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THE
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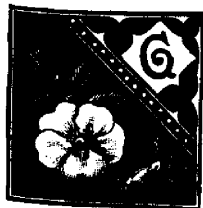
VOL. XIV.

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No. 4.



QUINCE GROWING.



GENERALLY speaking, the quince is very little grown in Canada. A few neglected specimens of stunted growth are found in fence corners and door yards, but there are very few trees receiving the proper cultivation, either for home use or for market. In the United States there are many large plantations from which much fruit comes into our Toronto and Montreal markets for distribution, but

in our smaller towns the quince is almost an unknown fruit, and consequently nearly unsalable. People need to be educated to the use of any fruit, and unless enough is grown to give them a taste, how can this education be accomplished? A few years ago our city markets were very scantily supplied with any of the small fruits, and consequently the tables of our citizens must have been utterly bare of these luxuries, but now, what a change! Every day fresh fruit arrives in car loads from every direction to find crowds of eager buyers. So with the quince; as soon as the townswomen learn the value of the quince for jellies, preserves, flavorings or sauce, there will be a largely increased demand, and consequently room for a large increase of quince production in Ontario.

To grow quinces successfully, the first point of importance is to select a deep rich soil of a rather heavy character, and well drained. This should be well worked up and put into good condition, just as one would prepare for a corn crop. The trees should be planted about ten feet apart each way, or in rows 12 feet apart, and the trees eight feet apart in the rows. The after cultiva-

tion should be constant. It is altogether a mistaken notion that quince trees, or any other trees, will thrive under neglect. True, heavy mulching will to a large extent make up for cultivation, but material for this purpose is not always at hand, and, as a rule, the best plan is to use the plow and cultivator frequently among the trees, thus exposing the land to the action of the air, without which the elements of fertility will long remain locked up from their roots. Another important point is liberal fertilizing. The quince tree is a great feeder, and the soil of the quince orchard should be manured heavily, favoring perhaps the ground near the trees.

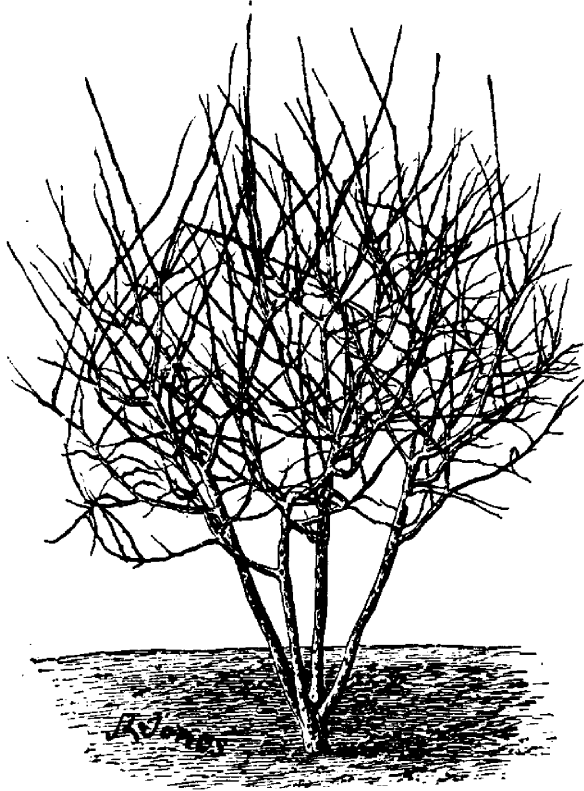


FIG. 24.—QUINCE TREE BEFORE PRUNING.

Some writers recommend, in addition, an annual application of salt, say about a quart scattered broadcast under each tree. Those who have not fertilized their quince trees liberally have no idea of the fruit which can be got under proper treatment. One might even doubt the identity of the same variety when grown under circumstances of neglect, or of careful cultivation. The

orchard should be cultivated and manured until the tree produces quinces so large that about sixty of them would fill a bushel basket. Such quinces would always command a ready sale in our markets, while the little scrubs we often see will go begging anywhere.

Again, the pruning of the quince is shamefully neglected by most people and a more unsightly mass of suckers and matted branches can scarcely be imagined than the quince tree will produce when neglected. The whole work, if done annually, can be performed with a good pruning knife. The tree form is undoubtedly the best, having branches quite near the ground. Every spring the

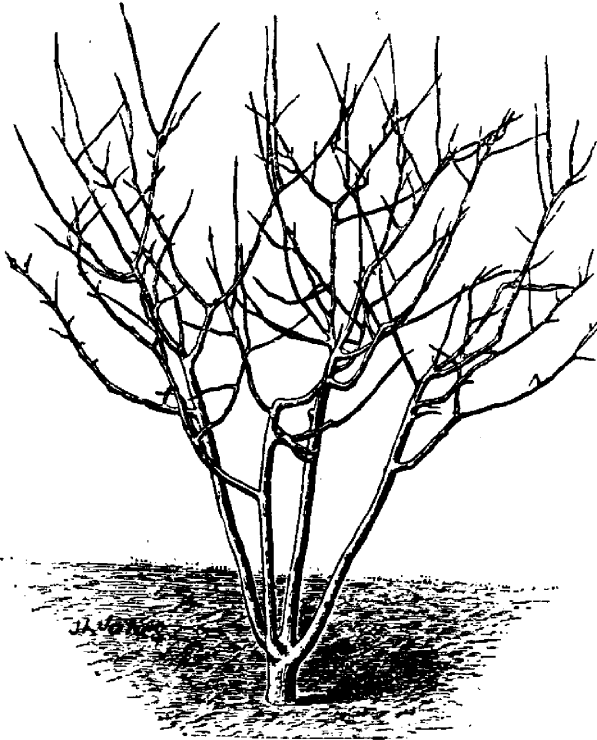


FIG. 25.—QUINCE TREE AFTER PRUNING.

new wood should be cut back, leaving only some four or five buds, and the old wood should be thinned out as seems necessary. We give our readers two illustrations from *Orchard and Garden*; Fig. 24 being a sample of a quince tree before pruning, and Fig. 25, the same after pruning. It will be evident to any one that a tree left without this treatment would bear more fruit than could be brought to perfection, and much strength would also be lost in supporting useless wood.

Among the difficulties to be contended with in growing the quince we may mention the borer, which must be carefully guarded against. If the larva has entered the wood, he must be dug out with a knife, but by washing the trees with strong suds of soft soap during the months of June, July and August, there will be no trouble from this insect. The leaf blight is also very troublesome, but of late our scientists have been able to follow out its life history and to recommend spraying with the Bordeaux mixture, or with ammoniacal carbonate of copper, as effective remedies.

VARIETIES.

ORANGE.—Large, roundish; bright golden yellow; very productive and of excellent flavor. An old and very popular variety, ripening in Southern Ontario toward the end of September.

ANGERS.—A little later than the Orange in ripening, fruit a little more tart and less showy, but a little more hardy, and a longer keeper. The tree is a strong grower, and much used as stock for dwarfing the pear.

REA'S MAMMOTH.—Seedling of the Orange, similar in appearance and in quality, but a little larger, somewhat more hardy. Some consider this the very best of all quinces.

CHAMPION.—This variety, which is the subject of our colored plate, is a new variety originating in Connecticut. It is very productive, a constant bearer, and the fruit averages larger than the Orange. With us at Grimsby, it ripens a fine load of large clean-looking fruit, less marred with cracks and scabs than the Orange or Angers, but unfortunately a little late in ripening for us to recommend for any section north of us. Some say that the tree itself is less hardy than the Orange.

MEECH'S PROLIFIC AND FULLER are two new varieties which are recommended as having special merit, and will receive notice under our department of New or Little Known Fruits.

THE RABY CASTLE CURRANT.

SOMETIMES the assertion is made, that the Raby Castle is simply the Victoria. To set this matter at rest, I will describe the Raby Castle and state that I have frequently met with those who have known this variety in England.

When the buds of the Raby Castle become enlarged in May they are whitish; later on the leaves much resemble those of the Black Currant. They are very strong growers and incline naturally to take the tree shape. This description will help anyone to identify the variety, but will not settle the matter with those who have the Raby Castle under the name of Victoria. Where this substitution has been made, it will be to the advantage of the grower, but will tend to confuse names.

Compared with the Red Dutch the Raby Castle is a stronger grower, and gives more and better fruit, though not much larger.

