of this meeting.

In support of these resolutions,

Mr. SCOFIELD gave much valuable information on the present tariff on foreign seeds, and urged the necessity of removing that tariff, that such seeds might be readily obtained for supplying the prairie country, now destitute, with trees. That, instead of discouraging the propagation and growth of these trees, every effort ought rather to be used to encourage that growth, and the planting of trees that are to supply the demands of commerce. He was willing to concede the value of our native pines, as very rapid growers and valuable trees, when planted out and cared for as they should be; but he contended that the European larch was even more valuable, and made more growth in its early years, and was a more durable wood. It was perfectly hardy, and well adapted to the climate and soil of this region. Speaking from his own experience in growing this larch, he had trees, four years after setting, that were valuable for posts and stakes for grape vines, and in ten years they would make from two to four fence posts. He gave instances of their durability when set in the ground, showing it as durable as any other timber. The American is not as valuable, because it requires a low, wet soil, while the European grows on high, dry lands.

The resolutions were adopted.

PRODUCTION OF NEW VARIETIES.

Mr. G. E. MORROW read the following paper on this subject:

In the year 1845 "Downing's Fruits and Fruit Trees of America" was published. It contained descriptions of 1,005 varieties of fruits. In 1869 a third edition of the work was published, containing descriptions of 4,552 varieties of fruits of 25 kinds. In the first edition 109 varieties of apples were described; in the last 1,885; then 54 varieties of grapes were named; now 233; then 33 varieties of strawberries; now 257. These figures show a remarkable increase in the number of varieties, within a little less than 25 years. Add to them the multitude of unnamed varieties of local repute, and the uncounted number of new seedlings to be found in most parts of the country, and it might seem there was no need for the production of new varieties. But, even in the most favored sections of our country, comparatively few of this great number of varieties succeed well, and here in the northwest it is especially needful that we have a greater number of varieties adapted to our peculiar conditions of climate and soil. How many varieties of apples, pears, plums, grapes, strawberries, etc., can this society name as in all respects worthy of cultivation in this state? None know better than some who hear this, how much we need a larger number of hardy, productive

varieties of fruits of almost every kind. He who produces a really desirable new variety of fruit, or vegetable, and introduces it to the public, does a good work, and, if he be wise in the matter, may make it a source of pecuniary profit.

The three obvious methods for producing new varieties, either of fruits or vegetables, are: Selection of wild, native varieties; raising seedlings, and by hybridization. Of some kinds we have no native varieties; with others, the seeds produce the same variety unless hybridization has been caused; and with still others, hybridizing is practically almost impossible. Each of the three methods named may be pursued with many kinds of fruits.

With all the incentives to labor in this direction; with the remarkable success that has sometimes crowned such labors, it is yet true that most which has been done, has been the result of chance, so far as the design of the producer was concerned. Comparatively few men have made experiments in this direction a special work, in which science has been carefully applied. A few have done this, and their names are held in deserved honor. And yet there is not a little to discourage. The late Mr. GOODRICH is said to have produced over 16,000 varieties of potatoes; of these, not sixteen are now generally known, and not six take high rank. Of the many thousand varieties of strawberries fruited in the last few years, comparatively few have marked excellence. The time will come, we hope, when experiments in this direction will be less blind groping; when we will be able to produce a variety of fruit with given characteristics as readily as we now modify the characteristics of our domestic animals. For the present we must expect many failures and disappointments, and must be willing to try long and patiently to secure the desired end, although success may, and sometimes does meet us almost at the very first.

In all our experiments we should remember that the production of fruit of superior excellence and in great abundance is not natural to plants. We all know that the production of wood and of fruits is in some sense antagonistic. When we think of the origin of most of our fruits, of the wonderful changes that have been wrought in them by the art of the gardener, we see how artificial and unnatural is the condition of nearly every improved fruit or vegetable. The best specimen of a tree, as a tree, does not ordinarily produce the best fruit. Hence, in the selection of wild varieties, or in the choice of seedlings, luxuriance and rapidity of growth, even general thriftiness of appearance, is not to be taken as a chief recommendation. Such characteristics may even be evils, rather than recommendations. We must have sufficient vigor to enable the plant to resist the unfavorable circumstances in which it may be placed, and rapidity and luxuriance of growth are desirable so far as they can be received without loss of hardiness or injury to the fruit-producing qualities. But mere vigor of growth is not in itself a conclusive recommendation of a seedling, nor is slow and comparatively feeble growth a sufficient reason for rejection. Suppose the first Delaware had been rejected on account of its slow and feeble growth. Another point connected with this, and which we should bear in mind, is that we cannot expect perfection in any fruit. High excellence in one quality is generally accompanied by a corresponding failure in some other desirable quality. This is no reason why we should not seek the highest attainable excellence, but bearing it in mind may teach us to avoid some disappointments.

Here in the northwest, where it is still denied by some that fruit can successfully be grown, the first points we should seek are hardiness and productiveness. We want trees and vines that will live and produce fruit, and these qualities secured, we look for excellence of quality as a highly important, but still secondary consideration. Hence it is particularly desirable here to choose any native fruits which give promise of capability of speedy development, as these give us undoubted hardiness with which to start. Our native crabs are probably too far down in the scale to make it advisable to attempt their improvement; but among the wild plums of Wisconsin there are doubtless some of much value, every way worthy of cultivation for their own merit, and furnishing admirable material for experiments with seedlings or in hybridizing. So too of native blackberries, raspberries, cranberries. Those who have observed the difference in the habit of growth, and in the size, flavor and time of ripening of the fruit, of canes and vines found growing wild, and have noticed the excellence of some of them, will need no reminder that there are doubtless varieties, now neglected in Wisconsin, which, if improved by cultivation, would equal in all respects, and surpass in hardiness, any of the now imported kinds. The most common method of producing new varieties, and the one by which most thus far has been accomplished, is by raising seedlings. The time may come, when we will be able to predict with some certainty, the kind of tree and the kind of fruit, to expect from a given seed, the history of which is known; but now we know little about this. We know, however, enough to teach us that the hardiness of the parent tree should be considered, and this is a point of practical importance with us. The seeds of the most hardy kinds should be sown, and it is reasonable to believe that the seeds produced by the seedlings from hardy seeds, will be still more desirable. Hybridizing is usually attended, in the case of tree-fruits particularly, with much practical difficulty. Most has been done with this process in the case of the grape. To the scientific horticulturist, and to the enthusiastic amateur, this plan is the most interesting, perhaps, of any method of producing improvement in our varieties. From it we may hope much in the future. In the work of encouraging the production of new varieties, and in commending all successes in this field, it is the duty and privilege of this society, and of all lovers of horticulture, to engage. Who can estimate the value of the Concord grape, and Wilson's Albany strawberry, or tell the influence in popularizing horticulture caused by the introduction of these two varieties? And yet it is but a few years since we had neither of them. So we may expect to have equally marked improvements in the near future. But with the good done in this way there is connected an inseparable evil. With the few really valuable varieties produced we have many that are either worthless or at best mediocre. Many of the latter, and not a few of the former, are introduced to the public with such pretenses as to induce large purchases, and consequent disappointment. There are those who make it their principal business to introduce novelties, and who are not always careful to strictly regard truth in their recommendations. But it often is not necessary to suppose intentional deception on the part of the introducer of what proves to be only a poor fruit. It is natural that one who has reared a seedling, or spent years, perhaps, in developing a wild variety, should regard the fruit with partial eye and taste, and that he should seek to introduce it to the public as

soon as practicable. If he states only the truth about it, no moral or legal guilt attaches; but the world can afford to wait, and in all ordinary cases it is safer and better to have the new favorite thoroughly tested, so far as practicable, in different soils and climates, before giving it to the public, and then to have it formally introduced by a respectable and competent horticultural society. In this work of testing new varieties the state horticultural experimental gardens can do very much good, and in this way alone be worth many times its cost. The duty of horticultural societies in this matter is plain. In no case should they, from considerations of friendship or encouragement for the introducer, recommend a variety without strong evidence of its positive value. If a new variety, named and introduced by a horticultural society, be not in some respect better than well known varieties, harm has been done by its introduction. And in no case should a variety be recommended on the merit of the fruit alone; the hardiness, productiveness and habits of growth of the tree or vine should also be considered.

To nurserymen, experimenting in the production of new and improved varieties, it is a natural and appropriate work. Considerations of self interest, and of regard for the improvement of horticulture, alike prompt them to seek to originate such varieties and to test those introduced by others. And it is equally true, although not always remembered, that both these considerations should prevent their encouraging the sale of, or recommending any variety which they have not good reason to believe will succeed. A strict regard to this principle by all our nurserymen would do much to inspire confidence in them, and to increase the demand for their stock, as well as be a successful preventive of many of the evils now charged to tree and plant peddlers. The growth of new and untried varieties is not to be discouraged, nor yet their sale in limited quantities and without false pretense, but the practice of "pushing" into sale untried varieties is strongly to be condemned. The purchaser should exercise good sense in this matter. If he insists on buying in large quantities untried sorts, however promising, let him not complain if they fail. On the other hand, it is wise and commendable to test new varieties. Nor should objection be made to paying an extra price. The originator of a valuable fruit or vegetable is as much entitled to a reward as is the inventor of a valuable machine. It is claimed that a tomato, the seed of which is now offered to the public at a high price, is the result of experiments and careful culture, continued through twenty-three years. If this be true, it is right that a fair reward should be paid to the one who did the work. It should be remembered that trees, and especially vines, are rapidly propagated, and that if the one to whom we owe the introduction of a valuable new variety is to receive a reward, he must secure it in a short time. So, while we guard against the folly of indulging largely in novelties at extravagant rates, let us not decline to buy a tree or two, or a half dozen vines of a promising new variety because the price is high. At least let us avoid the character of that great pest who habitually decries the merits of all new sorts, and refuses to buy them, but who is always willing to beg, or perhaps even "appropriate" a few cions, seeds or roots, and to eat the first specimens of fruit secured by his more enterprising neighbor.

Adjourned to 7½ P. M.

Evening Meeting.

Called to order. President in the chair.

Mr. C. ANDREWS of Marengo, Ill., read a paper on

THE SIBERIAN SPECIES OF THE APPLE.

The Siberian species of the apple is now attracting much attention, and you will agree with me that, while we cannot be too careful in rejecting humbugs in horticulture, we should be equally careful not to commit the still greater error of condemning even a single fruit of universal or large local value, for want of a fair and impartial investigation and trial of its merits.

