

Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

- Coloured covers /
Couverture de couleur
- Covers damaged /
Couverture endommagée
- Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée
- Cover title missing /
Le titre de couverture manque
- Coloured maps /
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur
- Bound with other material /
Relié avec d'autres documents
- Only edition available /
Seule édition disponible
- Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure.
- Additional comments /
Commentaires supplémentaires:

Continuous pagination.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /
Qualité inégale de l'impression
- Includes supplementary materials /
Comprend du matériel supplémentaire
- Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées.



THE WINDSOR CHERRY.

THE CANADIAN HORTICULTURIST.

THE
Canadian Horticulturist.

VOL. XIV.

1891.

No. 3.



THE WINDSOR CHERRY.



THE Windsor Cherry, which forms the subject of our frontispiece for this number, takes its name from the town of Windsor, Ont., where it originated on the grounds of the late James Dougall. It was bought up by Messrs. Ellwanger & Barry, of Rochester, who have introduced it to public notice, and therefore it has been first tested in the State of New York. It has been favorably mentioned every year of late in the report of the Western New York Horticultural Society, and appears to have now attained an established reputation as the best late, sweet black cherry. In season, it is a little later than the Elkhorn, or Tradescant's Black Heart, a variety which is a prodigious bearer of fine large fruit, and firm enough for shipping any distance; but, unfortunately, the latter is inclined to rot in moist weather, a fault which it has in common with most of the Bigarreau class, and one to which we hope the Windsor may prove an exception. The great value of this cherry to us in Canada is its hardiness, and, should it prove to be in this respect all that is claimed for it by its introducer, it will extend the line of the profitable culture of the finer varieties of the cherry farther north than has hitherto been possible. In southern Ontario the Windsor will also be highly valued on account of its season, for it will keep up the supply of fine cherries well on toward the end of July.

CHERRY GROWING IN ONTARIO.

IN selecting varieties of fruits for planting, either in the home garden or in the commercial orchard, one very important consideration is the choice of such varieties as will best cover the fruit season; for, in the first place, it is very important to have a successive supply for our tables, and, in the second place, it is necessary to carefully avoid causing a glut in the market, at any one time, of any particular variety of fruit. With those who are situated in southern Ontario, where the choicer varieties of cherries may be grown, there is perhaps no line of fruit culture more encouraging than the production of the finer varieties of this fruit. There is scarcely any more competition in the offerings of this fruit than in peaches, and the price, therefore, is usually up to a very satisfactory figure. We have tested, at Maplehurst, a large number of the finer varieties of the Heart and Bigarreau cherries, and although, even in this favorable locality, the fruit buds are often cut off when the temperature goes beyond ten degrees below zero, yet, on the whole, we have found them to be a decidedly profitable crop. Probably no fruit would be more so, were the yield regularly abundant, but two years out of three there is more or less of a failure, from one cause or another, in the case of the choicer varieties; and therefore we would not be justified in recommending them for general planting in this Province. Fortunately, however, we have varieties such as the Kentish, Early Richmond and Montmorency, which can be widely grown in this country, and we are introducing from Russia some still more hardy kinds, such as the Ostheim, the Vladimir and the Bohemian Queen, which will no doubt be able to stand even the climate of our cold north. The pie cherries are so much in demand in our markets for culinary uses, that they are steadily advancing in value, and little behind the others in the matter of profit to the grower.

The following is a list of Heart and Bigarreau cherries that have succeeded well with us at Grimsby, selected with a view to cover a season of about six weeks, from about the first week in June until about the third week in July:—Early Purple, Governor Wood, Knight's Early Black, Great Bigarreau, Black Tartarian, Elton, Napoleon Bigarreau, Black Eagle and Elkhorn. To these we add the Windsor with great confidence, on the authority of many prominent fruit growers of Western New York.

THE KIEFFER PEAR.—Some of the nursery agents who are selling stock in this part of the world, are recommending the Kieffer pear. Our readers, doubtless, know better than to invest in any such stock. In the South, where it is difficult to grow fine pears, the Kieffer and Le Conte are better than no pears, and may there be successfully grown. But in this latitude it is practically worthless. The stories told about its being blight proof are pure fiction—it blights just as readily as any other variety.—*Orange County (N. Y.) Farmer.*

STARVING ORCHARDS.

It is a very common mistake of growers of the apple and pear to suppose that they need very little manure. While still young they are kept thrifty by manure applied to the crops, but when once they reach bearing age they are left to shift for themselves, and when they cease to grow with any vigor or to yield scanty crops of scrubs, he blames the orchard for its barrenness when he should blame himself for starving it.

It has been stated on very good authority, that a crop of one hundred barrels of apples per acre, draws as heavily upon the soil as a crop of one hundred bushels of wheat. In support of this, we call the attention of our readers to the following table, showing the amounts of the most important fertilizing elements which are withdrawn by three of our most common fruits. The first line for example, shows that 1000 pounds of apple substance contains $\frac{8}{100}$ of a pound of potash, and, therefore, a crop of 20,000 pounds takes from an acre twenty times that amount, or sixteen pounds of potash.

APPLES.	Potash. lbs.	Phos. Acid. lbs.	Nitrogen. lbs.
1000 pounds.....	.80	.03	.6
Crop of 20,000 pounds per acre...	16	6	12
PEARS.			
1000 pounds.....	1.8	.5	.6
Crop of 20,000 pounds per acre...	36	10	12
GRAPES.			
1000 pounds.....	5.0	1.52	1.70
Crop of 10,000 pounds.....	50	15.20	17

But the great question is, how to get enough manure to feed these orchards; for that from the barnyard is altogether insufficient. Well, the commercial fertilizers are excellent and even 200 to 300 pounds per acre will have a marked effect, while 600 pounds per acre is none too much.

The cheapest fertilizer for orchards on sandy loam is our common wood-ashes. Our American friends appreciate their value and are buying Canadian ashes by the car load to enrich their orchards and gardens. Canadians so little value them that they sell at five cents a bushel to speculators, and then they

buy commercial fertilizers at \$2.00 per bushel, many of which are adulterated. Ashes are worth twenty-five or thirty cents a bushel for the potash and phosphoric acid they contain, and this is their real market value in the United States as a fertilizer.

For some soils wood-ashes alone give excellent results with fruit crops, but in most soils phosphates and nitrogen should also be added in some form. Prof. James of the Ontario Agricultural College gives the following as an excellent recipe for making a complete manure for one acre, viz. :

40 bushels woodashes @ 10 cents	\$4 00
100 " crushed bone @ 1½ cents	1 50
100 " sulphate of ammonia @ 3 cents	3 00
	<hr/>
Total cost	\$8 50

He further stated at our winter meeting, that a commercial fertilizer of the same value for an acre would cost \$12.50.

LOCAL HORTICULTURAL SOCIETIES.

THE subject of the formation of local Fruit Growers' Associations, in affiliation with the Ontario Fruit Growers' Association, has often been brought up for consideration at our meetings ; and although it was acknowledged that such societies would be very useful, the subject was dropped for want of a practical plan of operation. If we could have local societies in affiliation with our Association, and thereby entitled to receive all our publications, as well as help from us at their annual meetings for discussions of topics on fruit culture, they in turn agreeing to send one or two delegates to our annual meeting, there is no doubt at all that great mutual benefit would result. We might further incorporate in our annual report some account of their work, together with a list of their officers, and any important papers read at their meetings.

At our last annual meeting this subject was brought up for discussion, and it was suggested that possibly all necessary machinery for the formation of such local societies was already provided in the "Agricultural and Arts Act." Accordingly some of our members, in various places, are now making an effort to organize, under the provisions of that Act, local associations under the name of Horticultural Societies.

It is evident to any one, who carefully studies the Act referred to, that its chief objects are to provide for the holding of meetings for the discussion of horticultural topics, and to circulate horticultural literature ; it is also evident that this object has been almost wholly neglected by the Horticultural Societies now in existence. Our proposition is to form societies in which these features will be prominent, and thus more fully carry out the true intent of the Act.

Mr. Thos. Beall, of Lindsay, writes that an attempt is being made in that town for the formation of such a society, and he says the plan proposed is as follows :

" A declaration in the form of schedule B. to the Agricultural and Arts Act will be circulated for signature, and as soon as 50 names are obtained the " declaration " will be forwarded to the Minister of Agriculture, who will then cause a notice to be inserted in the *Ontario Gazette*, see Sec. 61 to 64 " Agricultural and Arts Act." We shall then receive from the county society, at the proper time, our proportion of the grant to the county, which will be, perhaps, \$50.00 or more. The Society will be called, however, a Horticultural Society, and not a Fruit Growers' Association. But this will make no difference to us, as the main object will be attained, and money will at once be sent to the Ontario Fruit Growers' Association sufficient to make each member of our Society a member of the Association, and you may observe by Sec. 38 and its five sub-sections, that the object of the Horticultural Society is identical with the proposed branch of the Fruit Growers' Association.