Niagara Falls South, Ont.

E. MORDEN.

REMEDIES FOR APPLE SCAB.

SIR,—I noticed, in the April, June and July numbers of the HORTICULTURIST for 1890, several different recipes for preparing fungicides. Would you please tell us which of the four is the most effective and the cheapest; as we must try to prevent the scab in the apple and pear?

WALTER HICK, *Goderich, Ont.*



THE terrible havoc made upon our fruit crops by the fungus diseases and the awful rate of their increase, should stir up all fruit growers to activity. At one time we feared an over supply of fruit, but now the question is rather how to get a crop at all, at least of first quality. It has been calculated by careful investigators in the United States that the loss to farmers in that country during the past year, arising from the prevalence of such fungi as rot, scab and the mildew, has not been less than \$400,000,000. We have no estimate of the injury in Canada; but who of us, that has had any experience at all, will doubt that we have suffered in like proportion. The apple scab is a minute, parasitic plant which attacks the twigs, buds, leaves (See Figs. 26 and 27), and fruit of the apple tree, but is more commonly noticeable upon the fruit itself, and its appearance is only too familiar to all our readers. There is little doubt that the loss of our apple crop in southern Ontario last year, is to be

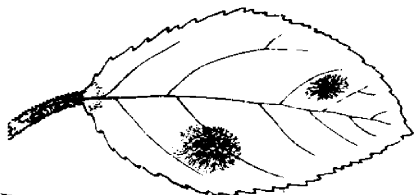


FIG. 26.—Leaf affected with Apple Scab.



FIG. 27.—Section of leaf showing scab fungus growing through epidermis.

credited to the unusual prevalence of the apple scab, brought about in part by the cool, moist weather, which was so favorable to its development. As considerable space has been given in our journal in the past to the description of this fungus and its mode of growth, it is unnecessary to repeat it here. The great question is that raised by our correspondent about the most suitable remedy to employ in its destruction.

The chief difficulty thus far has been the fact that any fungicide, strong enough to kill the apple scab, is also destructive to the foliage itself. But it is now found that the scab fungus lives through the winter on the young shoots and upon the scales of the buds; if, then, we can prevent the germination of the young spores in early spring before the foliage is developed, and when consequently strong solutions can be applied to the tree, we have a practical method of combatting this disease.

Prof. Scribner, whose researches in vegetable pathology have rendered his name famous, has found that sulphate of copper is one of the most effective fungicides that can be used. Experience has proved that this substance, modified as in the Bordeaux mixture and sprayed upon the grape leaves, will prevent the germination of the spores of the Downy mildew which may fall upon them. Now there are several formulas recommended for experiment as remedies for the apple scab, but they have scarcely been sufficiently tested yet for us to answer our correspondent, giving him actually the cheapest and the most effective one; this much seems to be fully established, that sulphate of copper is likely to prove equally effective in this case as it has been with the Downy mildew of the grape. It is with the hope that our prominent fruit growers will experiment with this substance faithfully in the spring, that we write at such length in reply to our correspondent. The following is the course of treatment recommended:

First, in the early spring, before the leaves appear, spray with a simple solution of sulphate of copper, or Eau Celeste, made by dissolving one pound of sulphate of copper in twenty-five gallons of water. This is for destroying any germs of the scab that may be lodged in the crevices of the bark.

Second, as soon as the petals have fallen, and it would be no longer safe to apply this strong solution, ammoniacal carbonate of copper may be applied. This is prepared as follows: Three ounces of precipitated carbonate of copper are dissolved in one quart of ammonia, strength 22° Baume. Dilute with 32 gallons of water. It will be observed that this is stronger than that recommended on page 206, vol. 13. It was hoped by Professor Taft that the carbonate of copper might be applied in powder, apart from the ammonia, with equal effect, and if so it could be stirred up in the Paris green water used for destroying the codling moth, but it is doubtful whether it will be so effective in this form. Certainly it would be very desirable to find out some formula that could be safely and effectively employed in conjunction with the Paris green, for the sake of economy in labor. We have it on good authority that the Bordeaux mixture may be applied in this way, and, therefore, we repeat the formula for its preparation: Sulphate of copper, six lbs., dissolved in 4 gallons of hot water; lime, 4 lbs., dissolved in 4 gallons of cold water. Mix the two solutions as above, and, when desired for use, dilute to 22 gallons with cold water.

Third, if the weather should be moist and cool, and, consequently, favorable to the development of the scab fungus, it would be well to repeat the application of the ammoniacal carbonate of copper once or twice during the summer months. There is an objection to the use of the Bordeaux mixture late in the season, from the fact that it adheres to the fruit in such a manner as to hinder its sale, unless washed.

The cost of the four applications need not be over 10 cents per tree. The copper carbonate, in lots of 20 lbs., can be purchased from Messrs. Eimer & Amend, 205, 11 Third Ave., New York, for 50 cents a pound; or it may be ordered through the local druggist at a slight advance on this cost. As this

substance is not usually kept in stock, it will be necessary to order it some time before it is needed.

In the opinion of Mr. E. S. Goff, of the University of Wisconsin, there is nothing better than the copper carbonate as a remedy for the scab, and, while he recommended ammoniacal solutions as the most effective, he advises those who are spraying with Paris green for the codling moth, to add also precipitated copper carbonate powder to the water, in the proportion of one ounce to twenty-five gallons.

Prof Taft, of Michigan, has been making extended experiments for the destruction of the apple scab. He thinks that modified Eau Celeste gives the best result, and that in his experiments he has saved from 50 to 75 per cent. of fruit that otherwise would have been scabby. The formula is as follows: Two pounds sulphate of copper, $2\frac{1}{2}$ pounds carbonate of soda, and $1\frac{1}{2}$ pints of ammonia (22° Baume). Dilute with 32 gallons of water.

FURTHER ADVICE ON TREATING APPLE SCAB.

Since writing the preceding article we have received the following additional advice on the best treatment of scab.

*From E. S. Goff, Horticulturist at the University of Wisconsin
Experimental Station.*

SIR,—It has often been recommended to use three ounces of carbonate of copper to one quart of ammonia, but I have been unable to dissolve more than one and one-quarter ounces in one quart. If more is added, it settles to the bottom without dissolving. I now recommend one and one-quarter ounces of precipitated carbonate of copper to one quart of ammonia.

So far as I can see from our work of the past season, double the amount of carbonate of copper suspended in water is as efficient as that dissolved in ammonia. Owing to the very abundant and frequent rains during June, our work did not show as well the past season as in the season of 1889, but the applications were beneficial.

I cannot say at present, whether it is better to use the carbonate of copper suspended in water, or to dissolve it in ammonia. Another season's trial, I hope, will answer this question definitely.

*From L. R. Taft, M.S., Professor of Horticulture at Michigan
Agricultural College.*

SIR,—In a favorable season I think you would have best results from perhaps three applications of modified Eau Celeste, made by dissolving two pounds copper sulphate in one vessel, two pounds carbonate of soda in another, pouring together and adding one pint of 20° ammonia, and thirty-two gallons of water. If it comes off cold and wet just before the blossoms open, I should spray them. Never spray while in blossom, on account of the bees.

You will find this an insecticide, but I am not sure whether it can be relied on to destroy the codling moth. Never add any arsenite to the fungicide as the ammonia will dissolve it and the foliage will be injured.

TREATMENT OF GRAPE MILDEWS.



HERE are two kinds of mildew which interfere with the prosperity of the vineyardist, and, while we in Ontario have had comparative immunity from the Downy mildew which is the most destructive form, yet the Powdery mildew, which is only too familiar to us, is rapidly gaining ground in our vineyards. While it does not come within the scope of a horticultural journal like this to enter into any scientific description of these fungi, it is yet necessary for us to be able to distinguish the one from the other.

The Downy mildew (*Peronospora viticola*), which in the south is very common and destructive, appears to be slowly invading our territory. When it affects the berry, it is spoken of as the Grey Rot, and at a later stage as the Brown Rot; as seen upon the leaves in the summer season, this mildew has the appearance of a shining white powder, on the under side, and by the aid of the microscope this is seen to consist of summer spores growing in thousands upon little branches which spring up through the breathing spores, or stomata, of the leaves, (Fig. 28). There are also parts which correspond to roots, and which draw nutriment for this fungus from the cells of the leaf, and sooner or later cause it to die and fall to the ground. The little summer spores are produced in countless numbers, and may be carried from one affected leaf over the whole vineyard.