In the subject before us we have, not a single variety, but a whole species, claiming attention and discussion. The dissemination of a new species of the apple, valuable everywhere, and capable of introduction into large sections hitherto wholly unsupplied, involves interests of national importance and should be treated in no narrow and sectional spirit. In order to show their relative position and importance, I shall briefly review the origin and characteristics of the other allied species of the apple, and refer to their comparative uses and adaptation to our varied climate, particularly with a view to solve the important question of the coming hardy apple for the north. The origin and botanical classification of the different species and subspecies of the apple, are subjects yet involved in much obscurity, even among botanists. The classification, LONDON attempts to give, appears more consistent with the observations of orchardists than any other. It is as follows:

1. *Pyrus Malus*.—Wild parent of the common apple—an assumed species apparently, as the true parent of the domestic apple does not appear to be now in existence.
2. *Pyrus Malus acerba*.—Sour-fruited apple tree, or wild crab of Europe.
3. *Pyrus Malus Prunifolia*.—Wild Siberian Crab.
4. *Pyrus Malus baccata*.—Berry-like fruited crab, a native of Siberia.
5. *Pyrus Malus Astracanicæ*.—Astrachan apple, a native of about Astrachan.
6. *Pyrus Coronaria*.—Common American Crab.
7. *Pyrus Angustifolia*.—Narrow leaved American Crab.
8. *Pyrus Spectabilis*.—Chinese Flowering Crab; and several other varieties, making in all thirteen species and sub-species.

Other authorities create various sub-species and classify them differently, but all agree on one point, that while all these species reproduce themselves from seed, some perfectly, and all with more or less variation, no one "ever reverts to, or produces any of the others." This fact seems to controvert the common opinion that our domestic apples are derived from the wild crab of Europe, a belief which appears to be unsupported by facts. The botanist RAY claims that the specific character of the English Crab and our cultivated apple, are more different than those of others, admitted by all, to be distinct. "Upon the whole," says a recent writer, Mr. W. C. FLAGG, "it seems highly probable that the cultivated apple, which will not revert to the common crab, from seed, and which is first historically known in

Southern Europe, is the offspring of some of the wild Asiatic sorts. If we may judge the *Pyrus Malus Prunifolia* or wild Siberian Crab by our cultivated fruits of the same name, it must be a species far more susceptible of improvement by culture, than the European species."

The foregoing classification seems to throw some light upon the peculiarities of different classes of apples now cultivated in this country.

First. The common domestic apple, of which the Bough, the Baldwin, the Greening and Russett are examples—affords varieties noted for their number, size and excellence. This family, the oldest and most thoroughly disseminated, is the only one yet fully tested as to its capacity for improvement and the extent of latitude in which it will flourish. Although it may never be possible to point out the ancestral stock from which this grand group of varieties has sprung, yet it is curious to observe, that almost by common consent, its origin is referred to Western Asia, a portion of the globe which, while it is believed to be the common cradle of mankind, is also the birth place of nearly every species of our roseaceous fruits. The almond, apricot, peach, pear, cherry, plum, quince and apple, are all referred to the countries bordering on the Caucasus and the Levant. And it is not less curious and convincing to observe, that to this day the common apple, especially that particular group just referred to, is in its constitutional habit and adaptation, nearly confined to those portions of the temperate zones which correspond to the regions of its supposed origin. And from all the experiments and attempts at acclimatizing, which have been made during centuries of cultivation and diffusion, it is not probable that any perceptible variation of constitutional vigor or hardiness has been attained or ever will be by the progeny of this species proper. It is a law in botany that each species of plants has its climatic limits. The open culture of the common apple, by no system of seedling production can ever be carried beyond the climate peculiar to the native *habitat* of the species. For varieties that will endure the rigors of heat and cold, in our very capricious and trying climate, we must look to some other species having a more vigorous constitution and a wider adaptation of habit.

Since penning the above lines I have accidentally cast my eyes upon the following from an address of President WILDER of Massachusetts:

"A good constitution for a tree is as essential as a good constitution for a man. Acclimation of a tender tree or plant is impossible. He who embraces this fallacy is like one building his house upon the sand. * * The million cannot be educated to extraordinary care; therefore, a primary object in the selection of a fruit tree should be entire hardiness for the locality in which it is to be planted. Such a subject, though not itself producing the best of fruit, will furnish the foundation upon which we may graft finer sorts and render them more durable." Or, it might be added, from which we may reproduce from seeds, by culture, still higher qualities of these hardy fruits, and thus render them both permanent and valuable.

Second. This brings us to the consideration of another class or species of apples, essentially different in hardiness, growth, foliage and fruit. They are commonly known as Russian apples. The Duchess of Oldenburgh, Alexander, and Red and White Astrachan, are examples. LONDON refers these apples to a separate species called the *Pyrus Malus Astracanicæ*. The facts warrant the opinion that they

have a distinct origin; no doubt in a more northern latitude, than that of the first named group. Their quality is second; but their superior hardiness enables them to meet the wants of a much wider belt of territory toward the north, than the tenderer sorts of more southern origin. They are all summer apples—a strong inference in favor of their high northern origin, as fruits ripening in those short summers must necessarily mature early. The practical fact to be noticed here is the mistake of those who are seeking to produce from seeds of Russian apples a hardy winter fruit for the north. It will not be done by bringing cions from northern Europe, or planting seeds in the extreme north. But a long course of reproduction, in a climate where the seasons are longer, will be required to change these fruits from summer to winter ripening sorts. At the same time, such cultivation in a southern latitude will not alter the constitution of the trees, so as to render them any the less hardy, when returned to a northern climate. Another practical point is—the futility of the hope of producing hardy or “acclimated” trees in the north, by planting seeds of the tenderer sorts there. The law that seeds produce plants after their kind, will prevent any such result.

Third. Another species of summer fruits, also of high northern origin, are cultivated in this country—the *Pyrus Malus Baccata* of Loudon. This fruit is mentioned in American Pomology as having been seen by Pallas near lake Baikal, as a shrub three or four feet high, bearing berries the size of peas. The calyx in this species falls off, leaving the fruit smooth: hence its name baccata, berry-like. It is called in our gardens cherry crab, currant, and sometimes pea crab. The fruit is highly prized by all good housewives for preserving, and by planters in town and country the tree is esteemed as highly ornamental for garden or lawn. The marked advance in this species from the diminutive shrub found in Asia, warrants the belief that it will continue to sport into still higher forms. It is instructive just here to observe that while all of the Siberian species are rapidly improving, we hear of no new sports from the European crab, and actually know of none from the wild crab of our own country.

Fourth. Still another species of the Siberian crab apple, according to Loudon's classification, remains to which to pay our respects. The varieties originating from the *Pyrus Malus Prunifolia* or Plum-leaved Siberian Crab, are of comparatively recent production, its two most common representatives, the large red and yellow Siberian crabs having been mentioned by writers on pomology so late as 1857 as being “by no means common.” These sorts, however, have been very rapidly disseminated, and had at one time quite a run, as fancy preserving fruits, in the markets of the large cities. Their great beauty and novelty no doubt contributed to this result. Their faults are, small size, astringency, and early decay. But with all their faults, they possess sufficient merits to maintain a constant place in the markets, for trees and fruit, and they are planted in almost every garden, and used in every family for various culinary purposes. As to the limit of diffusion of this species. The common Siberians are grown in all the middle and eastern states. They thrive also in the southern states even as far south as the vicinity of Mobile, Alabama. From Arkansas, Texas, Mississippi, North Carolina and Tennessee, information received shows that they are known and appreciated wherever

planted. In California they have shown surprising results in size and early productiveness. Dr. Warder saw Siberian crab apples growing and bearing abundantly on the peninsula of Kewaunee, Michigan, and remarks, "there is no doubt of their hardiness anywhere within the limits of the United States." They have produced fruit at the head of Lake Superior, while the hardiest of the Russian apples are still regarded as doubtful at St. Paul. Statistics would doubtless show that the value of the Siberian apple trees planted in the northern portions of Iowa, Wisconsin and Minnesota far exceeds the value of all others which survive, although their cost is inconsiderable when compared with the large sums that have been thrown away upon tender varieties. But the northwest is not alone in appreciating the rising importance of the Siberian family. Such have been the changes of the climate during the two last decades, that in New England and the British Provinces, the improved Siberian apples are sought after with even more avidity than in the northwest. There is a reason for it. The experience of that region is older and less confused with the ideas and experiments of a recent and unacclimated population. They know what will *not* succeed. They have lost faith in the theory of acclimating "native seedlings" of the *Pyrus Malus*. Successive reproduction from seed is no doubt the true way to produce ameliorated fruits, but this process can never render a tree or plant hardier than the original, which was fashioned and designed, so to speak, by the hand of nature, to meet the vicissitudes of peculiar climates and portions of the globe. This principle is equally true, whether we accept the theory of independent acts of creation for each one of these now distinct species, or whether with Darwin, we believe them to have become distinct by the effects of actual diffusion and climatic causes during the lapse of incomprehensible periods of time. Under the latter theory our statement that successive reproduction in a rigorous climate could *never* render a plant hardier, is not theoretically true, but practically it is the same. For the period when these different species may be supposed to have acquired their peculiarity is, according to the Darwinian theory, so infinitely remote, that our assertion as to the design or effect of nature in fashioning them, loses none of its force, whichever theory of original creation we may adopt.

We have thus seen that in the Siberian species of the apple we have a congeries of fruits far more universally adapted to the great diversity of climate and conditions in our country and on the globe, than in any other species of the ligneous orders of fruits. And it only remains to show what are the comparative qualities and tendencies to improvement of this species of the apple, in order to assign to it its proper place in the catalogue of fruits for general trial and cultivation. All varieties of the Siberian crab apple, which are now numbered by the hundreds, are doubtless, as Mr. F. R. Elliott says, "mere chance seedlings, ameliorated fruit, by culture and climate." Among these ameliorated varieties the Transcendent and the Hislop apples have become more widely known than any, except the red and yellow. They have no authentic history. Even the section of their origin is not certainly known. But in less than twenty years they have acquired a popularity which has rendered them the most popular nursery tree in the northwest. The main facts regarding the value of these two sorts may be briefly stated thus: The trees, like all of their species, are perfectly hardy as far north as they have