WINTER MEETING--II.



OUR old friend, Mr. Fred Mitchell, of Innerkip, was present at the Wednesday evening session. An enthusiastic rose grower, he was brought to his feet by an able paper on Rose Growing, which had just been read by Mr. Webster, of the firm of Webster Bros., Hamilton, and which will appear in full in the annual report. Mr. Mitchell gave the following choice of roses, one of each color, for the amateur's garden.

Prince Camille de Rohan (dark), General Washington (red), Paul Neyron (pink), and Coquette des Alps or Madame Plantier (white).

A discussion arose upon which is the best paying red grape. Two prominent grape growers, Mr. Carpenter, of Winona, and Mr. Orr, of Stoney Creek, gave their opinions. The former pronounced the Lindley as the most profitable, and the latter the Delaware. In reply to the question as to whether Moore's Early succeeded in heavy soil, Mr. Orr said that it had done well with him in such soil, but Mr. Tweedle had not found it nearly so productive as the Worden.

Prof. James, of the Agricultural College, Guelph, gave a very interesting and instructive address upon Fertilizers. He stated that the leaves of trees are too valuable to be wasted, and should be kept upon the ground beneath, and there, in their decay, they will return a certain amount of potash to the soil. A large amount of the litter of pruning can also be used in a compost, and in this way is more valuable than burnt to ashes. Fruit draws very heavily upon the element of potash in the soil, and for this reason it is important to supply it liberally in fertilizers that are applied. Mr. James showed by a chart the great value of wood ashes as fertilizers for our fruit orchards, and this chart will be published in our report for 1891.

In speaking of apples for our northern sections, Mr. G. C. Caston, of Craighurst, recommended the following as an excellent list: Summer—Yellow Transparent, Duchess and Haas; Fall—St. Lawrence; Winter—Peewaukee, Golden Russet, Scott's Winter and Baxter, or La Rue. The last named is one of the best market apples grown in the County of Simcoe. It keeps till February and brings the best price of any variety, but during the last season it was badly spotted. Ben Davis is only half hardy in the County of Simcoe.

Mr. Caston advised any one living in the northern sections who wished an orchard to stand for a long time, to plant Talman Sweet and Tetofsky as stocks and top grafts upon these. In this way he found it possible to grow with marked success the Northern Spy and the King, varieties otherwise tender in that county; and a point of no small importance was that they were more productive and better in quality than when grown on other stock.

A more extended report might be given, but it would scarcely be in place, considering that our readers will receive it in full in our annual report for 1890.

OBJECTS OF PRUNING.



ANY blunders will be avoided if the true objects of pruning are kept in view. One of these is to encourage wood growth in the proper directions; another is to lessen the amount of bearing wood in order to secure the finest fruit.

The most approved time is during the winter months, but the later ones are usually thought to be safer, because the cutting of the wood renders it more susceptible of injury from cold. Little fear, however, need be entertained under this head in the case of the apple and pear, if the wounds are properly covered with paint or varnish. A good composition for wounds made in pruning is gum shellac and alcohol, mixed so as to form the constituency of paint. This may be applied with a small brush. The most common blunder in pruning the apple orchard is in leaving long stubs instead of cutting the limbs off close to the trunk or main branches. Such wounds cannot heal, but soon rot into the heart of the tree and cause a hollow trunk. All wounds should be cut close and as smooth as possible, and, if painted as described, will soon heal over and leave the tree perfectly sound. A writer in the *Country Gentlemen*, recommends pruning in September, and says that he has given it a fair trial and is perfectly satisfied that this is the best month for the work. There is no doubt that it is safe to prune at any time after the fall of the leaves, but we should question the advisability of undertaking a general pruning so early as the month of September, neither would many of us find leisure for such work during that busy month. Some people prune quite late in the spring, but this is most unwise, for the sap is not in a condition to heal the wounds before the middle of June.

The pruning of trees and plants is done in England much more systematically than with us, the object there being well understood to be the shaping of the trees, and, still more particularly, the improvement of the size of the fruit, this last object being attained by allowing only the best and most vigorous fruit spurs to remain. The time has come when we in Ontario also must learn the lesson that there is no profit in growing scrubby fruit, and that our trees must not be allowed to exhaust themselves in maturing seed of so much worthless stuff. This waste of the fertility of the land is as great as when it is allowed to produce a crop of weeds. No doubt we might avoid this by careful thinning out of the young fruit while it is still small, say in the month of June. If we could spare the time to go over our trees carefully and remove all gnarly and scabby fruit at that season, both of pears and apples, the result would be most satisfactory; but this is usually neglected, because work in Ontario presses fruit growers so much harder than it does in the cooler climate of England. The result, same however, may be attained by careful pruning, making it a point to thin out all poor and weak growing fruit spurs.

Grape pruning is also done during this month in many parts of Ontario. The methods of pruning are almost as numerous as are the vineyards themselves, but some growers appear to be neglecting it almost altogether, a course which results in the production of a great deal of inferior fruit. A great point in the pruning of the grape is to reduce the amount of fruit-bearing wood, in order that fine bunches may be secured, and this is usually accomplished by leaving fruit spurs of new wood having two or three buds each. Some say that thirty or forty buds are enough for each vine, but, in common practice, there is usually at least double this number, and in thus reducing the number of fruit buds lies a point of great economic importance.

The various methods are planned more with an eye for beauty and to suit style of trellis employed. The system which presents the best appearance to the eye is the "Renewal," which has often been described in this journal, and which may be again explained at any time if asked for by any of our readers.

The principles above explained, apply with equal force to the pruning of small fruits. In all our plantations too many canes are left to grow, and most of these have much slender wood growth, near the tips of which the buds are weakly and will produce a poor quality of fruit. All weak canes should be removed and the weakly growth of the stronger ones should be cut off with the grape pruning shears.

The Tree Cricket is a very common enemy in the raspberry plantation, and we frequently receive inquiries from subscribers concerning it. Now is the best time to destroy it, by cutting off all affected portions and burning them, together with the eggs of this insect which they contain.

The gooseberry bush, if neglected, becomes a perfect mat of prickly canes, interfering both with the production of fruit, and also with the gathering of the same. These should be well thinned out, not shortened in as in the case of the

currant, which would only tend to increase the difficulty described. Some gardeners, however, spur in the side shoots near the extremity of the canes in order to increase the size of the fruit. In the experience of some gooseberry growers the mildew is much less troublesome where the bushes are well pruned. This is a very important consideration in the case of the finer varieties, as, for instance, the White Smith or Crown Bob.

The currant needs different treatment from the gooseberry, and, while the number of canes that are allowed to grow should not be too many the strongest of these need to be shortened in every spring one-third of the new growth. This causes development of a large number of side shoots which are the bearing wood for the coming season. The fact is that with the finer kinds of currants, as, for instance, the Cherry and the Fay's, there is little fear of over-production, but, being strong feeders, they usually will mature a large quantity of fine sized fruit. Commoner varieties of currants, however, are inclined to over-bear, and are scarcely worth growing for market purposes. Buyers now a days want large sized fruit, and will pay two or three cents more a quart for the varieties mentioned than for any others we know of.

GROWING PEARS.

THE fact that pear culture is no longer seriously hindered by blight makes a few hints timely as to method of planting and culture. I have for many years grown pears headed low toward the ground. To secure such, I have sometimes negotiated beforehand with nurserymen to prevent their being trimmed up in the nursery. I prefer them branched out at three feet from the soil. The reasons are obvious. (1) They come to bearing as soon as dwarfs, thus saving three to five years before getting a crop. (2) For picking there is great advantage. You can gather the fruit for several years with a step-ladder. (3) All fallen fruit lies comparatively uninjured. (4) In case of drought the limbs shade the soil and equalize temperature. It must be born in mind that more damage to fruit occurs from severe changes of temperature than from extreme cold. (5) You are able to trim the trees as they should be without much trouble. Pear-trees should, for the first five or six years, be gone over twice a year. In midsummer cut out all superfluous shoots and suckers, and in November, head back the new growth one-third.

I also have for many years grown pear-trees as Dr. Meehan first suggested, "in grass." By that is not meant that the trees stand in sod, but that instead of being cultivated with the plow they be cultivated with the fork. Let the trees be well mulched with coarse manure or ashes of anthracite coal mixed with wood ashes. Turn this over and cleanse it of weeds once a year and thoroughly aerate it. It should be renewed once in two years. The principle is to keep the feet warm while the head is kept cool. The circle forked over should be

larger in diameter each year until it is eight or ten feet across. I use weeds for mulch if other material is scarce. Sawdust is good, especially after being run through the stable for bedding.

No manure whatever should be used in planting a pear-tree, but a top dressing of coarse manure is often needed. Some varieties require more food than others. The Seckel is a good eater and digests well. The Anjou is another. But the rule is, not to force or stimulate a pear-tree or a cherry-tree. But no fruit suffers worse from neglect. Choked by sod the pear fails to bear any fruit of marketable value.