Late in the fall the winter spores are formed, which live inside the leaf through the winter, and in the spring are just in the right condition to propagate the disease. The dry leaves are blown about in every direction, and, when disintegrated by the spring rains, set free hosts of spores to settle upon the young foliage. These quickly send down minute suckers to absorb the nutriment which was intended for the development of the leaf itself.

The Powdery mildew (*Uncinula spiralis*) which is so common a pest in our Canadian vineyards, differs from the one just described, first, in appearing upon the upper side of the leaves and berries as a dirty white coating, from which it takes its name; and, second, that it is wholly external and does not penetrate to the interior of the leaf or fruit; and, third, the winter spores are not within the leaf but upon its surface, where they may be easily discerned when

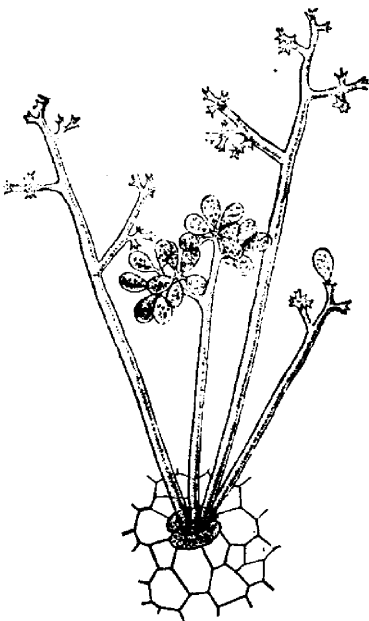


FIG. 28.—SPORE-PRODUCING BRANCHES OF DOWNY MILDEW.

mature. In other respects its life history is similar to that of the Downy mildew.

Treatment—From the brief account of the life history of these fungi, which have been given above, it will be evident that the best means of preventing their growth is, first, by carefully destroying the foliage of the affected vineyard in the autumn; and, second, by an application in the spring to the young foliage of such mixtures as will prevent the germination of the spores, when they alight upon it. With reference to the best copper mixtures for spraying the vineyard, Mr. B. T. Galloway, Chief of the Division of Vegetable Pathology, Washington, D. C., writes us as follows:

“In reply to your recent inquiry as to the best method of combatting the powdery mildew of the grape, I have to say that the ammoniacal solution has been found fully as effective against this disease as any remedy now used. I would not advise the use of the Bordeaux mixture for this trouble, as it is certainly no better than the ammoniacal solution, while, on the other hand, it is considerably more expensive.

In case the ammoniacal solution is used, I would suggest that it be made by dissolving 5 ounces of copper carbonate in $1\frac{1}{2}$ pints of ammonia having the strength of 26°. When dissolved pour into a 50 gallon barrel, and fill the latter with water. The solution made in this way will cost about 50 cents per barrel.”

We would advise our readers who intend experimenting during the coming spring with these mixtures, to make no delay in giving their order to the local druggist, who, as a rule, does not keep the copper carbonate in stock. He will, however, be able to procure it so as to sell it at about 60 cents a pound. Three or four applications will probably be sufficient for the vineyards of Ontario, because in these cooler latitudes, the fungus does not grow so luxuriantly as it does farther south. It is very important that the vines should be thoroughly sprayed so that every part liable to mildew shall be well covered with the mixture. An early spraying is very important, and the first application, according to Mr. Fairchild, of Washington, D. C., should be made at least one week or ten days before the young buds have fully burst their winter coats, just as the red tips of the young leaves are beginning to show. The second spraying may be postponed until the young leaves are from one to one and a half inches in diameter, but not later. The third spraying should be given when the flowers have fully opened, and this will not injure the blooms, for these have been fertilized before the caps have dropped off; and the fourth application may be made when the fruit is about the size of garden peas.

If this spraying is carefully attended to, we have the best authority for saying that our readers may count upon almost perfect immunity from the mildews, the rots, and also from several other fungi which affect the grape.

Of course, in order to do this work effectively, spraying machines of some kind will be necessary. Many growers, who have large orchards, have already



FIG. 29 —THE JAPY SPRAYER.

provided themselves with a large spraying pump, attached to a 50 gallon barrel, in order to wage war against the codling moth. But we are constantly asked for a convenient kind of sprayer for the garden and small sized vineyard. Such sprayers have been long in use in France, and one in particular, called the Japy sprayer, is of special merit, (Fig. 29). We are glad to be able to state that a similar one has been designed by Mr. B. T. Galloway; it is now being manufactured in the United States, and is offered for sale at \$14.00 retail. The expense of the pump and of copper mixtures are quite an item, it is true, but the good results

are so certain and important that the investment is a perfectly safe one.

RAISING PEACH TREES.

SIR,—I intend to set out about five acres of peaches. The soil is a gravelly sand, and is situated on the western edge of the mountain, half a mile north of Fenwick. Would you please give me some advice with regard to the raising of peach trees from the pits, and also, how the young trees should be budded; the best varieties and the distance apart they should be planted in the orchard?

WM. CLAPTON, *Fenwick, Ont.*

QUR friends in the neighborhood of Fonthill, near which place Fenwick is situated, had much encouragement last year in peach growing, for their trees yielded an abundant crop and the price was extravagantly high. Wherever peaches will succeed in Ontario, there is no more profitable fruit to grow, for very frequently a grower has received for his peach crop as much money as would, under ordinary circumstances, be considered a fair value for the land upon which it was produced.

Our subscriber is wise in undertaking to grow his own trees, for any one, who has a little skill in this way, may save himself quite an expense in the purchase of the trees. The method, usually adopted by nurserymen, is somewhat as follows: The peach pits are thoroughly mixed with sandy soil or sawdust, either in a box or in a garden bed, and left in this way exposed to the winter's frost, which renders them easily cracked in the spring. A choice piece of

land having been thoroughly prepared, as for corn, is marked out in rows, say three feet apart, and the kernels planted in the drills about an inch deep and three or four inches apart in the rows. If the season is favorable, the seedlings will mostly be ready for budding in the following August or September. The sticks of the bud are cut from the young wood of such varieties as it is desired to propagate, and, the leaves being removed with the exception of the petiole which serves as a handle, the buds are cut out as required and in the manner shown

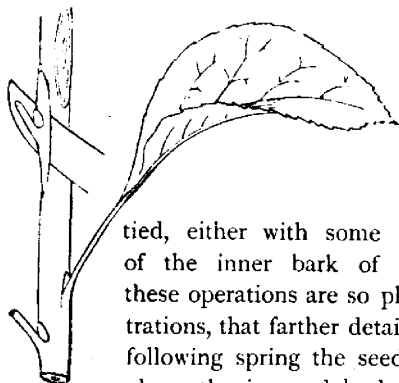


FIG. 30.

in the accompanying illustration. With a knife adapted for the purpose, a "T" shaped incision is made in the bark of the young tree near the ground, usually on the north side, and this enables the operator to lift the bark and neatly insert the bud in its place, when it is immediately tied, either with some soft cord, or, what is better, with strips of the inner bark of the basswood tree. All these operations are so plainly shown in our illustrations, that farther details are unnecessary. The following spring the seedling trees are cut off just above the inserted bud, and the whole strength of the tree directed into it; as a result it will grow so rapidly, that it will be large enough for orchard planting by another spring.

The best soil for the peach orchard is a sandy loam, well drained, and it should be well prepared, both by thorough cultivation, and a good dressing of wood ashes before planting.

Where the Yellows does not prevail, the peach trees may be planted twenty feet apart each way, but, where the trees are short lived on account of this disease, we are planting them much closer.

On page 6 of volume 13 will be found a good list of peaches for shipping purposes.

With a knife adapted for the purpose, a "T" shaped incision is made in the bark of the young tree near the ground, usually on the north side, and this enables the operator to lift the bark and neatly insert the bud in its place, when it is immediately

FIG. 31.
Manner of inserting
a bud.

