

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.