The pear-tree is hardier than the apple and more easily grown. Its culture is never overdone. We could find market for a hundred times the present amount grown—only we must plant with regard to seasonableness. There is a pear glut, some years, during September. Pears that keep long, like the Anjou, Louise, Bosc and Clairgeau, are marketable from November 1st until New Year's, and always find ready sale. All in all our grandest market as well as table pear is Anjou. It is an ideal fruit. I pick it in early October and have it till Christmas. Another pear that I like well is Gray Doyenne.

Clinton, N. Y.

E. P. POWELL, in *Garden and Forest*.

THE APPLE CURCULIO.



IN these days of close competition, when so many of us are entering upon the cultivation of fruits for market, only those who succeed in producing the very finest article will attain any real success in the work. One of the most important points in their cultivation is the production of clean and perfectly shaped samples. Last year, where the fruit was not treated with arsenites, fully one-third of the Bartlett pears in the Niagara district were stung by the Apple curculio, and a very large number of apples were affected in the same way. As a result of this injury a hard knot is formed in the fruit around the part affected, which very much disfigures it. At A. in Fig. 15 the reader will see a specimen of a deformed apple, such as is only too familiar to fruit growers who have to cull out such a large quantity as second class, just on this account.

The Apple curculio resemble the species infesting the plum, but it is a little smaller, being only about a quarter of an inch in length, inclusive of its proboscis. It is further distinguished from the plum curculio by four conspicuous bright red humps on the posterior part of its wing covers. Its name is *Anthonomus quadrigibbus*, the latter term having reference to these humps.

Formerly bred only in wild crabs and haws, it has of late become very

troublesome to our cultivated varieties of the apples and pears, doing its evil work during the months of July and August. The larva grows to about one-half of an inch in length, remains in the fruit until it is transformed, and then it escapes a perfect insect.



FIG. 15— APPLE AFFECTED BY CURCULIO.

work. I at once plucked the apple but found no puncture in the skin, only a minute brown speck. The beetle had plugged the little opening with what appeared to be a bit of pomace, probably excrement. With a sharp knife a section was made through this egg-chamber, which I have endeavored to represent natural size, as above (b) with the egg at the bottom. Although it is almost impossible to distinguish newly stung fruit from external appearances, it becomes very easy after a few days when the infested apples become gnarly and ill-shapen as above (a)."

Picking off and destroying the infested fruit is entirely impracticable in a large orchard, and it would be foolish to advise the orchardist to go to work jarring his apple and pear trees in order to catch and destroy apple and plum curculios; so that really our only hope for the extinction of this insect lies in the successful application of Paris green in the same way as for the codling moth; and having ourselves, on several occasions, applied it with success, it will require a good many failures to destroy our confidence in, at least, the partial effectiveness of this remedy.

APPLE ORCHARDS IN NOVA SCOTIA.—We are in receipt of the Provincial Crop Report of Nova Scotia, dated December, 1890. From this it appears that the production of apples for the market is chiefly carried on in the so-called apple belt, between the north and south mountains, running through a portion of Annapolis and King Co's. The crop during the last season is below the average, amounting to about 73 per cent. of a full crop. Of varieties, the Ben Davis takes the lead for productiveness, having averaged 91 per cent; the Rhode Island Greening, and Blenheim Pippin come next with 86 per cent., and next in descending order, are the Golden Russet, Cranberry Pippin, Baldwin, Northern Spy and King.

This differs from our experience in Ontario, where the Northern Spy has been the most productive variety during the season of 1890.

Prof. Gillette, of the Ohio Experiment Station, has been making some observations which are worthy of being quoted here. He says:

"On June 13 last, I saw a female perform the entire operation of egg-laying, as follows; First, a cavity was eaten in the apple (b), taking thirty minutes. The beetle then turned about and applied the tip of her abdomen to the small opening into the egg-cavity. In about five minutes she walked away without turning about to inspect her

❖ New or Little Known Fruits. ❖

THE JONATHAN APPLE.

THOMAS MEEHAN, well known authority on horticultural matters, writes of this apple in the *Country Gentleman*:

I recently heard a prominent Pennsylvania orchardist say that if he were limited to one variety of apple, he did not know but that kind would be the Jonathan. The strangest commentary on this opinion is, that this apple has not even a solitary star to its credit for Pennsylvania in the catalogue of the American Pomo-

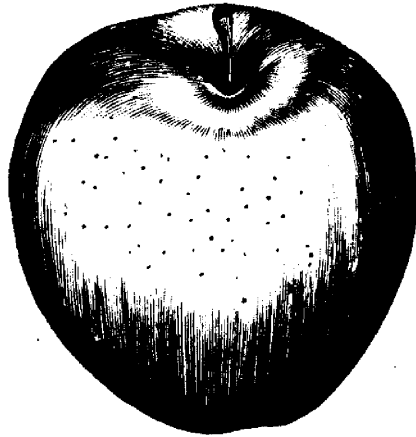


FIG. 16—THE JONATHAN.

logical Society, though it is starred in a very large number of others, and in very many States double-starred, which indicates a high degree of popularity. It may be doubted whether many orchardists would place this on the unique plane my friend above cited would do; yet it undoubtedly combines in one variety a greater number of good qualities than many others.

It is in nice condition in November, and this does not soon disappear; it is just as good when the bluebirds and robins arrive in the Spring. It is not a large apple to be sure, but then it is not a small one, and the enormous quantity it yields makes up for a want of great size. Then it bears fairly well every year, which many of the monsters rarely do. Then, again, you can rarely catch it in a diseased or hide-bound condition. It seems to do as well in sand as in clay, in limestone, sandstone or in any other stone, and the rot troubleth it not. How few are so happy and contented!

In most cases we are told if we could be perfect in apple-growing we should go to our neighbor, learn by his experience what to plant, and be governed accordingly. In this way progress has a poor chance. At any rate, here is one that is safe to plant, though there may be no neighbor to consult within a hundred miles of us.

I have just been reading over a list of about a thousand kinds of Russian apples, which it is proposed to place on trial in our country. All right. But among the couple of thousand we already have, let us not lose sight of well-known kinds that have been tried in the balance and found not wanting.

✧ The Garden and Lawn. ✧

CLETHRA ALNIFOLIA.



PERHAPS no amateur in Ontario has experimented more faithfully in the line of flowering shrubs for the lawn than Mr. James Goldie, of Guelph; and he remarked to us the other day that his great discouragement with many of the more rare and beautiful ones was their tenderness. To our friends, therefore, who have no time to spend in experiment with shrubs of doubtful hardiness, we recommend with confidence the *Clethra Alnifolia*, as one that combines beauty and hardiness in a remarkable degree, and which is not yet as widely known as its merits deserve.

This shrub, though a native of swampy places to the south of us, has been proved to be adapted to almost any variety of soil. Mr. Meehan says he saw on one occasion a magnificent specimen, eight feet high and twelve feet wide, growing on a comparatively dry lawn, a finer and more vigorous specimen than he had ever seen in the swamps.

As may be seen in our illustration, it flowers in beautiful spikes of snow white blossoms, which measure from three to six inches in length. These are not only gratifying on account of their beauty, but also by reason of their delicious fragrance, which scents the air for some distance around. Another great merit which this flowering shrub has, is its period of blooming, for its flowers appear very early in the autumn, and continue almost until winter, a time of the year when there is very little other bloom.

Of late, this shrub has been much sought for among bee-keepers as a honey plant. It is very valuable for this use, because of its season of blooming, and because the honey made from it is almost white and very fine flavored. It also gives an abundant yield of honey.

Favorable notice is given this plant in our exchanges. The *Garden* says: "This is evidently a most delightful shrub to plant in broad masses by shaded woodland walks, or upon the margins of streams. It has this special merit, that it blooms at a season when flowering subjects are scarce, even in the best arranged shrubberies."

TRANSPLANTING TREES—"Take up enough earth with the roots to hold the tree erect when set on the surface of the ground." Observe—this rule complies with the requisites usually quoted at length. The sun's rays cannot reach the roots nor the air touch them; the moisture does not leave them for a moment; the soil is already prepared and remains fitted on them.—*Country Gentleman*



FIG. 17—CLETHRA ALNIFOLIA.

THE SCARLET OAK.

QUERCUS COCCINEA.

THE brilliant autumnal color assumed by the large leaves of this handsome American Oak renders it a tree of particular value for ornamental planting, and a general favourite with cultivators of hardy trees and shrubs. Planted here and there amongst Birches, Horse Chesnuts, and Aspens, whose foliage usually dies off of a deep golden hue, the Scarlet Oak has a most distinct appearance, the large regularly loped leaves, which remind one much of those of some of the rarer Maples, dyed in crimson, being so distinct from everything else around.