GRAPE VINES ON HEAVY SOILS.—The old idea that grapes thrive best on light land is mainly due to the fact that such soils are naturally dry. While a heavy clay is not best for the grape, it is no insuperable obstacle to success in vineyarding, provided it is thoroughly underdrained. In fact, grape growing is possible under a wider range of conditions and soil than is the case with any other crop. The one thing that grape roots cannot abide is stagnant water. No matter if this dries out in mid-summer it is then past the power of the vine to regain lost time. Land thoroughly drained to the depth of three feet warms more quickly in the spring and makes a difference in temperature of five to ten degrees or more at the time when the vine most needs warmth.

NOTES ON THE STRAWBERRY.

GENERAL OBSERVATIONS ON STRAWBERRIES.



Four varieties of strawberries are separated into two classes, viz.: (1) those that continue a long time in bearing, and (2) those that continue a short season—it will be found that the most prolific fall into the first-class, and the least productive into the second. It is also true, in general, that the greater the number of pickings during the season, the greater the total product. It might seem that the aggregate crop would depend as much or more upon the quantity of ripe fruit at each picking, as upon the number of pickings. It would also seem that the varieties which ripen slowly would be more affected by dry weather, or other unfavorable influences, than those that yield their crop in a short time; but such does not appear to be the fact. A short strawberry season means a short crop, whether varieties are considered individually or in the aggregate, and the converse is equally true.

A variety that gives three pickings during the season, will yield about half as large a crop as one that gives six. This generalization refers particularly to varieties that have well fixed characteristics. Some of these variable varieties may, in many cases, appear to be exceptions. There are also varieties that have neither a long nor a short season, hence can hardly be classified. All things considered, the long season varieties are more sure and profitable than those that continue but a short time in bearing, and yield comparatively few pickings.

EARLY AND LATE, COMPARED WITH MEDIUM VARIETIES.

Nearly all of the very early varieties continue but a short time in bearing, give comparatively few pickings, and produce light crops. The same is true, in a more marked degree, of the extremely late ripening sorts. The effect is the same as if the last pickings of the early varieties, and the first pickings of the late, had been destroyed; both early and late hold out but a short time." In general, the medium, or second early sorts, are these having a long season. Although not all that are found in this class are highly fruitful, it is true that the most fruitful come within it.

PERFECT AND IMPERFECT FLOWERED VARIETIES COMPARED.

One thing is clear, *i. e.*, that the most prolific varieties are found among these having imperfect flowers. Nearly all this class are very prolific. Among those having perfect flowers, none are found that are extremely prolific; the Wilson and Capt. Jack being possible exceptions under favorable conditions.

Taking averages for the two classes, we find that the varieties having imperfect flowers, stand thirty-eight per cent. higher than those having perfect

flowers. If we take four from each class of the most prolific, the imperfect flowered sorts stand thirty per cent. higher than those having perfect flowers.

There can be no doubt that the production of pollen is an exhaustive process, hence the varieties having perfect flowers are at a disadvantage. No doubt some of the perfect flowered sorts are very nearly equal to any in fruitfulness, and, under certain circumstances, may fully equal, but the chances are against them when unfavorable conditions occur. Given two varieties of equal vigor and productiveness, one having perfect, the other imperfect flowers, the extra work of pollen bearing on one, will so weaken the plants as to render them more subject to the evil effects of fungi, insects, dry weather, frost, etc., than those that produce no pollen.

There can hardly be a question that the best market varieties at the present time have imperfect flowers. This is not alone because of the greater fruitfulness of varieties of this class, than those having perfect flowers, but because of more general reliability, *i. e.*, they more uniformly produce good crops. In many respects it may be desirable to have varieties with perfect flowers only, but it is possible that future developments will be along the line of still greater specialization. The highest development of fruit-bearing qualities in one class, and of pollen bearing in the other, gives promise of greater fruitfulness than to combine the two functions in one variety.

SUMMARY.

1. To meet the wants of strawberry growers, a variety ought to have sufficient health and vigor to adapt itself to widely varying conditions, and to possess one or more marked characteristics. It is not worth while to seek to find varieties that are adapted to particular soils, since varieties that have a limited range are generally found to be variable and untrustworthy. The most valuable varieties are the least variable and are easily suited to soil and climate.

2. The following varieties have been thoroughly tested and are suited to the wants of those who grow berries for market: Bubach, Eureka, Crescent, Haverland and Warfield.

3. When large berries are desired rather than quantity, the following can be recommended for home use or market: Cumberland, Crawford, Gandy, Louise, Miami, Pearl.

4. The new varieties that seem to be most promising, are Enhance, Farnworth, Ivanhoe, Middlefield, Muskingum, Michel's Early, Parker Earle, Shuster's Gem and Waldron.

5. The most productive varieties are those that have a long season, *i. e.*, give a comparatively large number of pickings.

6. Very early, and extremely late varieties, are less fruitful than medium early.

7. Perfect flowered, as a rule, are less productive than the pistillate, or imperfect flowered varieties.—*Selections by Strawberry Bulletin of the Ohio Experimental Station, by JOHN LITTLE, Granton, Ont.*

HORTICULTURAL HUMBUGS.

"It really seems as if the creature, man, was as anxious to be deceived in seeds as in quack medicines, for we do not hesitate to declare upon our reputation as seedsmen of repute that nine-tenths of the so-called new sorts advertised at high prices are, so far as merit goes, rank humbugs, and it is time the public were told so."—*Landreth & Sons (Philadelphia) Catalogue for 1890, page 2 of cover.*



THE above is a tremendous indictment and boldly and squarely made; made, too, by the oldest seed-house, we believe, in America, it having been established 107 years, or in 1874, and still holding its place in the front rank. Made by such respectable people it is entitled to rather more than ordinary attention, particularly when we hear it echoed by many respectable horticulturists and re-echoed by the much-victimised public.

Just now the catalogues come fluttering in like valentines on that good saint's anniversary; and, like them too, in every style, from the plain and practical to the very gay and gaudy. Some, if not quite true to nature, are yet clever creations of art.

Taking up one of these we find no less than twenty-two quarto pages devoted to "Novelties and Specialties." Many other catalogues are about equally ambitious to show as much of this kind of "bunting" as any admiral on the sea of horticultural adventure. Very few of this class are Canadian, it is comforting to note; and to know, further, that we can refer to, and rely upon, the plain and unpretentious catalogues of our own people in this line of business, such as those of Messrs. A. M. Smith, of St. Catharines, and Holton, of Hamilton, nurserymen, and G. A. Bruce & Co., seedsmen, Hamilton. The writer mentions these not by any means to disparage others, but from a long acquaintance of over a third of a century and a knowledge of their reliability and success. They could not have been thus reliable had their advertisements been of that class of Novelties, "nine-tenths of which are rank humbugs," as charged by Messrs. Landreth & Sons.

However, it is not with Novelties, or with the New, merely because it is new, that we ought to quarrel, or can afford to quarrel, but with the abuses of the name and with the iniquities the name Novelty is made to perpetrate. Progress is a law of the human mind, and signifies in the word itself, not only the improvement of the old, but also some displacement of the old by the discovery and invention of new and better in every line of human production. But that word "better" again implies trial—a proving of all things, and the "holding fast of that which is" not only "good," but that which is *best* both of new and old. To be tried, the new must be introduced to the notice of those who are expected to try. This, again, implies advertising and illustration. Here *Demand*, hungry

to voraciousness for improvements, meets Supply with his products, from the modest and unornamental, on through all that is probable—possibly on to every exaggeration of size, form, color, quantity and quality. We do not intend to stigmatize all these fine things as so many willful deceptions. It is easy to understand how an expert in horticulture, in possession of all the requisites for the highest success, finds little or no difficulty in obtaining many of these charming results, and so hastily conclude that his customers can do the same. Then, too, there are both culture and merit in aiming at the best, and the best to be aimed at must be held up to view. The general result, however, is that the customer trusting to these fine “appearances” gets woefully disappointed. It is nonsense to say, “Let the intending purchaser read up” before buying, for the very essence of a Novelty is that it is not in the books, and the representations are that none but the *one man* has that or those particular things to sell. Moreover, as the number of species is very great, amounting to hundreds now catalogued, and to many hundreds of varieties of some species (there are nearly a thousand varieties of roses alone), amounting all told to so many thousands, that not one expert perhaps could be found to identify every one. What then can he, who needs all his time to know and conduct his own specialty successfully, do toward protecting himself from horticultural quackery? As well call upon every man to be his own physician or his own lawyer. This unavoidable ignorance of the buyer is the opportunity of the jobber, and of the *impersonal* and irresponsible (because impersonal) nursery or seed company.