been planted, and in every other section are strong growing and productive; the fruit is medium in size, very handsome, and in use from August to November; in quality, too austere for the choice dessert, but once established in the kitchen, they are never discarded for any other sorts whatever. A fair test of value is the price a fruit will bring in market when in competition with others. The Transcendent has sold in St. Paul for \$1.25 per peck, when large apples, shipped from Illinois or Michigan orchards, brought only \$1 per peck from the same store. The same apple has for the last four years brought in the markets of Chicago an average of \$1.50 per basket, or \$4.50 per bushel, when the best eastern apples were in good supply at \$5 to \$6 per barrel. Similar testimony can be gathered wherever these apples are grown and brought to market. They are used not only for making jellies and preserves, but for pies, sauce and every purpose for which good cooking apples are used. The Siberians are unequalled for cider. Many new sorts have proved choice for the dessert, having a great variety of flavor, sweet, sour, sub-acid, tender and aromatic. Their extraordinary beauty will give them a high value in market as fancy fruits for the table, a place left vacant since the decadence of the Lady apple. While the improved Siberian apples are sought after as necessities in the northwest, in New England and in Canada, they are at the same time gaining steadily in popularity for private planting in all the best fruit-growing states east and west. The new varieties coming into notice will add greatly to the value of this species by increased size and quality, and also by extending the season of this fruit through the whole period of autumn and winter. Whenever a sufficient number of these improved sorts shall have become sufficiently disseminated to be fully known, they will no doubt establish a market value, not only in the north, but in every section where the apple is now grown, which will be as permanent as that of any other fruits. The fear expressed by some that the recommendation of these hardy and useful fruits will discourage the cultivation of larger apples in some places where they might be grown, when not put forth by interested parties, must be the offspring of either a prejudiced or puerile judgment. The Siberian apples are not *rivals* of any of the pomological treasures of the country, but *additions* to them. In the north they are indispensable; in other localities they come in as accessions to a rich and desirable variety, and fill a place for certain purposes for which no other fruits are their equals. The objection lies equally against the hardy plums, cherries and small fruits, and, in fact, is being urged in the same quarters, and for the same reasons, against all these classes of hardy fruits, which are likely to come in competition with fruits that can be grown only in certain favored districts. But such narrow and selfish views are unworthy of the broad and noble sentiments of good citizens, for viewed in the light of true patriotism, the cultivation and dissemination of a single new variety of a hardy and valuable fruit of any species, that is of universal or large local adaptation, is a matter of national importance. Take, for instance, that most neglected, acid and tiny of all our summer fruits, the currant, when considered in its relations to the health and comfort of the millions who yearly use it, to say nothing of its pecuniary value, and its annihilation would be a national calamity. So, too, the addition of a new and more valuable variety of that small but useful fruit would be pointed out as a praiseworthy acquisition.

Who can estimate the commercial value of the Wilson strawberry and the other hardy small fruits to the nation; or of the May cherry and Miner plum to the west? And yet all these are still meeting the opposition of horticulturists who cannot see beyond the bounds of their own state or section.

It is safe to say that the new Siberian apples, brought to notice within the last few years, form a far richer and more important addition to the pomology of the country than any one or all of the above fruits combined. The extent of territory in which this species must ultimately be alone relied upon for a supply of home-grown fruit, is immense in area. The social consequences of such a supply are not to be computed in dollars and cents. No true pomologist will for a moment calculate the problem of keeping open this vast region as "the natural market for the finer fruits grown further south," by discouraging the introduction of "Siberian crab apples and other coarse fruits" into that section. With our wide domain and varied climate, subject to changes which sometimes destroy our most luscious and long tried fruits, we cannot afford to dispense with a single variety, much less whole species, which promise a permanent supply of hardier and perhaps ultimately equally valuable fruits. The Siberian species of the apple offers to us, as horticulturists, a rare opportunity to test the capacities of our soil, climate, Yankee genius and generous hearts, in multiplying and extending to every portion of our country the rich pomonal gifts that nature has placed in our hands to cultivate and improve.

At the close of the reading of this paper,

Mr. TUTTLE remarked that the crab could be hybridized with the Russian and other apples, and there might be good results therefrom.

Mr. STICKNEY thinks that we have about enough crabs; let them be only the six lower rounds of the ladder; but we should look for better fruits, such as the Duchess and others like it in hardiness. Others fully concurred in this caution.

This subject was extended to considerable length.

CRABS FOR STOCKS.

Mr. GOULD of Beaver Dam, offered the following, which led to much discussion :

Resolved, That the adoption of the cultivated (Siberian) crab as a seedling stock, upon which to graft and bud our apples, is a step in the right direction."

Mr. PLUMB said that he had no doubt but the spirit of the resolution was all right; but he doubted if it would bear the test of experience and trial. If the intent be to propagate the crabs, then the resolution was proper; but if to work other trees on it, it was all wrong. Some apples, like the Bellfleur, would be a total failure, if attempted to be worked on the crab; the two would not unite perfectly.

Mr. GOULD—My experience has been with root-grafting on the seedling crabs, and in that I have been successful. He had suffered by root-killing, losing thousands of dollars. The tops were hardy, and appeared to come through the winter all right; but on being dug up, every root of the stock was dead, and he had lost

his trees; but with the crabs for stocks he had lost no trees from root-killing. He had found no trouble in working varieties on the crab.

Mr. STICKNEY had worked a few hundred trees on the crab stocks, and found they did well, but they were dwarfs. Many of them had loaded down with fruit, and the fruit was smaller than usual. He knew no good reason why the crab was not a good stock for the purpose of dwarfing, as many varieties had improved on these stocks. He expected to get dwarfs and half standards on such; but for general use he doubted the propriety of their use. He found, however, the roots nearly double those on any other kinds he had used.

Mr. GOULD did not think the dwarf objection of any weight. We wanted dwarfs out west, if we could not have hardy trees without. Hardy stocks are absolutely necessary to hardy trees. Root-killing has been the great trouble with even the best sorts of trees. He had become so convinced of this necessity for hardy roots, that that he had entirely discarded all eastern and southern seeds. He found it better to pay forty dollars for a bushel of western crab seeds, than to get the others for five. In fact, they were worse than no stocks, as they were almost sure to die.

Mr. PLUMB said he would not say anything in favor of dwarfing, believing it a humbug generally, and proceeded to show that the cion will give its essential character to the root, no matter what the root may be, and that to the cion we must look for the requisite qualities of hardihood and vigor.

Mr. STICKNEY proposed the following, which was accepted by Mr. GOULD, and was passed:

Resolved, That we think favorably of the use of the Siberian crab stocks for the production of very hardy apple trees, by root-grafting or budding, and recommend that our nurserymen and amateurs experiment with them, and give us at some future meeting the results of their observations.

The remainder of the afternoon was spent in a revision and discussion of the list of apples as heretofore recommended, in which nearly all the fruit-growers took a part, and stated their experiences, which were very diverse on most of the sorts, but they adopted as follows:

LIST OF FRUITS.

Apples.—1st. A select list of five, of which hardiness is the first requisite, and to which there shall be no dissenting voice, viz: Duchess of Oldenburg, Astrachan, Fameuse, Tallman Sweet, Golden Russett.

2d. List worthy of general culture for all qualities of tree and fruit: Sops of Wine, Fall Stripe. St. Lawrence, Fall Orange, Plumb's Cider, Perry Russett, Willow Twig, Red Romanite, Blue Pearmain' Seek-no-further.

3d. List for trial: Sweet June, Tetofsky, Lowell, Bailey Sweet, Gros Pomier, (Haas), Paradise, Winter Sweet, (Sweet Wine), Cable Gillflower, (Flushing), Ben Davis, Northern Spy, Rawle's Janet.

Strawberries.—The strawberry list was revised, and the society adopted the terms *market* and *family* to distinguish qualities, placing them in the order of their preference, viz: Wilson, Green's Prolific, Russell, for market; and Agriculturist, Russell, Burr's New Pine, for family use. Among the new varieties, the Nicanor was highly commended by Mr. McAFEE. Upon the Green's Prolific Mr. GREENMAN remarked that he could grow as much fruit from one rod of them as from fifteen rods of the French.

Currants.—The currant list was left as last year; the loss of the foliage by the long continued wet weather causing the loss of much of the fruit. Mr. PLUMB says the Versailles was the only variety that escaped on his grounds. The long-bunched Holland was well spoken of by Mr. STICKNEY.

Grapes.—The grape list was left without change; the Delaware first and Concord as second, the unfavorable season of last year preventing any just comparison of varieties.

Raspberries.—The raspberry list of last year, viz: the the Doolittle first, was amended by adding the Miami, under its several names; also the Clarke, Purple-cane and Philadelphia.

Blackberries.—Mr. STICKNEY remarked upon the promising qualities of the Ancient Briton Blackberry, which with the Wilson's Early was recommended for trial. The Kititiny was acknowledged hardy and productive.

This list was adopted after a great deal of close canvassing of the merits of some of the sorts.

P. A. CHADBOURNE, LL. D., and President of the State University, who had been announced to deliver an address this evening, was called on:

He begged to be excused, on account of his health, which would not permit him to speak at length. He remarked that what he desired to say had been intended for other ears, and in commendation of the persistency with which the members of this society had pursued their work of enlightening the people of the state, on the subject of horticulture. For that they were worthy and should receive the aid of the state, by proper appropriations. He had designed also to speak upon the fact that many of the most useful varieties of apples were passing away, some not even out-living the generation of men that had produced them. This was in accordance with the laws of the universe. Nothing good and beautiful in the highest degree can be said to be permanent. Therefore, it was the duty of horticulturists to continually raise up new varieties to take the place of those now failing.

Mr. McAFEE then read a paper on the subject of

OUR NATIVE WOODS, AND TIMBER CULTURE.

Old Egypt, the land of the Pharaohs, the Sphinx and the Pyramids, is teaching us of the New World true vital lessons, lessons of such paramount importance that the very being of generations of men hangs upon our appreciation of them. These lessons, the one of spoliation and its consequences, and the other its antitheses, the

lesson of production and its results, are so full of interest to every thinker that they well deserve our most careful study. Upper Egypt, the formerly fertile country along the Nile, has been gradually denuded of its timber, and a decrease of the rain-fall has kept steady pace with the destruction of the timber, and the desert has steadily marched on, subduing the country to its wild domain, till the sands of the Lybian desert now drift into the Nile. This is the result of spoilation. On the other hand, in Lower Egypt, the last Viceroys have given much energy to extending the canal systems and planting trees; and also, the great engineer of the Suez Canal, M. de Lesseps, has made tree-planting a part of his policy, and the result has exceeded the largest expectations; rain-falls are increasing; indeed, rain falls now where it has not been known to fall before for hundreds of years, and the desert is being reclaimed, the arable area is extending, and gardens and fields exist where once was only the drifting sands. This is the lesson of production. Nor are these instances alone in their evidence as to the importance of tree-growths. In every case where history has recorded the fact of forest-denudation, or forest-production, the same meteorological phenomena have followed, namely: after the destruction of timber, aridity and sterility; after the new growth of timber, humidity and fertility. It is but fair then to conclude that if the rapid spoilation of the great northern forests and of our local groves goes on, we shall ere long hear the pertinent inquiry, "What shall we do for a climate?" As the production of trees and plants is, so far, the *only* means known by which man can, to any appreciable degree, influence the meteorology of a country in his favor, the question of timber production rises to the proportions of one of the grandest of our industries. But with all the importance which a philanthropist or general economist may give to the arboreal industries, in a money-getting country, and among a money-making people, there is an argument still more potent, in fact all powerful, the argument of pecuniary interest. This argument successfully applied to any subject will commend it to the public ear, endear it to the public heart. The fact that more money is involved in the tree question than in any other interest in our country, should clearly enlist the public sympathies in favor of arboriculture. And this it will do when once all doubt is removed, and the facts are made plain by experimental demonstration. Here is work for practical horticulturists all over the land, and here also is a work for the nation, the states and municipalities. While the actual facts as to the profitability of tree-culture, are to be demonstrated by actual trial, the men who are making these practical demonstrations deserve, and should have the aid and encouragement of the nation, the state and the country.