For planting here and there around the margins of hardwood plantations, particularly such as skirt roads and drives, and from which it may be seen, few trees, in my opinion, equal the Scarlet Oak, for whether during spring or autumn it is at all times beautiful, the bronzy-red of the young shoots and deep scarlet of the fading leaves being very conspicuous. Just now in many of the woods at Holwood, the Scarlet Oak looks beautiful almost beyond description, for the fully developed leaves are, both in shape and tint, larger and brighter than I can remember to have seen them either in Scotland or Wales.

Few persons are aware, or have noted how beautiful are the young shoots of the Scarlet Oak ; indeed, at that period of growth, when they assume a peculiar bronzy-red, they are quite as worthy of praise and notice as when steeped in their autumn hues. Second growths of this Oak are also rendered very conspicuous by the rich deep shades of red and bronze for which they are so remarkable. But not only for the richness of its foliage is the Scarlet Oak of value to us, for the whole contour of the tree is pleasing in the extreme, it being neat yet destitute of stiffness or formality, and therefore of especial use in ornamental planting.

A well-grown and well-placed specimen of this Oak is, indeed a desirable object at any time, and to be seen to advantage it should be planted clear of other trees, and all the better if backed up by a Pine wood or clumps of Yew and Holly. The contrast afforded either in spring or autumn by the scarlet of this Oak and blue and green of the Firs or Holly is peculiarly pleasing and far from common in our woods and grounds.

Some of the largest Scarlet Oaks I have seen are growing in gravelly loam and in almost pure gravel, and from my own observations of a number of trees, I think that this is the soil best suited for their perfect growth and development. A few days ago I was shown several young trees of the Scarlet Oak that some five or six years since were planted for purely ornamental purposes in a low-lying and damp meadow, but the experiment has turned out far from successful, the majority of the trees looking anything but healthy. Fine, strong, and well-grown

plants they were when planted, but gradually a change has come about, and these promising trees are now but lank poles with only a few branches, and tufts of foliage atop.

It is rather unfortunate that, as in the case of the purple-leaved Beech, there are several forms of the Scarlet Oak in cultivation, these differing greatly in the intensity of autumn leaf-coloring. Some of these that I have seen turn of a reddish brown before falling off, and at no time exhibit that wealth of scarlet for which the typical tree is so remarkable, and for which it is solely cultivated in this country.

Generally speaking, the Scarlet Oak requires but little attention in the way of pruning, for it is of gainly shape with a conical head of twiggy branches, and not at all inclined to ramify or expend its strength in the formation of clumsy side branches.

THE CHINESE SACRED LILY.

SIR,—Would you please tell me the proper treatment for the "Chinese Narcissus, or Sacred Lily." After it has flowered can it be kept for another year and how?
Yours, etc.

A. R.

Reply by Anton Simmers, Toronto.

The bulbs of the Chinese Sacred Lily after blooming, should be allowed to continue growing as much as they will, and, when apparently quite completed, (which will be noticed by the foliage beginning to become slightly withered at the tips of the long leaves), the bulbs should be taken out of the water in which they have bloomed, and placed in a moderately warm room until the foliage has dried off, then place the bulbs in a pot of earth to remain there till the weather is quite mild, say in the month of May, when they should be planted in the open ground to "rest," as we term it. In the early fall the bulbs must be taken up and those which are sound and appear healthy, by planting indoors as usual, will in most cases give a nice display of bloom.

We have lost quite a number of our bulbs by leaving them too long in the open ground in the fall, which should be observed by others. They should be brought in as soon as weather is approaching the frosty night season."

PLANTING HOME GROUNDS.

MANY grounds are spoiled by the manner in which roads and walks are laid out, the kinds of trees and shrubs that are planted and the grading and surroundings of the house. The house should be built to correspond with the lay of the land and the surroundings. Thus a plain house with no gables, piazzas or ornamental work on it would be out of harmony with a rough, rocky site, and a house all cut up with peaks, gables, fancy siding and unique windows and ornaments would be out of place on a level plain. If the land is level and

plain, build the house to correspond, and if the site is rough, hilly or rocky, give the house an outward appearance in harmony with it. Do not lay out a straight walk or drive right up to the door, but bring in a few gentle curves, and hide the bare gravel by some shrubs along the borders. Neither is it in good taste to make the grounds a museum for all bright-colored, curious-shaped and unnatural-formed trees and shrubs which are called "ornamental."

If the grounds are small the trees and shrubs should be likewise, but if they are large and roomy there is a chance to put in some big trees. All objectionable places should be hidden by massive planting of close-growing shrubs, and borders may be planted in the same way. At the same time these will serve to beautify the grounds. If the grounds are small they may be made to look more extensive by judicious planting. Put the larger trees in the rear, and in front of them, and along the borders plant smaller ones. The line between the sod and the house walls should be broken by setting out some low bushes or vines over a low balcony. Some evergreens should be put out so as to have a winter as well as a summer effect. The best trees and shrubs can be found in the neighboring woods and may be easily transplanted, and then half a dozen bright colored and flowering ones may be bought at the nursery to add variety.—*Farm and Home.*

A MODEL FRUIT GROWERS' UNION.—The Hammonton, N. J., Fruit Growers' Union, handles, in favorable seasons, something like 2,000,000 quarts of blackberries, strawberries, raspberries and huckleberries, 70,000 pounds of grapes, and 4,000 or 5,000 bushels of pears. It does not auction off the fruits of its members, but acts as the agent of the wholesalers or city commission houses. On the one hand, the wholesalers are saved the expense of buyers, and on the other the growers get the highest prices possible for their fruits.

As the growers will deal only through the Union, they hold the key to the situation. The Union collects all the money due to the growers, traces up lost fruit and lost crates, and puts the legal screw on when a commission house refuses to pay up promptly. The Union is also a coöperative society. It does a store business of \$80,000 or \$90,000 a year, dealing only in fertilizers, coal and other bulky articles needed by growers. Shareholders in the concern get 6 per cent. interest, and all profits are divided among the purchasers of supplies as well as members.



* The Kitchen Garden. *

THE NEW ONION CULTURE.



THIS is the title of the new book just published by Mr. T. Greiner, of LaSalle, N. Y., in which he attempts to show how it is possible to raise 2000 bushels of onions off one acre of ground!

An early start is the first point of importance which he lays down, and for this the seeds need to be sown, for the latitude of southern Ontario, from the 1st to the 15th of March, in a cold frame, or, if preferred, with a gentle heat. The accompanying illustration, Fig. 18, shows a small cold frame with a single sash, 3 x 6 ft., and being one foot high at the rear and about eight inches at the front. Five thousand plants may be expected from one ounce of seed, and, since about 130,000 plants are needed for an acre, it is evident that about one and one-half or two pounds of seed would suffice for this extent of ground. This is no small saving of expense by itself, for in sowing onions in the open ground in the old way, from six to eight pounds of seed would be required. It is easy to calculate the amount of glass that would be required when it is explained that each such bed is capable of growing about 9,000 plants.

The variety recommended by Mr. Greiner, as the best for this new mode of culture is the Prize-taker, which much resembles the large imported Spanish onion of our groceries, both in appearance and flavor; and, when well grown, will easily average a pound each. It is much preferred by the grocers to the ordinary variety, bringing in the Buffalo market \$1.00 per bushel, when the other varieties are only worth 80 cents. There are some other kinds which might answer for this method, as for instance, the Spanish King, the White Victoria, and possibly, also the White Globe.

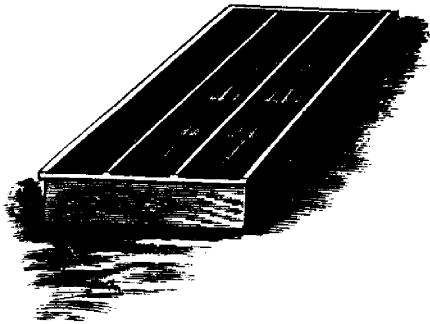


FIG. 18—COLD FRAME.

Over-watering the seed bed in a cold frame must be avoided, and as the season advances the sash may be removed entirely. In about six weeks from the time of sowing the seed, the plants will be quite large enough for transplanting into the open ground, and will appear as shown in Fig. 19. In this

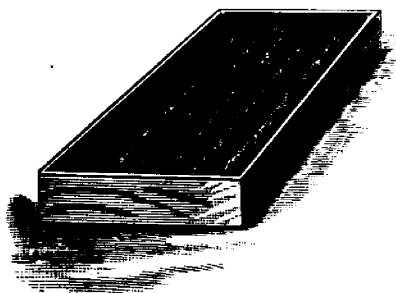


FIG. 19—PLANTS AT SIX WEEKS.

consists a large part of the work, and the expense of transplanting will not be less than \$50 per acre; but Mr. Greiner claims that this is fully made up in the saving of hand weeding and thinning out, which results from this mode of treatment. The plants are set out four inches apart in the rows, and twelve inches between the rows, the ground to be first marked out in two ways and the plants set out with a dibble.

This book of Mr. Greiner's is very cheap, and like his "How to make the Garden pay," must prove of great value to market gardeners.