Armed cap a pie, with gorgeous pictures of many wondrous novelties, so called, some of them really new with nothing but their newness to recommend them, others nothing but new-named, old and long-ago discarded varieties, which have figured so often as novelties that they have acquired as many synonyms and *aliases* as a burglar or any other outlaw, the innocent and enthusiastic seeker after the “best,” buys or subscribes for “The *ne plus ultra*—the Remontant Arbor Vitæ—the Persica Palustris, or seed of the Ever-blooming Fungus.” We have hinted farther back that Canada is less afflicted with this plague than our neighbors. Well, we are so, first, because we have only about one-twelfth of their population, and according to Isaiah’s, Plato’s, and Matthew Arnold’s Law of Numbers, we have only a twelfth as many as our cousins, open to this kind of fraud. This is our negative defence.—Our positive, is to some extent our fiscal policy, and also the characteristic prudence of our people, who are generally mindful of the admonition *festina lente*. Occasionally, some one buys, not because he wants the “wonder,” but because he *don’t* want the agent in his house any longer. And of the most cautious, now and then, one gets ensnared. The following, told by a very worthy old lady to the writer, will illustrate. She had a respectable collection of house plants, and, like all amateurs, desired to add beauty to beauty and novelty to novelty. The ubiquitous agent was presently there and offered her a wonderful “New Moss Rose,” price \$1. She subscribed—in due time it came. It was tenderly and assiduously

cared for, notwithstanding the "moss" upon it was preposterously coarse, sharp and vicious. At last it leaved and bloomed, a true rosaceæ indeed, but not a Moss Rose; just a wild, red raspberry. It was nothing poisonous! This is one person's experience. The writer can give many more within the circumscribed range of his own experience. All of them tend to justify the aforesaid "indictment."

The next question is what can be done to remove this "bar sinister" from the escutcheon of Horticulture, the oldest in nature and art, whose "base" sustains, whose "border" encircles with a girdle of beauty every other enterprise of man. Laws applicable to other frauds are inadequate to grapple with this. For long before the *ne plus ultra* apple fruited, or the "Moss Rose" bloomed, and by so doing furnished the necessary evidence for convicting and punishing, the transgressor is perhaps at the Antipodes, successfully pursuing his nefarious trade in the same "now you see me now you don't" mode. It may be that he is dead, and an ornate monument twelve feet high over his grave to carry down the memory of his many virtues to future generations, to evoke their gratitude and emulation.

The writer is aware that some useful work has been done toward "reform of the nomenclature. This cannot meet the whole case. It may be the "pound of cure," what we want is the "ounce of prevention." Omitting details: what is there to prevent the enacting of a law demanding in every case, as in application for a patent right of invention, a specification setting forth the distinctive differences and characteristics of the new candidate from every other known member of the floral family? These differences to be verified by a competent authority, and then sworn to and registered. Such a law to have all the customary penal enactments of heavy penalties for gross frauds.

The question has its difficulties, no doubt. So has every right that is attempted to be protected or is protected against wrong doing.

Milton, Ont,

S. P. MORSE.

THE GRAPE: AN ORIENTAL LEGEND.—Four travellers, an Arab, a Turk, a Greek and a Persian met at a city's gate; it was decided that one of them should take the combined moneys of the four and purchase for the common stock the food which they needed; but they differed each from the other as to what food should be chosen; the Arab insisted that no food was so sweet and nourishing as the agub, while anghar was the food the Persian desired. The Turk said that azum was the only thing which they should eat, while the Greek contended that symphalion was the choicest of all the foods which men could eat. As they thus quarreled one with the other, before their eyes a gardener passed with grapes. "See, agub!" cried the Arab. "No, it is anghar," said the Persian. "This is azum," said the Turk. "That is my symphalion," cried the Greek, and so they ate their grapes in peace.

DOWNING'S PEAR FOR HOME USE.

I GIVE below a list of pears that ripen in succession from the last day of July to the first day of February. A single tree of each kind will be sufficient for a moderate sized family, and two of each kind for a larger one. The list is long, and though some of the varieties named ripen nearly at the same time, yet in unfavorable years some kinds might fail when others of the same season might not. This list is for family use, and for those that have sufficient room to grow them :

- | | |
|-------------------------|-------------------------|
| 1. Summer Doyenne, | 13. Bosc, |
| 2. Giffard, | 14. Frederick Clapp, |
| 3. Dearborn, | 15. Comice, |
| 4. Manning's Elizabeth, | 16. Souvenir d'Esperen, |
| 5. Tyson, | 17. Angouleme, |
| 6. Margaret, | 18. Emile d'Heyst, |
| 7. Bartlett, | 19. Lawrence, |
| 8. Boussock, | 20. Anjou, |
| 9. Seckel, | 21. Dana's Hovey, |
| 10. Sheldon, | 22. Josephine, |
| 11. White Doyenne, | 23. Vicar. |
| 12. Gray Doyenne, | |

For those who have room for only one tree, my choice would be No. 13; yet the majority would probably choose the Bartlett. Second choice, 21, then the following numbers, according to the size of the garden: Nos. 4, 5, 6, 8, 10, 11, 16, 18, 20, 21, 23. The last one is generally for culinary uses, yet in some localities, when well grown and well ripened, it is a very good eating pear. The above named kinds are for this section and the middle states generally, yet they will vary more or less according to soil, locality, culture, etc. The number of trees of each kind to be governed by the demand in the market where sold. For either home use or market I would advise standard trees, which will give best returns for the amount of land, and the labor given them.

CHARLES DOWNING in *New York Tribune*.

GOOSEBERRY MILDEW.

AT the recent meeting of the N. Y. Horticultural Society, Prof. Fairchild, of the U.S. Dept. of Agriculture, mentioned eau celeste, as an excellent remedy, prepared as follows:—Dissolve 2 lbs of sulphate of copper in 2 gallons of hot water; in another vessel dissolve 2½ lbs. of carbonate of soda; mix the two solutions, and when all chemical reaction has ceased, add 1½ pints of ammonia, then dilute to 22 gallons with water. This should be applied once before the leaves show in the spring, then three times during the growing season, being careful to wet thoroughly all the foliage and wood.—E. E. S.

PEACH GROWING IN NOVA SCOTIA.

SIR,—Some of your readers may be surprised at the statement that peaches can be successfully grown in the open air in Nova Scotia. But such is the fact. About five years ago I ordered six peach trees—all different varieties—from a nursery-man in Western New York, as a mere experiment. Only four of them survived the first winter and they have made excellent growth, except one, which is affected by blistered or curled leaf. The first three have all borne fruit. The fruit on two of them the last season surprised, not only my neighbors, some of whom had never seen peaches growing and could not name the fruit, but others who had visited peach growing sections in the U. S., and who declared they never saw their superior. I have eleven very promising younger trees; and some of my neighbors, profiting by the experiment, are ordering peach trees for this spring's setting. I would just add that, although we are situated about on the 45th parallel, the mercury seldom falls below 0°, and very rarely 10° below zero, and I suppose it is the mildness of our winters that so favors the production of this fruit.

North Kingston, N. S.

JOHN KILLAM.

MANURING BEARING ORCHARDS.

ON my orchard of bearing trees I haul out as many as forty wagon loads of manure to the acre every year and spread it over the ground. I mulch my trees thoroughly. I think it is an impossibility for a tree to bear fruit and live any length of time, making a thrifty growth unless the ground is properly manured. If it requires all the vitality there is in a tree to ripen and mature its fruit without making growth it will not last long. I have observed that from experience. If we can keep the ground rich enough to make a tree have considerable growth, besides maturing its fruit, then there is a proper prospect of its living a number of years.

I have trees in my orchard that have now stood there 28 years, and to-day they are just as healthy as they were 20 years ago; at least I sold more than four tons of apples from an orchard of Duchess of Oldenburg, seven by nine rods in size, this season. The trees bear every year; but this result is only accomplished by means of heavy manuring and mulching. I have other trees likewise that I treat in the same manner. I find as they grow older that they require more mulching. The vitality in a tree must be kept up. It appears to me there is a similiarity in animal and vegetable life. We must feed a tree, because it is very exhausting for it to produce its fruit each and every year. The results with me from mulching have been very satisfactory. It keeps the ground in good condition and does not let the grass grow. However, manuring may be overdone with young trees, but when a tree comes into bearing it needs much food.—*Minnesota Horticultural Report.*

❖ New or Little Known Fruits. ❖

TWO NEW BERRIES.