The old philosophers had an axiom which all scientific progress has not disproved, that "Nature abhors a vacuum." The spot on earth vacuous of organic life is most truly abhorred of Nature; wherever such a spot exists, all the forces of Nature are perpetually at work to overcome this abnormal condition, and to produce the conditions favorable for organic existence. Where man in his ignorance has followed a system of husbandry which has depleted the earth of its stores of plant-food, until he is forced to abandon his worn-out fields, the lichen, the sedge, the hardy grass, the thistle, burdock and their myriad of despised coadjutors, succeeded by the bramble, the rose, the sassafras, the elder and other trees and shrubs set in, and in

their succession of growth and decay, carry on their work of renovation and reconstruction till they have obliterated the sterility forced upon the soil by our wrongdoing, our robbery—not culture. This, if atmospherical conditions are favorable, is the cycle of organic life, often observed; and it proves, what? that the plant is the salvation or the redemption of the soil from the abhorred vacuum of sterility.

The grandest problem of any age remains for us to work out by tree-planting upon the so-called Great American Desert. This immense area, sloping from the great central axis of upheaval of our continent down almost to the center of the Mississippi valley, is from some cause strangely deficient in timber, and it is very dry and almost sterile in some parts. To just how great an extent artificial tree-planting will increase the humidity of the atmosphere, and consequently the productiveness of the soil, cannot be predicted, but that good effects in that direction will follow arboriculture, there is no reason for doubt. All the evidences which can be obtained go to show that the grass covered area is getting larger, and the cactus and artimesia area correspondingly smaller, since this region has been known by civilized people. The firebrand of the Indian and the wandering white man has been reducing the groves until at many places the only timber growth left is upon the large river islands, where the trees stand literally intrenched behind the flowing waters; but the few outliers which have for centuries withstood the flames on the highlands prove that wood growth is possible even on the high prairies at many points, and the suggestion which has come to many a mind, is that if our national legislature and our gigantic railroad corporations would but support proper organized effort, the most beneficent results to our present and future population could be accomplished upon the "Great American Desert."

In support of the profitableness of tree production so many *facts*, established by actual trial, could be cited, that any man should be convinced that trees will pay on any bare farm. True, we are too young in forest-planting to have proved more than a few years' growth; but taking the results of these few years for data, and allowing for every contingency, making in all respects a conscientious estimate, the show of profits to the grove-maker are so large as to surprise even the calculator. Mr. Budd of Shellsburg, Iowa, who has grown the several species of ash to quite a large extent, estimates the net receipts from ten acres of red ash, of twelve years' growth, at \$3,720. Mr. Schofield of Elgin, Ill., estimates the value of pine and European larch plantations as more than double these figures; and I have taken known trees for a guide, and after making every deduction for culture, interest on investments and taxes, I find that the net profit upon a ten acre grove of red maple, honey maple, red elm and white elm, at twelve years old, amounts to \$1,152, or \$9.60 per acre per year clear profit, above all expenses. (See Transactions of Illinois Horticultural Society for 1868, page 249.) An objection is raised that these are only estimates, not facts. So everything in the future is an estimate, an expectation, or even a wish; your next year's harvest and your next year's bread are but expectations, and they are reasonable or unreasonable expectations in just so far as they are based upon actual knowledge, and in just so far as they take into consideration all the probable causes likely to affect the production of the expected harvest. If all adverse probabilities have been duly considered, all favorable con

ditions fairly reduced, our estimates are as deserving as are those of the careful husbandman.

He then gave a brief description of the different woods on his *lignarium* from Stephenson county, Illinois, beginning with the maples, of five varieties, all trees of great value. The red maple (*Acer Rubrum*) is useful as a lumber tree, and for fuel, and is with all the others a sugar producer. The silver leaf (*A. Dasycarpum*) is a rapid grower and worthy of extensive cultivation. The sugar maples, so-called, (*A. Saccharinum* and *A. Nigrum*) sugar, or hard maple and black maple, are worthy of cultivation, but of too slow growth to be generally popular. The ash leaf maple, sometimes called box elder, (*A. Negundo*) seems to be the most promising of all the maples as a subject worthy the planter's energy in this region—a rapid grower, healthy, a good fuel, and an abundant sugar producer, it pays doubly to plant, pays in sugar, and finally in fuel.

The balance of the trees were rapidly passed over giving the peculiar characteristics of each, and he closed as follows:

Pinus Strobus, the White Pine, whose body makes a part of every American home is, if there be any such thing, the tree of universal utility. Surely, I need not say for what White Pine is useful. For ornament, or for use, for show, or for profit, we have here a sufficient choice, and it but remains to *plant* and cultivate.

Judge KNAPP had listened with great pleasure to the paper just read, and to the list of trees and woods from Stephenson county; those named were not strangers to him; and he believed, that if in this state a few must be struck from the list, such as the blue ash, and the red bud, five could be added for one lost from that list. This list has not a plant of the *Vaccineae* or whortleberry family, the blueberries and cranberries, and many others of the heaths. We were also equally rich in the cone bearing trees, with which the list could be swelled. He closed with offering the following, which was referred to the committee to memorialize the legislature:

WHEREAS, There has never been any collection of the botanical productions of this state, or collections of its animals, birds, fishes, reptiles or insects, belonging to the state, its university, colleges or organized societies; and

WHEREAS, There is an almost equal destitution of collections of the minerals and soils, belonging to the public; and

WHEREAS, Great need is felt in all portions of the state by our people, of more information in regard to the climatic influences that affect the vegetable productions of the state; therefore,

Resolved, That the State Horticultural Society request the legislature to pass an act that shall provide for such surveys, collections and observations as shall secure to our people proper museums of our vegetables and animals, and knowledge of our climatical influences.

Mr. PLUMB had noticed that the red maple, after a few years' use as a street tree, had failed, and he desired to know if it was to be considered a failure, as a shade tree.

Mr. McAFEE had noticed a borer at work in the red maple, and suggested that the failure might be traced to that cause.

Mr. LAWRENCE knew of red maples that were perfectly hardy, and of others that had been killed by insects. The borer was found where the bark had been loosened in taking up or from other cause, and then the borers entered and did their damage.

Dr. CHADBOURNE said the red maple was well adapted for damp soils, but would not succeed on high dry land. The borers are doing much damage, in some very large trees. They work under the bark, and no one knows of the danger the tree is in, until he sees it dying; and then if the tree is examined it will be found that these worms have girdled it. He called attention to the difference in the solidity and character of the timber grown in this state and the same variety at the east. The white oak here is not such tough wood as it is there. Here the black oak (*Quercus Coccineus*) is the best fuel oak. There it is considered almost valueless as fuel.

Judge KNAPP thought this difference could be traced to climatic differences, and especially to the greater heat and dryness of this region.

Mr. PLUMB gave his evidence to the rapid growth of the ash leaf maple. He knew of no tree that grew with the same vigor. On dry land it was perfectly hardy and would endure any amount of abuse.

Judge KNAPP said that this tree was one of the last found in crossing the great plains, where its capacity to endure the extreme drought of that dry region was proven. It was also found in the Rocky mountains, where it was also exposed to the most severe extremes. It is a native on the Mississippi; and at Prairie du Chien it had been planted by the sides of the streets, where its roots were stamped on and laid bare and bruised by cattle that lay under it, and yet it appeared uninjured.

Adjourned to 9 A. M.

THURSDAY, 9 A. M.

After some interesting and valuable conversation between Dr. CHADBORNE, Prof. DANIELLS and Mr. McAFEE, on the subject of hybridization and production of new varieties and species, (for want of room the same is here omitted,)

Mr. STICKNEY read a paper on

SMALL FRUITS.

Mr. President and Gentlemen:

In this thoroughly discussed question of small fruits there is little that is new to offer, but there is much that is interesting, and much that will bear repeating. If through our published proceedings what I say may gain the attention of farmers and owners of village lots, and perhaps stimulate some to renewed efforts in fruit raising, I shall be well paid. With this hope in view, I will treat the subject in the most practical manner, placing before you facts rather than theories, and recommending only such practices and such varieties as will please all and disappoint none. From the man with his bearing orchard of one hundred or one thousand trees we will not claim or expect much attention. To him our small fruit talk will

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seem much the same as does the enthusiasm of poultry fanciers to the owner of a fine herd of Devons or Durhams. Neither do we hope to interest those who only notice fruit as it comes to the table, prepared for use; who value just as highly the quart of berries bought in the market as those gathered fresh from the garden. From the thoroughgoing "hog and hominy" eaters we expect no favors; and yet some converts, and now and then a good working disciple, come from that class. But to the laboring man, with only his cottage and rood of ground, which by his skill and industry he would improve and beautify; to the mechanic, who needs rest and recreation in the open air, and who perchance may also need all the substantial comforts and luxuries he can possibly derive from his garden; to the parent who would educate his children in habits of thoughtful and productive industry; to the professional man, who needs rest and relaxation from an overtaxed brain—to all these, and others, we bring words of good cheer. For all these, small fruit culture is just the thing, giving ready and abundant pay in beauty, utility, health and happiness.

What will the culture of small fruits do for us in dollars and cents? Let the person of limited means buy, at a cost of five dollars, or get as a gift from his neighbor, one thousand currant cuttings; plant in early spring, in good soil, and tend carefully through the season; in autumn, at least two-thirds will be well rooted plants, worth from two to four cents each. Here, at the end of six months, is your pay, at the rate of twenty-five cents per hour, for all labor bestowed. But do not realize now; better let your capital accumulate. Take these plants and re-set them in rows four feet apart and two feet in the rows. Still tend carefully, and they shall yield you wood for new supplies of plants, and after one year a paying crop of fruit. Do your duty by them five years and then balance accounts, and you shall again see your twenty-five cents an hour. Or buy one thousand plants of black-cap raspberries, costing ten dollars; plant in good soil, and tend carefully; in autumn layer the tops as they are ready, and in one year from the day of planting you may have three thousand good plants to sell, and in three months more, say five hundred quarts of choice fruit. Here again is your twenty-five cents an hour, and as much more in value of plants for future crops. Similar results may be reached with grapes or strawberries, though perhaps with less certainty. Do you lack the knowledge to do this? Observe and question carefully all within your reach who know aught of these things. Read all the books and agricultural papers at hand. Above all, watch carefully the effects of your own acts, and study to improve upon them, so that each succeeding year may find you better able to command success. In this way shall acquisitions of knowledge and power be of more value than the dollars and cents.