HOME-MADE, BUT THE THING.

I HAVE had experience with several kinds of artificially heated hot-beds. But this cut illustrates the best thing I have tried. Besides being cheaply built it seldom gets out of order. My bed has a brick fire-box, with drain tile for flues. I located it on a strip of ground sloping to the south-west, with a fall of nearly one foot to the rod. Here I staked out the bed five feet wide and of the desired length. To lay the flues the earth was dug out two feet deep at the lower end and graded up to eight or ten inches deep at the upper. This made the heat at the surface of the bed about even, as the flues would naturally give out more heat nearer to the furnace. The tiles were then laid for the flues about a foot from the sides, and the earth filled back again with rich loam, the same as for any bed. The furnace I made two feet wide, and twenty inches high to the top of the arch, while the fire-box was nearly five feet long, so as to admit cord-wood without cutting. Instead of using mortar with the brick, clear clay was used, as this becomes brick when burned. An opening was left about one foot square at the rear of the furnace to admit the flues side by side, which was then made tight. The bottom of the fire-box is four or five inches lower than the flues, so that the ends of the flues will not choke up with ashes. In laying the tile cover the joints with sods to prevent the earth from sifting in. In building another I would advise using fire-brick clay tile, as I have found that the heat sometimes makes the drain tile crumble. Any kind of a covering can be made for such a bed. My plan is to set posts in the ground, to which boards eighteen inches wide are nailed on the north side and six inches on the south. If this frame is covered with muslin it will answer every purpose. I hardly think two flues of this kind would heat a bed six feet wide, though they do nicely in one of five feet. Three flues are hard to control because one is likely to get more than its share of heat. Five-foot beds can be covered with

two widths of domestic muslin. Provision should be made to keep water away from the furnace. If the ground isn't steep enough a ditch should be dug to drain the water off. An old stove-casting or piece of sheet-iron will make a door to the furnace. It must be carefully guarded when not in use or vermin will burrow in the flues. When the bed is wanted it will be necessary to start the fire several days in advance, but when the ground is thoroughly heated, comparatively little fire is required. To learn the temperature of the earth, I make

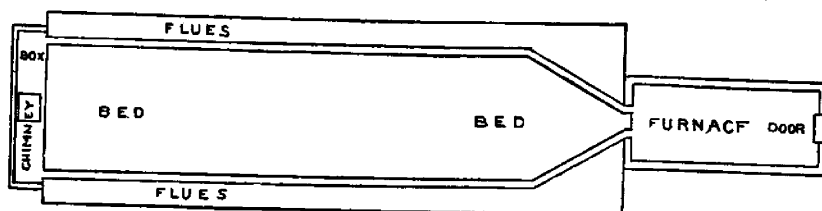


FIG. 20—FIRE HOT BED.

stations for testing it by plunging into their brims old fruit cans. By dropping the thermometer into these cans, I can learn the temperature at once. The top of the furnace can be used to good advantage by covering it with earth for raising plants or for heating a tank full of water, which is always useful about the garden. Be sure not to get the bed too hot.

St. Clair County, Ill.

J. B. MATHEWS, in Farm and Home.

ASPARAGUS.—II.

THE PLANTATION FOR HOME USE.—*Continued.*

SHOULD have said, earlier, that in our climate the best time for planting is in spring when the garden is made.

A knife should never be employed in gathering the product. The stems should be broken off as far beneath the ground as they will snap readily. Then no injury will be done to other buds, and the whole stem may be used for cooking. The consumer who purchases asparagus at the stores, of which one half the stalk is white and woody, will appreciate the advice to use no knife in gathering the stems.

If the soil above the crowns is kept loose and friable, the shoots will be straight and tender.

In our climate, where we are likely to have sharp frosts during the asparagus season, the precautionary measure of having a little coarse litter along the row of asparagus, to be hastily drawn over the tender shoots when the temperature drops, is a wise one. Often a picking that would otherwise be entirely destroyed may be saved by this thoughtfulness.

The gathering of the product, after the bed is in full bearing, should be

complete. Do not allow the spindling, thready shoots to grow, but keep the plantation clean of sprouts until the season shall be over. The period of gathering depends entirely upon the character of the season. A safe rule to follow is to close the asparagus season with the advent of early peas from your own garden.

It is not uncommon with me to have shoots, under ordinary field culture, over an inch in diameter, and by special attention this may be increased by one half. Mr. Burr, in his "Garden Vegetables," records the largest product in Britain, from one plant, to have been grown by a Mr. Grayson, aggregating one hundred stalks with a weight of 42 pounds.

Dr. Kennicott writes of a bed planted twenty-four years, with the plants four feet apart, cultivated with a horse and receiving annual dressings of manure, which furnished a family of twenty for two months in each year, at a less aggregate expense than that required to produce a dozen messes of green peas for the same table. He says that any ground which will grow a premium crop of corn will grow prize-taking asparagus.

In arranging for a long season of asparagus, amateurs have taken advantage of the fact that every inch of earth above the crown of the plants defers the date of picking two days. By having a few plants with crowns near the surface the season may be advanced somewhat, and the picking from these plants should be discontinued correspondingly early.

THE MARKET PLANTATION.

It is best to grow one's own plants if practicable. If not, the best yearling plants should be secured, at a cost not exceeding \$3 per thousand in quantity.

With a supply of fine yearling plants on hand, and a piece of ground fitted to grow seventy-five bushels of shelled corn per acre—land, if possible, of the character I described for the seed bed—it is not a very serious job to put down an acre of asparagus.

The record here given is a leaf from my own experience. My acre of ground was a deep, sandy loam, upon which a heavy dressing of manure had been placed the previous year and a crop of potatoes taken from it. The land was turned two furrows deep and thoroughly cultivated, harrowed and smoothed with a planer. Rows were marked out four feet apart, and with a plow trenchers opened to a depth of nine inches. The ground once in shape for planting, if a "drizzly" day happens along just right, one has the ideal conditions for putting in the plants. One man distributes the plants three feet apart in the row and a second man puts them in place, packing enough dirt firmly about the roots to cover them well. It requires 3,630 plants for the acre, and the two men will, if active, put them in place in half a day. The smoothing harrow drawn lengthwise of the plantation completes the job, by rattling a little loose earth into the furrows. In a few days the harrowing process can again be repeated, destroying the small weeds, and I even followed a third time before the plants were high enough to be injured.

Upon ground that is heavily manured with stable manure, weeds grow without provocation, and constant cultivation is required to ensure the continuous growth of the planted crop ; but the careful culture required to keep the weeds in abeyance is the ideal future of the crop.

At the end of the season the crowns of the asparagus plants are covered to a depth of six inches. The ground can be given thorough culture to a depth of three or four inches across the field, without injury to the plants.

My first acre was planted six years ago and has been plowed over each year just after burning off the tops in the autumn, and before the freezing of the ground. I give it a biennial dressing of stable manure, alternating with dressings of refuse salt from a hide packing establishment. The dressing of manure is at the rate of thirty-two tons per acre and the dressing of the salt product about eight tons per acre. The latter dressing is filled with animal products.

In the spring of each year the ground is thoroughly cultivated, harrowed, and finished with a planer, so that when we open the season of picking, the surface is as smooth as a floor.

My picking season usually lasts about six weeks and the average product is something over 400 dozen bunches. If I can have a trusty hand to do the gathering, I do not allow a knife to be taken into the field. The gatherer takes two rows at a time, breaking off the shoots just beneath the ground, at the lowest point where they will snap squarely off. In the growing season the field is gone over every day. Asparagus should be sold by weight, like lettuce and pieplant ; but, unfortunately, our retailers have not as yet taken this progressive step, and we have asparagus, not only of all grades of quality, in the market, but bunches of all lengths and sizes.

Since I have used rubber elastics instead of string or bark for tying, the process of bunching has been greatly abridged. Five dozen bunches can be put together in an hour by an expert hand and neatly squared at the ends.

Because the finest French asparagus goes into market blanched, with only the tips having any color, many people have absorbed the idea that our own product, if found on the market with half the length of the stems white, is the better for it. The truth is, the delicate product of the Paris market has been carefully blanched after an approved method, is crisp and tender its full length ; while a similar-looking product on our own market, grown in our ordinary field culture, is more than half waste because of the threads of woody fibre extending through the white part of the stems.

It is a custom among many of our gardeners, by the use of the knife to give their bunches the required length by cutting far beneath the surface, lowering the quality of their product and demoralizing the market. By following my method of breaking the stems there is no waste, and the quality of the lower part of the stems is as excellent as any part of them.

The doing away with the necessity of careful rules for cutting asparagus, and the forms of implements best fitted for the purpose ; the simplifying of the tying process, and the elimination of a large proportion of the expenses in preparing the field, are decidedly important steps in progressive asparagus culture. —C. W. GARFIELD, before *Michigan State Hort. Soc.*



SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

A GREAT CHERRY TREE.—The largest and most valuable cherry tree in the world is reported from California. Mr. R. Hector, of Placer County, is the owner, and he reports having received a gross return during the past five years of \$1,800! The tree is now thirty-five years old and sixty feet high, and last year yielded 300 ten pound boxes, valued at \$1.50 each!