MR. J. T. LOVETT, of Little Silver, N. Y., very kindly sends us cuts and description of his new berries, which he claims merit general distribution. One is a strawberry, originating in Kentucky about five years ago, a chance seedling, probably a cross between Wilson and Crescent. It is described as above medium in size, averaging large and uniform, and seldom ill-shaped. Its season is early, second only to the Crystal City; and in productiveness unexcelled, succeeding even on poor, light soil. Color bright crimson; blossom perfect, and foliage very healthy.

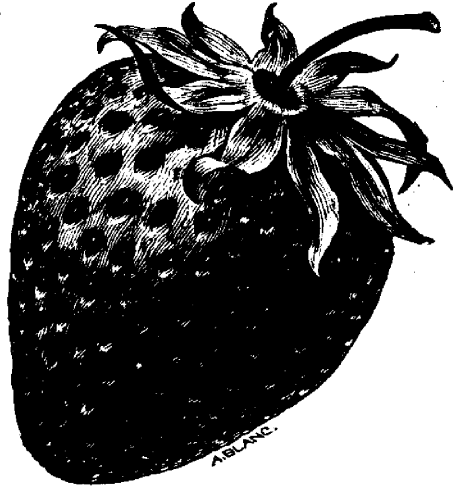


FIG. 31.—LOVETT'S EARLY.



FIG. 32.—THE LOVETT.

The other is a black raspberry, said to be as large as the Gregg, earlier, more productive and much hardier. If it should bear out these claims it will be an ideal berry indeed. This raspberry is also a chance seedling, originating in Indiana, where it has been fruited for some years by the side of Doolittle Improved, and Gregg, and has been found to ripen as early as the former, to be as large as latter, very firm, sweet, and of finest flavor. We shall take the earliest opportunity of testing the real worth of these two novelties. It seems almost a misfortune that the names should be so similar as Lovett's Early Strawberry and The Lovett Raspberry.

✱ The Kitchen Garden. ✱

ASPARAGUS.—III.

THE MARKET PLANTATION.



WHILE for one's own table, asparagus should be cut and cooked in the same hour, by judicious handling the product of a field may be kept two or three days and be fresh and plump for the market. This is done by standing the bunches in fresh water and renewing it once in twelve hours, removing a little of the loose ends of the bunches with a sharp knife just previous to placing it on the market. My practice is to keep my field clean of all sprouts from the beginning to the end of the picking season. A shoot that is grassy or gnarled is thrown away or fed to the calves.

The plantation should not be weakened by too long a season of gathering. A good rule to follow is to stop when the early peas are ready to market from adjoining land.

I have given a good deal of attention to the literature of asparagus profits and confess that while my own product compares favorably in quantity with that secured from the same area by eastern gardeners, my profits are but a fraction of theirs.

The growing of asparagus as a field crop, however, in our State, may be made a source of considerable profit, even at moderate prices. The labor, after a plantation is once established, comes at a season when it is least felt. The income, on the other hand, materializes at a season when it is most needed—before other sources have begun to render any assistance.

Two exigencies have materially reduced the profits from my own field: (1) untimely frosts, which may in a single night nip the buds which would otherwise mature into a full picking; (2) a hard wind will occasionally arise just as a picking of shoots is nearly ready, and blow particles of sand against them, puncturing the epidermis and inducing a gnarled, monstrous and often woody growth, thus destroying the picking for market.

To avoid evil results from the first contingency, I shall this year smooth my field in autumn and spread over it a coating of coarse barn manure. This will make a protection for winter, and in spring this will be hauled between the rows and be in readiness to quickly draw over the young buds upon a sudden depression of temperature indicative of frost. This can be done at a very slight expense and perhaps the investment of a few pennies may save as many dollars.

For the second difficulty I have no remedy, because the field is so situated that I cannot protect it from the prevailing winds by any wind-break. Had I

forseen it, before making the plantation, a more protected location might have been chosen.

INSECT ENEMIES.

The only insect enemy of asparagus which has appeared yet in our State is the cutworm. Clean and continuous culture in early spring, following autumn plowing of the surface, has reduced this pest to a minimum with me.

That persistent enemy to the culture of this esculent, the asparagus beetle, which appeared in eastern plantations as early as 1860, has not reached us yet.

ORNAMENTAL USE OF ASPARAGUS.

If it were not a common kind of vegetable, asparagus would take a prominent place as a lawn decorative plant. Its airiness and delicacy, combined with its pleasing tint of green and its perfection as a screen, render it one of the most useful ornamental plants.

It is inexpensive, grows rapidly, and requires little care. Many an unsightly corner may be made attractive by its employment, and its usefulness in the kitchen garden ought not to reduce its popularity for ornamental purposes. Altogether, asparagus is one of our most valuable importations from across the sea, and while we may not rival our French brethren in the quality of the product we secure from the plant, perhaps our tastes are not so highly cultivated but that our own product is as satisfactory for our own people.

CHAS. W. GARFIELD, before *the Michigan State Hort. Society*.

TRANSPLANTING ONIONS.



N a bulletin of the Ohio Experiment Station for October last, we find some further points on the practice of transplanting onions. It seems that Mr. Green, the horticulturist, has also been making experiments in the same line as Mr. Greiner, and with the same results. He finds that by transplanting, the yield of the onion bed can be increased in some cases about 100 per cent, especially with such late ripening foreign varieties as the Pompeii, Prize-taker and the White Victoria. In explanation Mr. Green mentioned three causes which appear to produce the increase in yield: first, longer period of growth of transplanted onions than those sown in the field; second, the advantage of making the greater share of their growth earlier in the season during the cool weather; and, third, the greater uniformity in size. With regard to the expense incurred by the extra labor in transplanting, he says that that is offset by the saving of labor in weeding. Indeed, Mr. Green assures us that the cost of growing a crop is actually lessened, instead of being increased, by transplanting, and further that the finer appearance of the transplanted onions and their increased market value over those grown by the common method gives this plan a very decided advantage.

A NEAT LITTLE GREENHOUSE.

IN England amateur greenhouses, something like the one illustrated, are very common and may be of any size to suit the purse of the owner, from that of twelve feet by eight, as the one shown, which is called a lean-to, or backing up against some part of the dwelling, upwards.

Such houses are there contracted for complete, and come as low as \$55, and may be easily constructed here for \$100. It should, however, always conform in a measure to the style of the house.

The principal difficulty in such houses is the heating in our cold northern winters. It is an error to depend upon borrowed heat from the rooms for either these or the inclosed piazzas. What is wanted is a snug little heating apparatus that will not consume much coal and that will last all night without attention. Even this part is not thoroughly satisfactory in the old country, if we are to believe a late writer, who claims, on the whole, that the old-fashioned flue comes nearer being satisfactory than the numberless apparatuses advertised therefor. And yet with our hard coal a properly-contrived boiler and pipes should meet all the requirements. And it undoubtedly would if expense is left out of the count.



What has been said about these glass houses drawing heat in the dog-days, holds good with double force with this class of structure, and our advice would be to attach them in such a way as not to inclose any important window space, or the summer heat will surely be a nuisance.

Now-a-days, when nearly all carpenter-work is got out complete at the large factories, any one living near them can ascertain exactly how much the material will cost, and then a carpenter in a few days will put it up.—*Prairie Farmer*.

SETTING OUT ORCHARDS.—Many orchards are set out in autumn; still more in spring; but whether set in autumn or spring, the ground should be well prepared in autumn. If the soil holds water in wet season, it must be well underdrained. Subsoiling in most localities is of much value. This work, it is true, may be imperfectly performed after the trees are set and are growing, but the work is more easily done, and in a better manner beforehand. Some persons mistakenly recommend setting trees where nothing else can be raised, as on hill-sides or among rocks and stones; but as a good and well managed orchard is commonly more profitable for the acre it occupies, than almost any crop, the best ground should be chosen for it, so that good cultivation may be given. It was formerly recommended to dig wide holes. This practice answered well for a limited number of trees, where the subsoil was hard and had not been loosened.



The Canadian Horticulturist

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NOTES AND COMMENTS.