The man with some capital, who seeks an investment and a business, may safely and profitably invest in small fruits, if he can bring to his work a good stock of perseverance, energy and careful observation. Raspberries are readily made to pay a net yearly income of two hundred dollars per acre. Currants will do quite as much, and are more certain. Strawberries sometimes pay more than twice this, but owing to frequent failures are no more profitable than the others. But it is no careless, neglectful culture that secures these results. Yet it requires no more skill or management to succeed with these than with the best class of common farming.

What can small fruits do for the villager or the professional man, who has but little ground, and seeks choice fruit for his table and amusement for his leisure? Where space is to be economized, strawberries must be grown in hills, grapes trained to the sides of fences or buildings; raspberries, blackberries and gooseberries, on trellis, or to stakes, and currants in tree form. All this involves much of thoughtful care and watching, much of skillful pruning and training; and with these come increasing interest in and love for the objects of our own care; great joy at our success, and disappointment at our failure. We draw upon our ingenuity for ways and means to accomplish more. We make almost daily new discoveries in the growth and development of our pets. Insect enemies are jealously watched, which gives us knowledge of entomology. All these combine to draw our minds from weightier matters, from the corroding thoughts of business life that tire and vex us; and thus we gain rest and renewed strength. Meanwhile our tastes are gratified and our bodily health improved, by cooling and delicious fruits from the early strawberry, in constant succession through the season; and by the aid of canning and other devices, around the year. Even here, in our limited space, we may test and prove the merits of new varieties as offered, or by hybridizing and raising seedlings, we may originate something new and valuable and thus contribute our mite to the general good.

To the pioneer in new countries, small fruits are of great value, because so easily and cheaply transported, requiring so little ground, and yielding such early returns. Strawberries and raspberries, the second season, grapes, currants, gooseberries and blackberries the third season, and an abundance of all thereafter, and all from a few square rods.

To the nurseryman, small fruits, though requiring much attention, are a source of profit, because they require so little land and are so soon of marketable age. In many instances the cash realized from fruit and plants of these are the nurseryman's chief support while growing other fruit and shade trees to a selling size. With a good and reliable assortment of small fruits the nurseryman may do much to encourage and foster an increased interest in fruit-growing among his customers, because he can so readily show them samples of fine fruit, which he cannot so soon do with larger fruits; and because plants are so cheap that with a little persuasion almost every one will buy and plant them. Give a man a taste of fine strawberries or raspberries of his own growing, and he will soon come to think that he may as well grow an abundance of apples, pears and plums. The great point is to wake people up to an earnest beginning, and if this even cost the gift of plants to stock a small garden, it may be found a good investment.

Here let me notice an error that sometimes creeps into our practice. The introduction of new varieties has proved so profitable that many things of inferior quality have been, and probably will continue to be, introduced. They come with many and extravagant puffs, perhaps supported with certificates from eminent horticulturists. We buy them at high prices, exercise all our skill to multiply plants, and as soon as possible, pass along a supply to our customers, not exactly with our endorsement of their excellence, but with the high praise of the originator so attached as to carry the impression that we fully believe it. A few well-posted amateurs un-

derstand all this, and buy with a full knowledge of the risk they run; but the majority do not look beyond us, they buy because *we* offer the plants and they have confidence in *us*. And when the proof comes with its bitter disappointment, they not only lose confidence in us, but are disgusted with the whole subject of fruit-growing, and will lose no opportunity to tell their failure to others.

Can we ignore the fact that in these matters we stand as teachers to the common planter, and that on our success, the good we can do our customers, and the aid we can give the cause we love, depends largely upon our sending out only the most useful things, and in such manner as shall make them successful in the hands of those who receive them? It is fitting and proper—nay, it is our *duty*—to test and prove all things new and promising, and he who does this, whether amateur or professional, is deserving of thanks. We only need caution about sending out with our endorsement things not well tested, or of inferior quality. He who produces a new fruit, which is a real improvement on those we have, is a public benefactor. In this there is much of interest, which may become to the nurseryman a sort of amusement and recreation. The past twenty years has done much to improve our small fruits, but still there is room, and we believe that great improvements are yet to be made. Is it not the duty of each and all of us to observe carefully and experiment as we have opportunity, and thus do something to pay for the benefits we receive?

A brief essay can say little about the general treatment of small fruits. Those who become really interested will avail themselves of hints and directions to be found in horticultural books and papers; this knowledge they will sift and test in their own practice, and through some successes and some failures, will finally become very good cultivators. It is well to bear in mind that a deep and thorough preparation of soil is one great element of success, and that this is best and cheapest done at the very commencement, before any plants are set.

With the strawberries I have always been most successful in spring planting. Plant early, give clean culture, mulch in winter; take one, or at most two crops, and then turn under, planting a new bed each spring. This will give any one an abundance of cheap and delicious berries—the first fruit of summer, and a real luxury. Why don't *everybody* grow them? The varieties that have done most for me are Wilson, Green Prolific and Russell. There are doubtless many other good kinds, but these do not often disappoint.

Of raspberries, Franconia and Orange are productive and delicious, but they must have winter protection. Philadelphia does not need winter protection, yields large crops, and is of fair, medium quality. The black-caps, particularly Miami, will pay best, and give the best general satisfaction. They are excellent for canning, preserving or drying, thus giving us a supply of something good and palatable the year around.

Of the currants little need be said, except perhaps to present an earnest petition that they may be removed from weedy corners and given a fair chance according to their merits. White and Red Dutch, Cherry and White Grape, with Black Naples, will answer all our needs, except it may be for a late variety—for this, some are satisfied with Victoria. I would like something larger and better in quality, but

have nothing to recommend. I have the past summer seen a variety under the name of Long Bunch Holland, (probably Long Bunch Red of Downing,) which appears to be the thing needed. It is of very strong upright growth; foliage very large and abundant; apparently two weeks later than Red Dutch; bunches very long (many of them six inches); quality and size of berry about the same as Red Dutch. If, on trial, these seeming good qualities are sustained, it will be a valuable addition to our list. It is not generally known how much is gained by planting currants in autumn. Their season of growth usually ends by middle of September. The leaves fall and the plants are dormant. If removed then they soon make a new root growth, which will push the next season's plant growth twice as far as when planting is delayed until spring. The same is true of cuttings. Plant your cuttings in early autumn; mulch heavily during winter, and the following season's growth will surprise and please you.

Gooseberries are rather too *sharp set* to be general favorites, especially as it is admitted that, owing to mildew we can do nothing with the larger varieties. True, they are not as useful or as much needed as currants, yet my garden would seem incomplete without them. For culinary purposes we find them useful, and when ripe, not bad to eat from the hand. Carefully trained to stake or trellis and well loaded with fruit they will attract much attention.

In blackberries, our ambition would be gratified, if we could equal some patches of wild fruit that are fresh in our memory, but at present this seems beyond our reach. We have yet nothing that we know to be entirely hardy and productive. I hope the Ancient Briton will meet our wants, but ask for another year of trial. Kittatinny seems to be growing in favor, and with slight winter protection will give paying crops of very good fruit. It seems to me that most cultivators err in their treatment of raspberries and blackberries; that they cultivate too much and too deeply, thereby injuring the small fibrous roots which lie near the surface and are the chief support of the plants. Would it not be better to prepare the ground deeply and well before planting, and after planting depend more upon light culture and *mulching*, thus leaving all roots uninjured, and securing a degree of coolness and moisture not otherwise attainable.

In grapes, Delaware and Concord always please us, and beyond these there is such a multitude of aspirants for favor, that I dare not particularize, but would say to all, be sure and plant enough of the two named, then test as many more as you can afford, and *hold fast all that are good*. The great wonder is that so many rest easy and satisfied, without a supply of grapes, when almost every farm, or set of buildings, affords some sheltered place where they might be grown. To the amateur, with some means, their culture under glass affords a pleasing enjoyment and luxury, worthy of consideration.

I will close by hoping that the time is near at hand when every land owner, and all dependant upon them, shall have an abundant supply of choice and healthful fruits always on their tables as an article of diet.

Mr. PEFFER read the following paper on

PLUMS AND THEIR DISEASES.

Plums were a total failure the past year, on account of the atmospheric leaf blight caused by certain changes from heat to cold, and then wet weather for a number of weeks afterwards. This blight, with us, affected almost all vegetation, fruit trees as well as bushes, shrubs, forest trees, vines and grain. All early sown grain proved almost a total failure. The scab on the apple is also caused by the same blight; but some are affected on account of thinner skin and more tender varieties. Thus, very thick and glossy leaved trees, of the different varieties, were not so much affected, as for instance, almost all the Russian sorts of apples and their seedlings, pears of northern origin, early Richmond and Kentish cherries and their like, plums of thick leaf, stem, and fruit smooth, glossy surface—our wild varieties were not exempt, and are mostly dead; in short, all the plum trees, cherries, currants, vines, forest trees, etc., etc., that shed their leaves before the middle of August, are now dead; those that dropped their leaves before the middle of September are very sick, and unless a very favorable season ensues will die next summer. Thus we find that wherever this hot air current had a full sweep, everything has gone to destruction, but where there was a wind-brake or shelter, everything flourished, as can be proved by most of you here.

Leaf blight! By this I mean diseases of the leaf that are caused by atmospheric influences, such, for instance, as the falling of the honey dew and a hot air current afterwards, before a rain. If no rain falls after such, and the air is heated to such an extent so as to evaporate all the water in the honey dew drop, then blight does not occur. This dew drop is a hard, shiny substance, and the rays of the sun or heat will affect this spot so as to discolor it and finally scorch it. Thus dried up, the surface of the leaf is ruptured, and when cold or wet weather sets in it generally causes a rot or fungi, and in a few days after crimps the leaf or causes small holes to fall in it, disturbing the free circulation of the sap, by which the leaf ripens prematurely, and falls before it has perfected its duty or functions, at any time during the growing season. This summer we had a streak of hot air pass from S. S. W. to N. N. E., on the 17th of June, I think. On that day the thermometer was at 84 degrees before sunrise, and almost a gale of wind, as stated before, from S. S. W. Towards the middle of the day the mercury ran up to over 110 degrees. All the new wood and leaves on plants were wilted; even cabbages lay flat on the ground; although the air seemed to be moist, yet all vegetation lay, wilting, scalding and hanging down where this wind had any chance to strike it. Towards night, however, it began to change, and the next day a cold north-east rain set in, and we had rain, more or less, every day for a month. All this time, the rot and fungi spread upon almost over everything, and in July many of the leaves commenced to drop, and of course the fruit was at a stand-still, and never got ripe. Some was half grown, and some nearly full size, but without flavor or taste, just in proportion as the leaf was affected, earlier or later in the season.