TRANSPLANTING EVERGREENS.

WE very frequently hear the question, "What is the best time for transplanting evergreens?" And the most common reply is, the month of June. The reason why May or June is a very favourable time for this work, is because the foliage of the trees, not being deciduous, is continually losing moisture by evaporation, and, therefore, to remove them at a time when the roots are dormant, will cause a great loss of moisture to the tree. For this reason, it is evidently unwise to remove evergreens in the fall or too early in the spring. Mr. W. C. Strong, in a paper read before the Massachusetts Horticultural Society on this subject, says that he has had wonderful success in removing evergreens in the month of August, the heat of summer then being over, and the growth of the tree having not yet ceased. He says that in 1871 he removed 40,000 Spruce, Arbor Vitæ, and pine trees, averaging from two to six feet in height, and placed them on a site about one half a mile distant, and, although the month of August of the subsequent fall was hot and dry, so that some wise-acres predicted total failure, the success was complete, there not being a loss of 5 per cent. He also stated that he had planted in the same month, some 6000 wild seedling pears from the Rocky mountains with a loss of only one-fifth.

Have any readers had any experience in transplanting evergreens in the month of August?

❖ Question Drawer. ❖

KEEPING TALLY WITH BERRY PICKERS.

SIR,—Could you give me any information about a new system of keeping tally with strawberry pickers of which a note appeared somewhere in the CANADIAN HORTICULTURIST, and I have looked a good deal and cannot find anything about it. Some man in the States was the inventor. I think the thing was something of the nature of a conductor's punch. If you could write the address on a postal card or give me any information so that I could get it, I would be very much obliged.

O. F. BURCHARD, *Kingscourt, Ont.*

Reply from essay by J. H. Hale, South Glastonbury, Conn.

In gathering and marketing the crop there should be one picker for each thirty or forty quarts of the daily product, and a superintendent to every fifteen or twenty pickers to assign them their rows and inspect their work from time to time to see that they keep to their rows and do not trample on the vines, pick the fruit clean and grade it according to the demands of the market to be supplied. Upon the thoroughness of this superintendent's work will depend a large measure of the success of the business. For keeping tally with the pickers, the best plan I know of is to give each a picking stand or rack of a size suitable to hold four, six, or eight quart baskets. This should be plainly stenciled with the number of the picker, all of whom should be numbered. On commencement of each day's work the picker is given this rack with its full quota of baskets, no more or less, and is required to return them, either full or empty, to the picking shed, when a daily account ticket is given. This ticket is of tough check paper, $3\frac{1}{2} \times 1\frac{1}{2}$ inches; across the top is space for name and number of picker, day and date of the week; then five upright columns of eight figures, representing 1, 2, 3, 4, and 8 quarts, or 144 quarts in all—as much as even good pickers are likely to pick in one day. From this is punched, with a conductor's punch, number representing quarts of berries brought in, and given to the picker, who is then given a fresh lot of baskets, and returns to work and continues in this way till the day's work is done. Then the daily ticket is taken up and the number of quarts it represents as having been picked is then punched out of the weekly ticket, which is of the same tough check paper, size $5\frac{1}{2} \times 2\frac{1}{2}$ inches. This ticket has space for name and number of picker, amount paid per quart, and date of the week on which it ends, and six columns of figures for a record of the berries picked each working day in the week, column for sum, total and cash paid on Saturday—date of ending. These tickets are carried by the pickers through the week, a new daily ticket given each morning and taken up at night; then on Saturday when we pay off, we take up the weekly tickets and file them away, and thus in a simple form have a complete record of all berries picked, and in case of loss of a weekly ticket by a picker before the end of the

week, we have the daily ones on hand from which to make a new one without loss to any one, thus there is no chance for a picker to lose pay, or for us to pay only just what is due.

Picking, except for local markets, should not begin till the dew is off in the morning, and not continue through the heat of the day, if pickers enough can be had to gather the crop without it—from four o'clock until dark is much the best time. The packing shed should be a cool airy place, convenient to the field, and here all the fruit should be taken as fast as gathered. A general inspection of the fruit should be given by the person in charge, and packed according to its grade, each variety by itself.

RASPBERRY SAW-FLY.

SIR,—My red raspberry bushes have suffered during the last two years from a sluggish green worm from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in length. Could you give me a remedy through the HORTICULTURIST?

C. CURTIS, *Leamington, Ont.*

We have had no personal experience with any such worms upon the raspberry bushes; our chief difficulty in growing raspberries arising from the rust and from the ravages of the tree cricket. We would infer from what our subscriber says of it, that the insect referred to is a raspberry saw-fly, the larva of which is shown in the accompanying illustration in its natural size, with some segments magnified to show the arrangements of the spines upon the back and side.

The perfect insect of this saw-fly is four-winged, and belongs to the order Hymenoptera. It appears in the latter part of May, just as the young leaves of the raspberry are coming out. The eggs, according to Mr. Saunders' "Insects injurious to fruits," are buried beneath the skin of the raspberry leaf near the ribs and veins, and are placed there by means of the saw-like apparatus with which the female is provided. When newly hatched, the larva is about $1\frac{1}{2}$ of an inch long. Its body is at first nearly white, but afterwards becomes green, indeed, very much the color of the leaf upon which it feeds; and on this account it would not be very easily discovered were it not that it riddles out the leaves, by eating all the softer tissue between the veins. When fully grown it measures $\frac{3}{4}$ of an inch in length. Towards the end of June, the larva leaves the bush and forms its cocoon beneath the surface of the soil, where its transformation is affected, and from which place of concealment it issues forth in the early spring to continue its depredations.

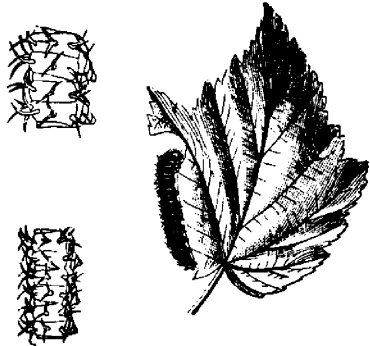


FIG. 21.—RASPBERRY SAW-FLY.

These insects may be easily destroyed by sprinkling the bushes with hellebore and water, in the proportion of an ounce of the powder to a pailful of water. A mixture of Paris green and water would also be equally, if not more, effective ; but we would hesitate to advise the use of so rank a poison so near fruiting season.

SWAMP MUCK AS A FERTILIZER.

SIR,—Is there any fertilizing qualities in swamp muck, as I have quite a large quantity on part of my farm ? Would it be of any use as a mulch for fruit trees ?

RICHARD SENIOR, *Pepabun, Ont.*

There is no doubt that swamp muck is a valuable fertilizer, used as a mulch in the orchard and fruit garden. In the township of Pelham some farmers reported at a meeting of their Institute, that they had experimented with swamp muck upon quite a large scale, and found it greatly beneficial. One person had applied it freely around garden raspberries ; another had applied it to orchard trees, and each reported good results ; but, on the other hand, one person who had applied a large quantity of it to a small piece of garden ground, found that it was an injury rather than a benefit.

The explanation of this difference of results is no doubt due to the fact that "raw muck" has an "acidity," which is caused by the presence of sulphate of iron or some other matter which is injurious to plant growth until it has been mellowed by exposure to the air. Upon wet soil muck is injurious also, because it tends to increase the bogginess of the place.

But, generally speaking, muck is beneficial, for it renders clay more mellow, sand more retentive of moisture, and, as a fertilizer, it has some value as a source of nitrogen, and as a reservoir of ammonia.

GROWING TOMATOES.

SIR,—What is the best way to raise tomatoes so as to have them early ?

ROBERT STEED, *Sarnia, Ont.*

To raise early tomatoes, it is necessary that the plant be started early in a hot-bed, not later than the month of March. They need to have plenty of air, and the sashes should be gradually removed to harden them off, in order that they may be stocky before transplanting into the open ground. Some market gardeners first transplant from the hot-bed into a cold frame, where they may be protected from frost when necessary, and then transplant into the open ground when all danger of frost is over. Mr. Hallock, of Long Island, says that he has had the best success in growing early tomatoes on light soil, with but little manure. Some advise training the plants to strong stakes about four feet high, and keeping the side shoots well pruned, allowing all the strength to pass into the fruit situated on the main upright.

Mr. J. M. Stahl recommends trellising tomato vines, as shown in the accompanying illustration which appeared in *Popular Gardening*. He believes the expense is paid in the increase of crops and improved quality of fruit. The trellis is made by a row of posts with wires eight feet apart. Some use pieces of six inch boards in place of posts, and the wires are stapled to the edge of these.