BLACK HEART.—Dr. Hoskins' opinion is that this is a disorganized wood, caused by the rupture of the sap passages by severe cold. The sap spreads in between the fibres of the wood, and runs black. Pruning trees during severe winter weather renders trees more subject to this evil.

THE WEALTHY APPLE is extolled by our Quebec friends as a most valuable apple, and hardy tree, but not as being free from faults, the chief of which is over-bearing. Mr. Shepherd says that 50 per cent. of his crop, year before last, was too small for market.

A PAYING CHERRY TREE.—A writer in *The Fruit Growers' Journal*, Illinois, writes that his best cherry tree is a Napoleon Bigarreau, budded on a Mahaleb. It is over one foot in diameter at the base, some twenty feet high, round headed, and the top is about thirty feet in diameter. For three years past it has produced from \$12 to \$16 worth of fruit each year!

THE WEAVER PLUM, favorably mentioned by Mr. A. A. Wright, of Renfrew, on page 352 of Vol. 13, is also highly commended by Mr. J. S. McLelland, of Northern Colorado. He says; "It is the largest of the native plums I have grown, and probably the best one to eat out of hand. The tree is a free, upright grower and very prolific, a superb plum in every way."

THE BEST WINTER APPLES.—At a recent meeting of the Montreal Horticultural Society, Mr. J. T. McBride said he found his customers in Montreal, in buying apples for family use, usually asked for Baldwins, Spies, Greenings and

Russets, and although they would take a few Kings or Spitzenbergs, they usually objected to any other kinds. He also found that the fruit that makes the most money is usually that which reaches market first, that is, of each variety as the season advances. A pretty and attractive parcel was very important, and was sure to command a higher price than the same fruit put up in an ordinary style.

IRON CLAD APPLES.—By this term is meant such apples as cannot be seriously injured by the winter's cold, and it is of course only a relative term. Dr. Hoskins, of Newport, Vt., gave our Montreal friends the following list of iron-clads: McIntosh Red, Borsdorf, Bethel of Vermont, Tetofsky, Shiawassee Beauty, Wealthy, McMahon's White, Northfield Beauty, Scott's Winter, Iowa Russet, and Yellow Transparent.

Mr. N. C. Fisk, of Abbotsford, gave the following as the most profitable varieties for market for planting in the province of Quebec: Duchess, Wealthy and Fameuse, standing thus in order of merit, but Dr. Hoskins claimed that the Yellow Transparent was more profitable than the Duchess.

The Golden White is very promising, and keeps, according to Dr. Hoskins, well into the month of January.

PROFITABLE PEACH GROWING.—Mr. J. H. Hale, of Massachusetts, seems to have made a fortune out of peach growing. He thins the fruit by pruning the trees after blooming, and afterwards picks off more than half the fruit. He manures with ground bone and muriate of potash, applying 1000 pounds or more of the former and 300 of the latter, to an acre. He finds that too much stable manure causes short lived and unhealthy trees, but if any trees look unthrifty, he applies six or eight pounds of nitrate of soda to each. He has his fruit nicely assorted and packed, employing ladies of good taste, who are paid as high as \$2.00 per day on account of their superior qualifications. The fruit is put up in new baskets made of white poplar, labeled and guaranteed to be just as good in the middle or bottom of the basket as on the top, and his fruit brings from 75c. to \$1.00 more than any other. He makes four grades. Last year, according to the *Rural New Yorker*, he sold 16,000 baskets, the best grade selling from \$2.50 to \$3.50 per basket, the culls from 15 to 40 cents, and the whole averaging about \$1.56.



❖ Question Drawer. ❖

SPRAYING PLUM TREES WITH COPPER SOLUTIONS.

SIR,—I have about 150 old plum trees, and about 1000 young ones, five years planted. I am well versed in spraying with Paris Green. I divide a pound into six parts, and use one part in a 40 gallon barrel. I can spray 1000 trees per day. I would like to know something about spraying with copper solutions.

THOS. PLUNKET, *Meaford.*

According to Prof. Maynard, of Amherst, Mass., the plum curculio, the black knot and the rotting of the fruit, may all be overcome by treating with Bordeaux mixture and Paris green, at least, such was the result of his experience last year on the College grounds. The plum wart was prevented by it, and the few knots that gained a hold on the branches were destroyed by applying a kerosene paste. This paste is simply kerosene, with some dry pigment added to make it conspicuous. To be effectual this paste must be applied early in the season as soon as the knot begins to enlarge.

His treatment with copper solutions is the same as that described on page 102 for apple scab, viz. : applying sulphate of copper before leaves expand, then the combined Paris green and Bordeaux mixture until, say July 1st, after which either the latter or the ammoniacal carbonate of copper.

PROPAGATING ROSES BY LAYERS.

SIR,—Would you kindly give me some directions for propagating young plants from a climbing rose.

J. M. WELLS, *Pinkerton.*

The following reply from "Parsons' on the Rose," is submitted by Mr. W. C. Barry, of Rochester.

This mode is more particularly applicable to those roses that bloom only once in the year, and which do not strike freely from cuttings, although it can be equally well applied to all the smooth wooded kinds. It can be performed at midsummer and for several weeks afterward, and should be employed only in those cases where young shoots have been formed at least a foot long and are well matured. The soil should be well dug around the plant, forming a little raised bed of some three feet in diameter, with the soil well pulverized and mixed with some manure thoroughly decomposed, and, if heavy, a little sand. A hole should then be made in this bed about four inches deep, and the young matured shoot bent down into it, keeping the top of the shoot some three or four inches above the surface of the ground; the angle thus being found, which should always be made at a bud and about five or six inches from the top of the shoot, the operator should cut off all the leaves below the ground. A sharp knife should then be placed just below a bud, about three inches below

the surface of the ground, and a slanting cut made upward and lengthwise, about half through the branch, forming a sort of tongue from one to two inches long, on the back part of the shoot right opposite the bud ; a chip or some of the soil can be placed in the slit, to prevent it from closing, and the shoot can then be carefully laid in the hole, and pegged down at a point some two inches below the cut, keeping, at the same time, the top of the shoot some three or four inches out of the ground, and making it fast to a small stake to keep it upright. Care should be taken not to make the angle where the branch is pegged at the cut, as the branch would be injured and perhaps broken off ; the best place is about two inches below the incision. The soil can be replaced in the hole, and where it is convenient, covered with some moss or litter of any kind. This will protect the soil from the sun and keep it moist, and will materially aid the formation of new roots.

PLUMS AND SMALL FRUITS.

SIR,—I have bought me a small place, eighteen acres in extent, near the town of Norwich, which I propose to devote to the cultivation of fruit. It is an excellent piece of clay loam, and on it two acres of an old orchard, consisting of about forty trees. These I have trimmed and scraped, and shall tile drain the ground in the spring. How do you think plums and blackberries would do to fill up these two acres, or do you think currants and gooseberries would be better? The land has been in meadow for some years, but I have had it fall plowed and will give it a good dose of ashes in the spring.

J. A. TIDRY, *Norwich.*

Unless the old apple trees are of desirable varieties, it would be wiser to take them out root and branch, in order that the two acres might be planted wholly with plums, for no young trees will be able to make a good vigorous start in the shade of old apple trees. The same may be said of almost any of the small fruits. Plums ought to succeed well on such a soil as is described by our correspondent, but in our experience, blackberries do not succeed upon clay loam as well as upon sandy loam. We have found gooseberries and currants better adapted to clay loam than blackberries, indeed, the currant is much more productive upon heavy than upon light soil.

SALT FOR WIRE WORMS.

SIR,—Could you give me any information through the *CANADIAN HORTICULTURIST*, as to what amount of salt would be necessary to destroy wire worms in new land, without injuring other crops. The land was broken up last year, and my potatoes were badly eaten with them. I am told they are usually worse the second year. Please prescribe the dose, and oblige,

I. LANGSTROTH, *Seaforth, Ont.*

Reply by Prof. James of the Ontario Agricultural College.

1. The usual dose of common salt is about 300 lbs. per acre. It is very doubtful whether this would ensure the results desirable, though some benefit might result. I would advise increasing this amount by fifty per cent., but even

by this application complete success should not be always expected. 2. When the amount of salt rises to 0.1 % the land becomes sterile, this would require a dose of over one ton per acre, however, and is not likely to occur in ordinary farming. 3. The information regarding the use of common salt as an exterminator of insects, fungi, grubs and such pests, is limited and somewhat indefinite.