There is another variety of blight, which does not affect the plum trees, but the apple, pear, quince and crab-apple, called FIRE BLIGHT. This is a different disease, affect-

ing the ends of the new shoots. Some horticulturists claim that it is caused by an insect, but my mind differs somewhat with theirs. I think it is caused by an electric air current, which suddenly congeals the sap in the new shoot, and in the ends of the new leaves, and in less than six hours afterwards the sap is converted into jelly. This jelly seems to be poisonous, for the leaf commences to wilt, and in less than three days it will turn the leaf and bark of the shoot black, and this poison will run down, more or less, towards the trunk of the tree, in the bark. The only way to save a pear tree from this disease, after it has commenced, is to cut the limbs back to where the sap is not affected in the bark of the tree, which is discolored and looks a little glossy or transparent. On the apple it will stop generally before it gets back or down very far, as the bark is more rough, hard and dryer than in the pear, and takes longer to rot the sappy filaments, on account of its acidity; and on this account a sweet apple tree is generally sooner affected than a sour one. There are sour apple trees that are affected on the end of the limbs, but are more inside of the tree than are those of an insect, that works in the pith of the new shoot, and generally leaves a little hole where they enter or leave the limb.

Mr. HOILE said that in Winnebago they had this year an excellent crop of cultivated plums, so abundant that they had shipped them abroad. But the wild plums had failed entirely, and they were paying no more attention to them. Those they had shipped to Chicago were reported larger and better than the average plums in that market.

Judge KNAPP desired to call attention to one fact that this remark of Mr. HOILE's called to his mind—why Winnebago was so good a fruit county. That county may be placed in the timber belt of the state, and is more protected from the cold winds than the prairies. Hence the trees are preserved during the winter, and it was another instance of the good effect of screens to protect trees. There was also in that county more rain-fall than on the prairies and openings, which aided the growth and productiveness of the trees. Cold spring winds blighted the flowers and new-set fruit. The best remedy for that was a protection of trees in the direction from which that wind came. There was another wind even worse—a hot one, that comes here from the arid plains, from the southwest—that dried and fairly burned up the trees, and their leaves and fruits, as had been described by Mr. PEPPER. The great enemy of the plum is the curculio, which can be destroyed only by catching. Naturalists had proved that the quail was one of the very best of our insect-destroyers, one that did no damage to the farmers. Laws were enacted to protect them for the sportsmen, but none to protect them for the benefit they will afford to the fruit-growers, in destroying the insects in the orchard and the garden. He would have this beautiful bird feel not only at home, but safe, in these places.

Mr. MCAFEE bore his testimony to the good qualities of the quail, as an insect-iverous bird. But while up, and the subject of plums was before the society, he desired to call attention to the varieties of the "Chickasaws." This variety of the red or white plum, were excellent bearers, and many of them of excellent quality, and he had seen them kept for two years in a barrel or other vessel, with only water

as a preservative. The fruit must be carefully picked and placed in the vessel, and water at the boiling point poured over them, when they must be covered over tightly, weighted down and kept in a cool place, where they will not freeze.

THE ENTOMOLOGIST.

Mr. KELLOGG said he and some of the others would like to hear something about the destructive insects, and he called on Professor DANIELLS to tell what he could of their habits, and the means of destroying them. The professor spoke on the habits of several insects, some injurious and some beneficial to the horticulturist; but his remarks were without notes, and he has not written them out.

Remarks were made on insects by Messrs. PLUMB, KNAPP, GOULD, McAFEE and others, and the discussion was closed by Mr. LAWRENCE, who offered the following, which prevailed:

Resolved, That in accordance with the recommendation of President HOBBS, W. W. DANIELLS, Professor of Agriculture in the State University, is hereby appointed Entomologist of the State Horticultural Society.

Afternoon Session.

At the afternoon session, the premium list was reported, amended and adopted.

ELECTION OF OFFICERS.

An election being held, the officers for the year 1870, were chosen as follows:

President—JOSEPH HOBBS, M. D., F. G. S. and Cor. Mem. R. Hor. Soc., Eng.

Recording Secretary—O. S. WILLEY, Madison.

Corresponding Secretary—F. S. LAWRENCE, Janesville.

Treasurer—GEO. A. MASON, Madison.

Executive Committee—J. C. PLUMB, J. S. STICKNEY, GEO. P. PEPPER.

STANDING COMMITTEES.

Nomenclature—J. C. Plumb, A. G. Tuttle, Wm. Finlayson.

Seedlings—F. S. Lawrence, J. S. Stickney, J. Gould.

Finance—W. T. Leitch, J. Gripper, C. H. Greenman.

Observation—J. G. Knapp, G. P. Pepper, G. J. Kellogg, I. J. Hoile, C. Waters.

Judge ORTON being present, was called out, and said :

Mr. President and Ladies and Gentlemen :

Called upon unexpectedly to speak on this occasion, I feel totally unable to say anything of any special interest to you. *Practically* I know but little, and *scientifically* much less, of horticulture. However, in common with others, I do know, that it is the highest department, and the perfection, of the art and science of agriculture. There is a higher and a nobler view of the tillage of the soil than its mere utilities, and to extort from the reluctant earth, already exhausted by greedy ignorance, a scanty subsistence, "by the sweat of the brow."

This pursuit has now assumed its proper grade, facilitated by the genius of invention, and illuminated by science, as the very foundation of all the departments of political economy, and as the most agreeable, healthful, profitable and honorable, among the avocations of man. It now has, beyond the mere *practical*, its spiritual or æsthetic and social bearings and influences upon society, in educating, purifying and refining.

Among our people, especially in the west, there is a general and a fond attachment, to agricultural pursuits, for the reason, probably, that nearly all of us, no matter what may be our present business or profession, came originally from the *farm*, and the pleasant memories and reminiscences of childhood and youth, amid the diversified labors, alternating seasons, healthful sports and innocent recreations of the farm, still linger about us, and nearly all of us intend, some time or other, to return and spend our last days, as we did our first, upon a farm. I think I can speak for my own profession, that most of us hope to become able, by hard work, in the responsible, wearing, and vexatious, and poorly paid labors of our profession, to buy a farm, and as the highest object of our ambition and most pleasing anticipation, return to its peaceful and happy retreat, for the remainder of life.

Those two good old Saxon words, *farm* and *home*, are, in our minds, most intimately connected, and suggestive of the seasons of human life, and especially of that spring time, in the yards and gardens of the farmer's home, when birds sing, flowers bloom, and children play. Yes, it is a part of our busy nature to love the *farm*, inbred in our race and the best and noblest sentiment, inherited from old England and those other countries, which have made the word and pleasing associations of *home* historical.

In the astonishing progress of our times, and the intelligence of the age, that which was in former times regarded somewhat as mere practical, mechanical drudgery in delving in the soil for bread, has taken high rank, and the practical art of agriculture has now become, under the auspices of your society and kindred ones, for the promotion of horticulture, elevated into one of the fine arts.

Besides the health and subsistence of the body, you purify the moral sentiments, educate the mind, refine the taste and improve society. The apple is no longer the apple of discord, and has ceased to be the representative of forbidden fruits, and flowers are not "born to blush unseen and waste their sweetness on the desert air." It is your high mission to embellish the landscape with pictures of beauty, culled from the luxurious and diversified fields of nature, and scatter flowers along the

dreary pathway of life. It is a high and noble object, and consonant with the cultivation and refinement and Christian civilization of our day, and worthy of all honor and encouragement.

Thursday Evening.

HOW SHALL WE SELL OUR TREES?

At the opening of the evening session, GEORGE J. KELLOGG read a paper with the above title, that was listened to with attention.

How shall we induce the people to exchange trees for greenbacks? Do as do the tea merchants and dry goods houses—take a sample on your back and travel; it is so convenient. If this is not practicable, men can be had, too lazy to work, ashamed to beg, but willing to take glowing pictures of fruit, no matter if King of Tompkins, or anything else that is tender, if attractive; sell according to pictures, but deliver as convenient; if something new and rare, sell at fancy prices, but fill with common stock; as for instance, Clinton for Delaware, only call them Delaware. What highly colored clusters the purchaser will have in about three years, in place of the pale amber. How pleased will the good wife be to gather the Cherry Crab in the place of the Hislop and Transcendent. What an interesting field is opened for exploration of new varieties, to the man who gets an hundred seedlings in the place of the most approved varieties of grafts. Who knows but he may originate a Duchess, a Fameuse, an Early May or a Lombard; or, if a seedling grape, what if it should surpass anything known? What a fortune!

But, more seriously, is it necessary to send out agents in order to sell our trees? Will not persons wanting trees, plants, etc., buy direct of the manufacturer. Is it a fact that individuals cannot order direct from the nursery and obtain what they want? Will they wake up to find substitution not only of varieties but names? Have we men of our profession who coolly and deliberately substitute names? We hope it is only by mistake. Can we not sell our trees to the local trade, and direct to the planter? Is it necessary to send out agents? Will not judicious advertising and fair, honorable dealing dispose of all the stock we can raise? What supply have we now for the demand of spring? Have we one-half of what ought to be planted in Wisconsin within the next three months? What is the use of sending your agents into Minnesota, Iowa and Michigan to sell first-class stock, and thereby admit the worthless, tender varieties from the east and south that have so long cursed this fruit-growing state? My brother nurserymen, have we not yet learned what is safe to graft and sure to withstand any of our changing seasons? Have we rightly educated our customers to know that a two-year old tree is worth double one that is five; and can we not sell at prices that shall induce the purchase of the young tree? Do farmers need to buy brush of us, for fodder for their sheep and cattle? Will they not learn to fence their orchards? Must we raise trees fit only for bean poles?

What shall we do with the lying, swindling tree peddlers that swarm in nearly every community?—these men that buy such stock as they can get cheap—often worthless, never first-class—who fill their orders in every packing ground with the *lie* upon each label, and disseminate this stock all through our state, a curse to the community, a curse to the trade, and such a curse to themselves as ought to send every one of them to Waupun. Tens of thousands of dollars are thus taken from our state annually; and is it not worse than highway robbery? The man that sells me trees, etc., and takes fifty dollars, induces me to spend a hundred dollars in bringing these trees and plants into bearing, and after five years of toil and expectation to find them worthless—is he not worse than a highway robber? Can this not be made a criminal offense? Mr. President, will not your committee on memorials so present it to the present legislature, that these swindling scamps may be stopped in this nefarious business?

Resolutions were adopted to pay the Secretary \$50 a year; also the usual thanks to the people of Madison, to railroads, and the Historical Society for the use of its rooms, and the *Western Farmer* was declared the organ of the society.

At the evening session, "How we Grow our Trees," was detailed by Mr. PLUMB, with specimens of budded and grafted trees to illustrate; commencing with the seed, showing the order of growth, comparative development of upward and downward extension, with the progress of the tree from youth to age.