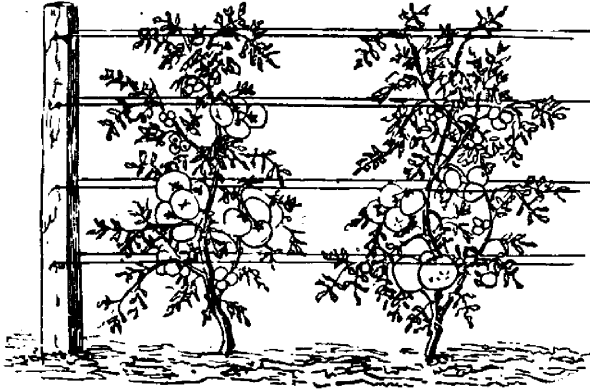


FIG. 22.—MR. STAHL'S PLAN OF TRELLISING TOMATOES.

SCRAPING APPLE TREES.

SIR,—Will you please inform me through the *HORTICULTURIST*, what is the proper time for scraping the bark off old apple trees?

JOHN A. SIDEX, *Norwich, Ont.*

It is customary in large orchards to do this work in the latter part of the winter or early spring with an old hoe, or any other convenient instrument, the object being to prepare an even surface for washing the tree with alkaline solutions, which are prescribed for the destruction of the bark lice, and also for giving the trunk a nice, clean, and healthy appearance.

SPREADING ASHES.

SIR,—When would be a suitable time for spreading ashes in the orchard, and do you think it would be injurious to spread ashes in the snow on strawberry plants?

J. A. S., *Norwich, Ont.*

Probably the best time for spreading unleached wood ashes on the apple orchard is in May or June, when the rains would carry down the potash to the growing rootlets, but we frequently apply them at other seasons of the year, as a matter of convenience. We would not advise our subscriber to spread ashes in the snow upon strawberry plants, for, if strong, they might possibly injure the crowns of the growing plants. It would be wiser to wait until spring and apply them between the rows, and not directly upon the plants themselves.

PLANTING GRAPE VINES.

SIR,—I am sorry to learn from your reply about grape cuttings from the Rhine, that there is so much duty. In planting the vines in our German style, I need to have over 2000 to the acre. Could you give me the names of any large grape growers from whom I might receive cuttings at pruning time? I have purchased some 400 four-year-old grape vines, and about the same number of berry plants, which I wish to transplant to my own land. When and how shall I do it?

JEAN GRUENBECK, *Cayuga*.

You might secure the grape wood for cuttings in quantity from any of our large grape growers at Winona or Grimsby.

It will be rather a difficult matter to succeed in transplanting four-year-old grape vines. Those of the age of one or two years are much more desirable, for vines of the age you mention will be much stunted in growth by their removal and may never fully recover, whereas, in moving vines of the age of one or two years, scarcely any of the roots are lost, and the vines will grow rapidly, soon surpassing the larger ones. The best time for planting is early spring, just as soon as the ground is in fit condition. The vines should be well cut back, and planted in large shallow holes, with the subsoil well pulverized. Fill in with fine earth, firming it well about the roots.

SUTTON BEAUTY vs. WAGENER.

SIR,—Which apple is better for the commercial orchard, Sutton Beauty or the Wagener? Are both early and abundant bearers, and firm enough to bear shipment to a distant market?

H. O. WELLBURN, *Duncan, B. C.*

The Wagener apple is an old and valuable variety, particularly for home use. Its excellent qualities make it very desirable as a dessert fruit. It certainly is early and a very abundant bearer; indeed, it is productive to a fault, but, in our experience, it is rather too soft for distant shipment, and very much subject to the sting of the apple curculio, which often renders it ill shaped and consequently second rate. In some localities, however, it is held in very high repute.

The Sutton Beauty we have not tested, but it is highly spoken of in Western New York as promising to be a very valuable market variety. Mr. O. B. Hadwen, of Massachusetts, in which State this apple originated, says of it; "It is proving a peer of the Hubbardston's Nonsuch, in some respects even better; has more character, flesh more tender and juicy, better color, and keeps well."

MOORE'S ARCTIC AND SAUNDERS' PLUMS.

SIR,—What are the merits and demerits of the Moore's Arctic and Saunders' plums?

J. McAINSH, *Belton, Ont.*

The Moore's Arctic is considered valuable in some sections for its productiveness and hardiness. Dr. Hoskins, of Vermont, reports it quite hardy with him, and his climate is very severe; but Mr. Willard, of Geneva, N. Y., says the foliage drops badly with him, and the fruit fails to mature. There is no doubt that a great deal too much has been said in praise of this variety. It is not much to boast of in quality, and the statements that it is knot-proof and curculio-proof, are wholly false. The fruit is dark blue in color, and is produced in great clusters.

The Saunders' plum is a variety of great promise, which was introduced before the Fruit Growers' Association at their meeting at Barrie in 1884, and was named after Mr. Saunders, who was then the president. The tree is very productive, the fruit of good size, the color, bright yellow, and the flavor is melting, sweet and good. We cannot say whether it will be able to resist the black-knot any better than other varieties, or not.

JOHNSTON'S SWEET RASPBERRY.

SIR,—Two years ago, I set out 50 plants of the Johnston's Sweet Black Cap, on a rich

clay loam. Will you kindly inform me through the HORTICULTURIST what you think of it. Is it hardy?

A. A. ROLPH,
Orono, Ont.



We have never tested the Johnston's Sweet raspberry ourselves, but several of our leading fruit growers have tested it and speak very highly of it, particularly as regards its suitability for evaporating purposes. In quality is particularly sweet and delicious. Its season is about the same as that of the Tyler, and it is a little behind the Gregg in size. You will be the best one to report to us concerning its hardiness.

FIG. 23—JOHNSTON'S SWEET RASPBERRY.

* Open Letters. *

NEW YORK STATE FRUIT GROWERS.

SIR,—The annual meeting of the Western New York Horticultural Society, held in Rochester, the 28th and 29th of June, was the most successful of any meeting ever held by them, in point of numbers and general interest. S. D. Willard, of Geneva, Vice-President, delivered the annual address, in which he paid a very feeling tribute to the memory of Patrick Barry, their late President, who died on the 23rd of June last. W. C. Barry, his son, was elected President, and Mr. Willard, Vice-President, for the ensuing year. Many interesting papers were read and discussed, among them one upon the fungi and disease which infect grapes, by David G. Fairchild, of the Agricultural Department at Washington, which was of particular interest. The paper was illustrated by diagrams, showing the methods of attack, and the effects of the different fungi upon the leaves and fruit. He stated that there were 50 species of fungi in the United States which annoy horticulturists. There were other papers of interest on plant diseases, bacteria, etc., some points of which we may refer to when we get them in their annual report. Prof. Saunders, of Ottawa, was present, and gave them an account of horticultural experiments and progress at the various Experimental Farms in the Dominion; and A. M. Smith, of St. Catharines, read a paper on the "Progress of Fruit Culture in Canada." There were also several other members of the Ontario Fruit Growers' Association present, all of whom received a cordial welcome. The question of "To Spray or not to Spray," was thoroughly discussed, and the general opinion seemed to be, that spraying with Paris Green, in moderate quantities, was the most effectual and best way of destroying insect pests, and that it would not materially affect the foliage or growth of the tree where judiciously applied. The Bordeaux mixture and the solution of ammonia and carbonate of copper were recommended for the various forms of mildew, or fungus, and rot. The first crop of the past year was reported almost a failure, with the exception of grapes, which had been an enormous crop. One county was reported which had produced 24,011 tons, averaging 2½ cents per lb., amounting to \$1,080,000. In advocating what to plant in the future, there was a variety of opinion, but the majority wisely advised a variety of fruits, or the not putting "all of your eggs in one basket."

A. M. SMITH, *St. Catharines, Ont.*

BURLINGTON FRUIT GROWERS.

SIR,—The annual meeting of the Burlington Horticultural Association was held at Reuten's Hotel, recently. The President, George E. Fisher, in the chair. There was a large attendance of members and a pleasant and profitable evening was spent. The chief features of the meeting were the annual address of the President, which was an able review of the field of Horticulture for 1890, and an instructive paper by Dr. Zimmerman on the cultivation of Black Currants, in which he advocated the Black Naples as the most profitable, and a light clay loam as being best adapted for their production.

The following officers were elected for the current year:—President, George E. Fisher; Vice-President, Smith Freeman; Secretary-Treasurer, Arthur W. Peart. Directors:—Department of Apples, Edwin Peart; Grapes, Dr. Zimmerman; Pears and Plums, Peter McCullough, Jr.; Small Fruits, Joseph Lindsay; Vegetables, J. W. Bridgeman; Shipping, William Hopkins and Harry Williams. Executive Committee:—D. Henderson, Dr. Husband and Alexander Riach. Entertainment Committee:—President, Vice-President and Secretary-Treasurer. Auditors:—Charles Dynes and George N. Peer.