INDUCEMENTS FOR NEW MEMBERS.

The following proposition was presented and accepted by the society:

We, the undersigned, will donate to each person who becomes a member of the Wisconsin State Horticultural Society for 1870, by payment of \$3.00, the following named plants, to be packed and delivered at our nearest express office, in the autumn of 1870:

C. H. GREENMAN, Milton, Wisconsin—three Concord Grapes.

J. C. PLUMB, Milton, Wisconsin—one each of two varieties Siberians, not now grown by others in Wisconsin.

GEORGE J. KELLOGG, Janesville, Wisconsin—one Hislop; one Transcendent Crab, two years old.

A. G. TUTTLE, Baraboo, Wisconsin—Rogers' Hybrid Grapes, of two varieties.

CHARLES WATERS, Sperryville, Wisconsin—two Miner Plums, one year on own roots.

J. GOULD, Beaver Dam, Wisconsin—one Tetoffsky Apple, two years old.

STICKNEY & BAUMBACH, Waupun, Wisconsin—three White Grape Currants; Weeping Willow.

G. P. PEPPER, Pewaukee, Wisconsin—one Hardy Grape; two new Siberians.

MESSRS. MORROW Brothers—a good advertising of this offer in *Western Farmer*.

CLOSE OF THE SESSION.

The evening, and the meeting also, closed by a general gathering, by request, of the members of the legislature and others, in the rooms, where several speeches were made by different individuals called out, in conversation, and in viewing the abundant supply of Wisconsin-grown fruits. And many an encomium was heaped upon the efforts of the growers.

The exhibition was the largest ever brought out at any winter meeting, consisting of 575 plates of apples, pears and grapes, mostly named, with some fine new varieties of seedling apples and Siberian crabs of merit; all of which were speedily disposed of in a most happy manner when the members of the legislature, by invitation, thronged the exhibition tables.

The society then adjourned, *sine die*.

ORNAMENTAL TREES AND SHRUBS.

At the meetings of the Madison Horticultural Society, held on the evenings of the 25th of February and 11th of March, 1870, O. S. WILLEY, secretary of the state society, read the following paper on this subject, which had been prepared for the state society, but crowded out for want of time during the meeting in which to present it for consideration:

In no pursuit of life will the time-worn adage, "a place for everything, and everything in its place" apply with more force and application than in the successful collecting and grouping of deciduous ornamental trees, evergreens and shrubs for the lawn. Many, and I may say most, look upon landscape gardening as one of the intricate sciences of a late day, of which the masses know nothing, and one only to be practised by the few, who have given it their study, time and attention, and who are classed as professional gardeners. I view it in quite a different aspect—as one of the most pleasant pursuits of life, a smattering of which may be acquired by us all, and beautiful in its bearing upon the mind of every man who owns ever so small a portion of God's creation. Not that every one will, or ever could, make a successful landscape gardener and be master of his or her profession; far from it. As well expect all the quacks to be masters of physic. But every man, with but slight observation and study, can choose between a Lombardy poplar and white elm, or maple, for his lawn. I say observation and study are essential elements in the selection and grouping of trees and shrubs. We are prone to acknowledge a tree is a tree; what more? Good so far; anything is better than nothing; but had your eyes been open a little wider, you might have discovered that your selection was in bad taste to couple with your location of grounds or buildings. You must remember that what you want is to add beauty to your home place, and he who has but two or three trees to plant upon his four rods front may do it with that tasteful simplicity which will have the desired result—as much so as if we had the most elaborate grounds of the city. And here we might say, that the beauty of a village or city home, is developed by a very different combination of grouping of trees and shrubs from that of the picturesque scenery of a western river, to the large demesne of a prairie, viewed in its vastness, only broken by nature's undulations. But in either case, the all important feature, for the most desirable and cheap adornment, is found in trees. To realize this in the fullest extent, one has but to be transported from a well protected home, where trees, for shelter, shade and beauty, abound, to

an unprotected prairie, where, like a desert, even a few stunted trees, if found, are the exception and not the rule; where we too often look in vain about the residences of the oldest inhabitant for that "leafy garniture," through or by which we may estimate their value. I am not to speak of trees and shrubs in an economical point of view; that is not, only indirectly, the mission of this society, but rather of the enchantment which a judicious use of them brings to any home. Despoil a place of this cheap adornment, and the otherwise best place has lost half, yea, more, of its charm. But think what embellishment may be given to so many of our homes by a judicious use of trees. Is your building old and unsightly? Then make it the background of groups of trees. It would be nothing very strange to make the most "ugly" place of our city, the most picturesque of all. If your front door is of some ancient order of architecture, and you have not the means to remodel to a fashionable one, then plant a tree in front of it, and by some slight curvature of your walk, to get around the tree, avoid an abrupt approach, and unsightly things may become a charm by combination.

But what shall we plant? And here, too careful study cannot be given to the selection of varieties, as well as the purchasing of them, with due attention to the cheapness, but not to be too much carried away with them, because cheap, nor yet, with the "light before you," grasp after high-priced things, because they may be new. As a safe and sure guide, buy of known, reliable parties, that is after exhausting the forests of such things as may be suited to your taste and grounds. But I must here remark, that forest-tree selections only apply to deciduous trees, and never to evergreens. And even the former is very much improved, if judiciously nursery-grown. Some very desirable ornamental trees can only be introduced into your grounds from the nursery, where they have been produced from the seed or very small transplanted trees, and by a series of transplantings have become acclimated to a cultivated and refined life, and will endure its hardships. It must be remembered that many of our native trees, like the Indian, do not stand civilization. The bare possibility of an evergreen from the forest succeeding, is removed in practice. Trials, without number, are the result of almost every one who has the least experience in tree-planting, and of the hundreds, and perhaps, I may say thousands, annually brought here from the forests, and sold "cheap for large trees," I doubt if one-tenth can now be found in a thrifty condition, and would not be much surprised if, on actual count, we were unable to find even ten thrifty trees in all the city, from forest plants. The production of evergreens from seed, layers or cuttings, is one involving time and patience. While small, all grow very slowly. A seed-bed of them may attain an average height of two inches the first year, though few nurserymen expect so good a growth; from three to five inches the second; four to six the third, and in about this proportion for the first four or six years; their growth will then be more extensive. These small plants, in the hands of inexperienced men, are almost as sure to fail and he to meet with disappointment, as they are meddled with. To grow them is the business of the professional man, until they have attained the size of from one to three feet; by which time, if rightly grown, they have been transplanted from three to five times, and will be lifted with as much root as top; and if done at the proper time and manner,

with the usual degree of carefulness, the check to growth is very slight; loss by death so small a per cent. as scarcely to be perceivable. Among evergreen shrubs, perhaps nothing will give better satisfaction than the American arbor vitæ, (*Thuja occidentalis*) either for single specimens or hedges. It bears shearing well, and can be grown in any desirable form, conical or square. I knew a hedge at the east, so firm from the use of the shears, and trained so broad upon its surface (being nearly three feet), as to make a walk for any ordinary man. I wish we had more of this kind of planting in our western grounds. We are told they do not succeed. I would answer, the cause is in the management; neglect while young to properly shear or cut back, for if this is not done while young, the close planting of our hedges tends to make them lose their own branches and become scraggy; but after the base is well covered, no further trouble exists. Chinese arbor vitæ is equally hardy; finer, dark green foliage, of slower growth.

Hemlock (*Abies Canadensis*) in its native habitat is one of the most formidable trees of the forest, but nursery grown, becomes one of our most desirable shrub evergreens; a little particular as to the location given it, delighting more in some cool and shady resort than in the bright sun; it should be transplanted in the early spring.

Balsam Fir (*Abies balsamea*) is especially well adapted to our northwestern, cold climate; sometimes called American Silver Fir, and is one of our most ornamental evergreen trees—as single specimens form perfect pyramids—of dark green foliage. This and the Norway spruce (*Abies excelsa*) are the most desirable of the pyramidal growing trees, as well as the most rapid, often averaging more than two feet in height for a term of years. Mr. BARRY records the growth of two, which he recently cut down, as being from two to three feet high in 1841, and on November 12, 1869, when cut down, 64 feet high, diameter of trunk 20 inches; branches resting on the ground covering a circle of about one hundred feet in circumference.

White Pine (*Pinus strobus*), native of North America, should be planted much more frequently than it is.

Scotch Pine (*Pinus sylvestris*) is a valuable foreign sort, hardy; and this, as well as the Austrian Pine (*Pinus Austriana*), with the heavy green foliage of both, contrast well with other trees. They are less pyramidal, and make a happy relief where many trees are planted.

The class of Junipers, of which the American Red Cedar, may be taken as a type, deserve much more attention than they receive. The trailing or prostrate, *Juniperus communis, depresso*, is a novelty in its way, scarcely ever attaining a height of more than a foot, but spreading out over the ground, forming a beautiful dark green bed, and so dissimilar from any and all others, that it should be in every collection of moderate size. This evergreen is never ostentatious and aspiring to overlook its entire surroundings, but humble, modest, creeping, as it were, along beneath its proud associates, its spray rising in beauty, but not loftiness, as if to peep about and watch, unobserved, its neighbors. I have seen it upon the banks of Lake Michigan, in the sand, covering a number of feet in diameter. It often grows from forty to fifty feet in circumference, the main branches lying or resting upon the ground in every direction, forming a dense, evergreen bed, often so much desired

and sought for in city lots. Many specimens we have seen, were as uniform and regular in their native wildness, as though they had been pruned and cared for by man. It will answer well for covering mounds or planting in rock work. In the shade of larger trees, in barren soils, the rich prairie or garden soils, it is all the same. It thrives equally well.

The Savin (European juniper) is less uniform than most American junipers; succeeds well in almost any soil and forms a pleasant contrast by its low, dense, dark foliage.

In the list of deciduous ornamental trees there are so many good ones, it is difficult to give prominence to any; but probably the American White Elm is fully entitled to the foremost position. It is a native of the entire United States, often attains an enormous size; prefers a deep, rich soil, but will adapt itself to the various localities of the country. With age it becomes quite drooping, so much so as to have acquired the name of American Weeping Elm. Many not conversant with the different elms, make a mistake and dig the red or slippery elm, a tree very much its inferior in every respect. Next to the elm we would place the maple, silver-leaved, scarlet, sugar and rock—all valuable in about the order named. The chief objection to the first is its tendency to split down. To avoid this, cut the top back, say at planting, and then in two years again cut back to nearly first cut, thus forcing a top with more branches, and by so doing avoid crotches. I have never seen a tree split that was thus treated.

The American white, or paper birch, is quite common in this state along the banks of the northern streams, and on the rocky cliffs. It is easily transplanted and of rapid growth. Some trees are drooping and some nearly upright growers. The European sorts, worked on the upright American stems, help to make up that class of trees which should have a place upon every lawn. The white birch is perfectly hardy, highly ornamental, very vigorous; and seems well adapted to the soils of this state. When one considers the beautiful silvery or grayish whiteness of its bark, which often shaggy as it exfoliates in papery sheets, makes a strong contrast with the surroundings; the straight spiral form of the tree, and the long, dark, slender branches, which become more drooping with age, it is difficult to name a tree which will give the planter better satisfaction, than will this American weeping birch. It is equally satisfactory whether planted in clumps or reared as single specimens.

The Linn or American Basswood, makes a fine, clean shade tree. Its foliage is remarkably large. It delights in a good, rich soil, where its branches will have a handsome, well-shaped head.

But it was not my intention to write for you a full description of all the valuable trees that might or should adorn our streets. The task would be too massive and your patience too much taxed. I have described a few, and there are others nearly equal, and some may prefer them to those I have named. In a more extended list we might find the Abele or silver poplar, a rapid grower; a sure producer of sprouts for the little ones; not uniform in its growth, but would be placed in that list where, by a naturally crooked body or wayward limb, we give picturesqueness to the scene, and not that beauty which we would expect in a well-grown specimen of American

Chesnut or Mountain Ash. The former is admissible in large plantations, as also the Black Walnut and Honey Locust. The Mountain Ash is always welcome, and some of the poplars—Lombardy seldom, and never for a street tree, unless in very long avenues. Cottonwood is very much better, indeed it should have had a place much higher in the list; bears hardship well; affords plenty of shade, and is about equally indifferent to wet or drought; does well everywhere.

Then there are the willows. I wish we had more of the Golden planted. What is there better? Cut it back thoroughly, feed it well, and it is hard to excel it even as a weeping tree. None will, unless it's the Wisconsin weeping willow disseminated by J. S. Stickney. This is as drooping as the common weeping, perfectly hardy, and its cultivation should be more extended. All the others are tender. But happily we have in the weeping mountain ash a tree that will substitute very well. The very pendulous or drooping branches of this tree gives it a striking and peculiar appearance, and where we have so few good weeping trees this should be more extensively noticed. The weeping ash and birch also fill a niche in the arborist's collection.

But I hear you say that for the city garden we do not want all trees and evergreens; these are for the country. Granted, and yet it is a fact that more evergreens are planted in the cities and villages of the west, than by the farmers in the country. But this is all wrong. The evergreens are in every respect a protective tree, and for belts or screens upon the vast prairies they are well adapted, and the bleaker or more severe the climate, so much more will their presence add to the comfort and cheer of the surroundings. Would that I could impress upon the farmers, of this county at least, the utility of more evergreens upon their farms. Expend fifty dollars in one thousand evergreens, and plant them about your prairie homes in this state, they will in five years attain the height of ten to twelve feet, and then when you have realized their blessed influences by an amelioration of the winter's cold upon your stock, and found how much better your orchard does for being in a grove, you will fully realize what a cozy, snug and beautiful place you have, for so small an outlay—not half the farm would buy its beauty. But this is for the country. Here in the city we want our shrubs, our roses, vines and creeping things. Have you not gathered these, and o'er their beauty sung their praise? If not, then let me remind you that there are

“By placid lakes,
Deep in the forest's leafy shade,
Wave plumed ferns and filmy brakes,
In verdant tracery arrayed;”

and that you have too often within your own reach some of the most beautiful of God's creation; unimagined pleasure—free as the air you breathe. By the road side, in the forests, from the wasteful marshes and the meadows green, we find grasses, ferns, mosses and shrubs fit for any parterre, that only require to be far brought, to be dear bought, to secure to themselves a petted home for admiration. The nurserymen will tell you the demand is for large plants—something for immediate effect. This is all wrong. Few nurserymen strive to make for customers what would answer for “specimen plants,” but rather grow plants for the masses. For this reason, the small plants will not be so distorted by crowding as the large

E.—HOR.

ones, so that by a little attention to the habit of the plant you can make judicious selections; but in no case be over anxious about their rapid growth. Half or more of our admiration for it consists in seeing it grow, or realizing that the plant is thrifty under the treatment we give it.

Shrubs should be planted early, for some of them are early risers, that is no sooner than the cold of winter is passed, and a few bright days of spring have told of the joys to come than we are reminded that summer is near. But perhaps, this caution is uncalled for, as most ardent gardeners are found with spade, fork and rake in hand as soon as the snow and ice have disappeared. It is not for such that I am writing. At their feet I might sit; but for others, who can only halt for the moment from the delirium of business to take a hasty look, or snuff the breeze as it is wafted from the early crocus, or the snow-drop, nodding in content, and the hyacinth and tulips in their beauty. To such I say, see that your ground is well prepared, that it is mellow, and in such a condition as to be well drained; reasonably rich from nature, or artificially made so; and your plants will be a joy forever.

In the Dwarf Flowering Almond will be your first love, always wanted, popular and yet not half appreciated. Neglect grows it scraggy and ill-shaped, but, with a little attention and cutting back as soon as it is out of bloom, the increased thriftiness and consequent bloom will well repay for the sacrifice. A new white Flowering Almond is said to be very fine and equally hardy, and like the former is loaded in the spring with spikes of elegant flowers almost like roses.

The Lilac—that good old home adornment, when we were boys together, will always be planted. No yard is too small or too large to exclude it. Aside from the common white and purple are the Persian and Chinese. The latter is especially desirable; not liable to suckers or sprouts; flowers resemble the common purple but much darker. In its foliage its chief beauty lies; this is dark, glossy green, very large and rich. These plants are so hardy and indifferent to soil and treatment as to have been sorely neglected, but these, as well as the syringas, should have better treatment, and their beauty would be enhanced. The syringas are all easily propagated—thrive in a common soil; foliage rich and massive; bloom profusely; pure white and very fragrant.

Spirea, whose list is "legion," is not as favorably known as it deserves. This class forms a group of many ornamental shrubs, all quite hardy, and thrive with quite indifferent care. Flowers of various shades of color, from pure white, white with rosy tinge, yellowish white, purple, rose, lilac, pink, etc. From a very large list probably the best six are: *Spirea opulifolia*, five or seven feet high; flowers white with rose tinge; *Spirea salicifolia*, from two to five feet high, white to rose tinted in June and July; *Spirea tomentosa*, common in wet ground, but none the less desirable; about three feet high, with a semicircular head of purple flowers; *Spirea prunifolia*, larger than the previous, flowers by threes or sixes, white as snow, very durable; *Spirea Reeverii*, one of the most elegant of the class, flowers in clusters, white—in June; *Spirea bella*, dwarf, flowers pink.

There are host of other sorts that might be added to this list, but the above is sufficient for any single garden, and planted singly, or grouped, the effect will be equally fine. My advice is to all, plant more of them.

The *Deutzia*, from Japan, is as hardy as any shrub in our list, and far more beautiful than some which receive more attention—a profuse bloomer; blossoms nearly white; of easy culture; its foliage forms an attractive feature, and none who see it in the early summer can help but admire its beauty. Then we may plant beside it, what will vie with it in beauty of flower but not in shrub—the *Forsythia viridissima*, which will furnish you with a profusion of rich, golden flowers, and though it is a little tender, it will well repay the care in protection. Don't do without it, nor forget to find room in some shady, protected nook for the Japan Quince (*Pyrus Japonica*.) The brilliant fiery buds and flowers of this plant will attract the most casual observer; and stupid indeed is he who will not find beauty in so fine a flower, for while in bloom there is none more attractive. It blooms very early, before the young foliage is fully grown, and I have known its attraction to be a little premature.

No sooner is this passed from our sight than comes the *Weigelia rosea*, from China. Would that our neighbors there would now send us many more as fine, for this certainly is one of the finest in any garden; very easy in cultivation, succeeding in any good soil; profuse bloomer, so that its branches are loaded, bending gracefully and beautifully with their load of beautiful rose colored flowers.

Tartarian Honeysuckle, a little larger than the last, is always handsome, whether covered with its white or pink bloom or with the scarlet fruit. It is of very uniform growth and forms a fine bush. Equally so is the good old fashioned snow ball, too common to need description; and an ornament to any garden.

Then there is the Flowering *Acacia*, though a little objectionable on account of suckering, if planted where the roots are disturbed, yet when covered, as it is sure to be, with its profusion of pea shaped flowers of a pinkish white in June, the objection is forgotten, and we welcome it to our home. The foliage is locust like, and though it is not a clear, compact shrub, it is desirable.

Purple Fringe or Smoke Tree, is desirable for its peculiar feather like blossoms. Sumac, once popular at the East, is now mostly forsaken. Its language, "splendid misery," is too indicative of its general character. Few plant it. Altheas are favorites where they will endure the climate, but nature never intended them for a Wisconsin climate. Magnolia, the pride of the south; not strictly a shrub, though in this climate it will always be shrubby, is too tender to pay for the room it occupies. Even if they endure the climate for several seasons, I have seldom or never seen them bloom, and in this is its chief beauty, varying from white, rosy purple, to bluish white.

Mahonia, is an elegant evergreen shrub. The foliage is of a very dark, glossy green, almost purplish, with prickly points, and gives the plant a very rich appearance; remaining on the plant all winter. It should be slightly protected, if not covered naturally by snow.

We must not forget the Privet or Prim, from Europe, where it is an evergreen, with small green foliage. Here it becomes deciduous. Privet forms a fine single bush, but its chief utility is for hedges, growing rapidly and forming a very dense mass, purely ornamental, as it has no thorns.

Euonymus or Strawberry tree has been planted quite extensively, but is too ten-

der. Foliage is handsome, purple flowers, succeeded with brilliant, scarlet fruit, which hangs on quite late; also a variety with white fruit; but both are equally tender.

Box—the common garden box of the east, and a general favorite for low screens and walk borders, is not adapted to our climate—often tried and as often failed.

But can a garden be without its climbers? It certainly would lack one of the

"Bright gems of earth in which per-chance we see
What Eden was, what Paradise may be."

For no shrub, evergreen or tree can ever take the place of the arbor, well-trained with its vines of Honeysuckles, yellow trumpet, evergreens scarlet monthlies—sweet-scented and Chinese. These are always favorites, but scarcely less so than the trumpet flower, Dutchman's pipe and Virginia creeper, or the American woodbine, most ornamental of all, growing with great rapidity, covering in a very short space of time whole sides of large buildings, and the tallest trees; there is scarcely a yard in our city but may employ this vine to good advantage in screening some out-building, or giving their grounds a varied scene by setting a pole and allowing this vine to climb it.

Then, not forgetting the roses, plant Queen of the Prairie, Michigan, though its flower is single it is almost equal to the former, being more hardy, and such a profuse bloomer that it is very desirable. Add to them the Baltimore Belle—the best of all, protect it in winter, and your group will be amply stocked, your home will be a paradise.