A. W. PEART, *Burlington.*

BLACK ALDER FOR THE CURRANT WORM.

SIR,—A farmer in this vicinity, Mr. J. McKeely, was told to put twigs of the Black Alder about his currant bushes to keep off the worms. He tried it last summer with complete success, having fine berries without the trouble of applying hellebore or other poison. He could only account for it by the strong smell of the alder keeping the insects off.

W. H. WYLIE, *Carleton Place, Ont.*

FOR THE CANADIAN HORTICULTURIST.

SNOW



BEAUTIFUL, frolicsome, whimsical snow,
 I love you! but how can you bother me so;
 Covering my windows, blocking my doors
 And fain would you gambol all over my floors

In youth's merry days I hail'd you with glee,
 Now, I'm sorry to say, you're a terror to me,
 For when outward I go with muffler and staff
 You blind my old eyes, caper round me and laugh

Dress my head in white feathers unbecoming my age,
 When I shake them off, you fly round in a rage,
 Oh! hoary old Winter it pains me to see
 The longer I live you look colder on me.

I'll be safe from you Winter, when my soul goes to rest,
 You'll not reach me there in the Home of the Blest;
 I oft think of Hades and its prisoners below,
 Who'd give thrones, if they could, for a covering of snow.

I'm forgetting my purpose in braving your blast,
 For a look at my Maple, it may be my last,
 My sheltering tree in the loved quiet nook,
 Where God speaks to me in His Holy Book.

Ah, there stands my Maple in dazzling array,
 Like the Arabian Princess "Proud light of day,"
 I must come out to see her in the silver moon-light,
 For the shades of my flowers will waltz round her to-night.

"Narcissus," with "Dahlia," "Sweet Lady in White,"
 "Snow Cloud," "Lady Blanche," "Orient" and "Delight,"
 All robed in the purest of gossamer gauze,
 And those sombre old pines will murmur applause.

GRANDMA GOWAN

⇒ Our Markets. ⇐

MONTREAL.

Apples are in very scant supply, and little business is doing. No. 1 stock is worth \$4.00 to \$5.00, No. 2 is worth \$2.00 to \$3.50, while fancy stock brings fancy prices. *Dried apples* are worth 8c. to 8½c. per lb., and *evaporated apples* are firm at 12½c. to 13½c. per lb.

This has been a good year for speculators, and some buyers have made handsome profits out of apples. Some Montreal apple merchants have cleared sums on the season's business ranging all the way from \$5,000 to \$25,000, according to the Trade Bulletin; and have invested in fine residences in fine quarters. The average profits made seems to have been upwards of \$1.00 per bbl. net.

LIVERPOOL.

Reports show a decrease in receipts, and still higher prices. Baldwins, Greenings and Spys run from \$7.00 to \$8.00 per barrel; while Kings and Russets reach \$9.00.

⇒ Our Book Table. ⇐

CATALOGUES.

NURSERY STOCK AND SPRAYING PUMPS. Mr. Wm. Stahl, grower of high grade fruit trees, plants and vines, and manufacturer of the Excelsior Spraying Pumps, Quincy, Ill. A catalogue of considerable interest, owing to the information given in it in regard to spraying for fungus diseases and insects. Free on application.

SEEDS. D. M. Ferry & Co., Windsor, Ont., Seed Annual, 1891, 92 pages, well illustrated.

TREES, VINES AND PLANTS. A. G. Hull, Central Nursery, St. Catharines, 32 pages. J. H. Wismer, Northern grown trees, Port Elgin, Ont. E. D. Smith, Helderleigh Farms Nursery, Winona, Ont.

ROSES. Ellwanger & Barry, Rochester, N. Y.

BOOKS.

OHIO STATE HORTICULTURAL SOCIETY; Transactions for 1890. 24th Annual Session held at Des Moines, Iowa, January 21st, 22nd and 23rd, 1890, Geo. Van Houten, Lenox, Iowa, Secretary.

RABY Castle Currants, Grape Vines, Norway Spruce, Scotch Pine, Hardy Catelpa and Nursery Stock generally.

E. MORDEN,

Mch. 31. Niagara Falls South, Ont.

Plants of Large Strawberries. Best of New, best of Old.

Gt. Pacific, Edgar Queen, Lady Rusk, Shaw, Louise, Miami, Pearl, Parker Earle, Hatfield, Hinton, Beder Wood, Enhance. I would like all my customers to try the Enhance, and Michels Early.

Price list free, send for it. Address

Mch. 21.

JOHN LITTLE, Granton.

GIVEN AWAY TO EVERY Farmer and Flower Friend

who sends in his full address, more pkts., fine new beautiful Flowers or Vegetable Seeds and Catalogue free. Send 2 cents for Postage. 10 pkts. pure reliable early Vegetable Seeds, 20 cents; 10 pkts. High-grade Flower Seeds, 10 cents; 10 rare Flower Bulbs, 20 cents; 10 Blackberry Plants best kinds, 60 cents; Strawberries, Parker Earle new, (See November number CANADIAN HORTICULTURIST), 10 each for 40 cents. All postpaid. Mch. 11

Really the Cheapest Seed House in America.

Box 582. C. M. HILDESHEIM, Baltimore, Md.

Wanted, spare copies of January number. Two numbers of 1890 given for each copy sent in to the Editor.

EDINBURGH, SCOTLAND.

Wood, Ormerod & Co.,
FRUIT & MERCHANTS

AND

COMMISSION SALEMEN,

Account Sales with cheque weekly, or as de-ired. Con-
 signments of Choice Fruit (via Glasgow) solicited.

REFERENCE—The National Bank of Scotland, High St.,
 Edinburgh.

Oct. 16t. Telegraphic Address—Wood, Edinburgh.

McWILLIAM & EVERIST,
FRUIT AND GENERAL
COMMISSION MERCHANTS

25 Church Street, Toronto.

Consignments of Fruits and Produce solicited. Sat-
 isfaction guaranteed: advice of sales daily; returns
 made weekly. Our facilities for handling fruit are un-
 equalled. 6-12t

Canadian Poultry Review.

A large monthly Journal. Contains all the news of the
 Dominion. Well Illustrated. Practical and
 Interesting.

\$1 per year; 10c. per copy post paid.

CANADIAN KENNEL GAZETTE.

The Official Organ of the Canadian Kennel Club. Con-
 tains the C. E. C Registrations. Nicely Illus-
 trated. Full of Practical Advice.

\$1 per year; 10c. per copy post paid.

PIGEONS AND PETS.

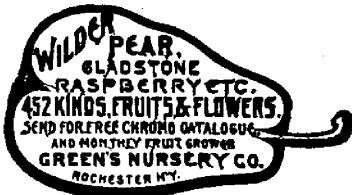
Devoted to Pigeons, Rabbits, Cage Birds and small Pets
 of all kinds. The only Journal of the kind
 in America.

50c. per year; 50c. per copy post paid.

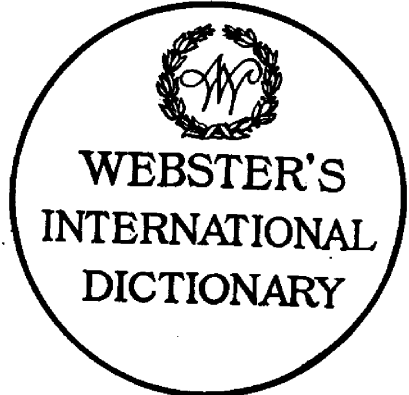
All to one address, \$1.75 per year.

H. B. DONOVAN, Publisher,

Nov. 12t. Toronto, Canada.



THE NEW WEBSTER
 JUST PUBLISHED—ENTIRELY NEW.



The Authentic "Unabridged," comprising the
 issues of 1864, '79 and '84, copyrighted property
 of the undersigned, is now **Thoroughly Re-
 vised and Enlarged**, and bears the name of

Webster's International Dictionary.

Editorial work upon this revision has been in
 progress for over 10 Years.

Not less than One Hundred paid editorial
 laborers have been engaged upon it.

Over \$300,000 expended in its preparation
 before the first copy was printed.

Critical comparison with any other Dictionary
 is invited. **GET THE BEST.**

G. & C. MERRIAM & CO., Publishers,
 Springfield, Mass., U. S. A.

Sold by all Booksellers. Illustrated pamphlet free.

Jan. 3t.

PEACH TREES.

All the hardy varieties, including LONGH-
 URST, HYNES' SURPRISE, GLOBE, WONDERFUL,
 &c. Also,

Apricot, Plum, and Pear Trees,

Grown at Niagara-on-the-Lake, Ont. Price
 list and description on application.

HENRY LUTTS,

Feb. 2t.

YOUNGSTOWN, N. Y.

AGENTS WANTED

BY THE

"DOMINION ILLUSTRATED"

In every Canadian town and village. Spe-
 cial inducements offered in addition to com-
 mission. For particulars address

The Sabiston Litho. and Pub. Co.,

Publishers, Montreal.