APPLES FOR MARKET.

SIR,—I intend planting 200 apple trees this spring on clay and gravel loam. Would you give me a list of the best kinds to grow for market, and would you advise planting any fall varieties? Would you recommend the Ohio Baldwin as a shipping apple, and is the Rhode Island Greening holding its own in the market?

H. BODWELL, *Mount Elgin, Ont.*

We have had no personal experience with the Ohio Baldwin, and would be glad to hear from any of our readers who have grown it. The old Rhode Island Greening is not only holding its own, but rather growing in value in our best markets, where its excellent quality for cooking purposes is becoming more fully known. The only difficulty with it is its inclination to spot, and, for this reason, some orchardists in the Niagara Peninsula condemn it. The Baldwin still stands No. 1 for the commercial orchard, and is one of the best known apples in the English market. The King of Tompkins heads the list for price, and would be a most desirable variety if it were only a better bearer. The Northern Spy and the Roxbury Russet must not be omitted. Among fall apples there is one which always commands a high price, both in the home and foreign markets, and that is the Gravenstein.

NEW GOOSEBERRIES.

SIR,—Could you give me any information where the King Conn gooseberry, and also the Crosby's Seedling could be secured? The latter was highly spoken of in a back number of the CANADIAN HORTICULTURIST, but I have not seen either of these varieties quoted in any nurseryman's catalogue.

W. H. PARKER, *Mimico, Ont.*

The King Conn is now known as the Autocrat, and is still in the hands of the introducer, Mr. P. E. Bucke, of Ottawa. It is a green gooseberry of good size and very productive, and not affected by the mildew. Whether it is really a new variety, or some old variety now likely to be brought prominently forward, we are unable to say.

The Crosby's Early is a large dark red seedling gooseberry, apparently of great value, samples of which were sent to us by Mr. Arthur Reeve, of Highland Creek. He said it was a seedling, grown by Mr. Crosby, of Markham; it is no doubt a seedling of some English variety, for it has lately shown some tendency to mildew, according to the habit of these kinds. So far as we know it has not been propagated.

VARIETIES OF PRUNES.

SIR,—Would you be so kind as to inform us whether the Italian prune, French prune, Prune d'Agen and Fellemburg are the same, or names of different varieties?

ALLAN BROS, *Winona, Ont.*

The Fellemburg is an Italian prune, and the Prune d'Agen is a French prune. The terms Italian, French and German prune are somewhat general, and may each include several varieties, having similar characteristics. For instance, there is a variety of the German prune grown at Collingwood, known as Baker's German Prune, which is counted by them the most profitable plum that can be grown in that district for market.

There is a prune known as the French prune or Petite prune, a good bearer and excellent for drying, but it is not of as good quality as the Prune d'Agen, and not as hardy. Mr. Felix Gillet, a famous plum grower of California, says of the latter: "This is the kind that produces the famous French prune, shipped all over the world from Bordeaux; it is the very variety cultivated in the great prune district of the Lot, with Agen for an entrepôt. It is of medium to large size, sometimes quite large; and generally pear-shaped, tapering toward the stem. Very productive." It must be grown on the plum root.

 THE MOUNTAIN BEET APPLE.

SIR,—I see in our HORTICULTURIST for the year 1878, page 50, Dr. Hoskins describes an apple called the Mountain Beet. Can you give any information about it? I have been looking for a report of it, but have never seen it spoken of since.

J. PEGG, *Kolafore.*

Reply by Dr. Hoskins, Newport, Vt.

Regarding the apple called Mountain Beet, I regard it simply as a curiosity in having a red flesh. It has no particular value otherwise, and like so many Quebec apples, it suffers greatly from the spot fungus.

 PEARS FOR THE NORTH.

SIR,—Will you please tell us through the HORTICULTURIST, what would be the two best kinds of pears for this section of country?

L. PASCHE, *Bryson, Que.*

Among our first quality pears, there is perhaps none, more often commended for northern sections, than the Flemish Beauty, for, although worthless in southern Ontario, on account of the scab, it is one of the best at the north. The late Charles Gibb recommended it for the Province of Quebec, and, in addition, the following three: Clapp's Favorite, Oswego Beurré and St. Ghislain.

THE RUSSIAN MULBERRY.

SIR,—Would you please give your opinion as to the hardiness of the Russian Mulberry, and the quality of its fruit?

P., Grenville, N. S.

Reply by Prof. Budd, of Ames, Iowa.

I do not regard the Russian Mulberry valuable for either fruit or timber. Our Horticultural Societies have voted that it was good for a prairie windbreak in the part south of 42nd parallel, and to feed the birds. This about tells the story. In Russia the foresters laughed when Mr. Gibb asked about the value of the mulberry for timber. They called it a bushy shrub of large size. Our Native Red (*morus rubra*) is far more valuable for any use.

SOIL FOR CHESNUT TREES.

SIR,—My soil here is a heavy clay; do you think the Japan chesnut would succeed any better in such soil than the American variety? I have planted the latter twice and they will not grow. I have also tried the Japan chesnut, but without success. If you think there is any hope of it, I would like to give it another trial.

WM. TURNBULL, *Brewster, Ont.*

The chesnut tree flourishes best in sandy soil; indeed, the natural growth of this timber is usually found on sandy knolls, and we think it very questionable whether it would ever amount to anything upon heavy clay.

DEMPSEY PEAR.

SIR,—Is there any progress being made in the proposed line of distributing the Dempsey pear?

N. BURPEE, *Marysville, N. B.*

We understand that this pear has been purchased by Messrs. Stone & Wellington, of the Fonthill Nurseries, and will shortly be placed upon the market. It is thought by those who have seen it and tested its quality, that it will take a high rank among our valuable varieties of pears. It is a cross between the Bartlett and the Duchess, and has many of the characteristics of each.

GRAFTING THE PEACH.

SIR,—I wish to know if any of your readers have successfully grafted the peach. If so, I would like to have some information on the subject.

JOHN KILLAM, *North Kingston, N.S.*

The peach tree cannot be top-grafted with success. It is propagated by budding, some account of which is given in another part of this number.

SPREADING MANURE.

SIR,—Will you please tell me if it is a good plan to spread well rotted manure in the trenches that are prepared for grape vines and raspberry plants? W. M. M.

Fertilizers of all kinds will have much better effect upon the vines and plants if they are thoroughly incorporated with the soil in which the roots are to grow, than if placed along in the trenches themselves, in direct contact with the plants.

PRUNING EVERGREENS.

SIR,—When is the proper time for pruning evergreens?

JOHN A. TIDEY, *Norwich.*

Evergreens may be clipped at almost any season of the year, but they will be the least checked in vigor by pruning them in the month of June, just as the new growth is pushing out.

RUSSIAN MULBERRY.

SIR,—What kind of fruit can be grafted on the Russian Mulberry? I ask the question because it is a useless tree for fruit bearing.

W. M. DOWN, *Stratford, Ont.*

Can any of our readers answer this question?

* Open Letters. *

FILBERT GROWING IN ONTARIO.

SIR,—I can add little to what I have said already, regarding my Kentish Cob nut trees. My trees are about twelve feet apart in the row and they interlap, making quite a wind-break; like the wild Hazel, they are inclined to *spread*. I judge fifteen feet would be about the proper distance. I mentioned the twelve trees average from two to three gallons a year, and I have had as high as eight or nine. All trees from nuts I ever planted have fruited more or less, and they begin bearing in four or five years. This Kent nut, you see, has a thicker shell than the filbert, and is more like the common hazel. The Filbert, from what I hear from the States, are short-lived and very shy bearers; and one account I read of them accounted for their poor bearing, from the blossoms not being properly fertilized. A tree by *itself* I cut down because of its poor bearing.

Never having had enough for market purposes, I cannot judge of the price. In the old country, fresh nuts with their *hull on*, sold from ten to fifteen cents per pound. I now have between 200 and 300 one and two-year-old trees, intending to plant an acre; but as land is scarce with me and more valuable for *grape* purposes, I will dispose of part, say, 150, if any of your neighbors or friends desire them for experiment. I would take \$20 per hundred. I have a row of twenty trees, planted four years ago, which I expect to begin bearing next year. I noticed a nut or two on one this fall. The nuts are all shapes and sizes, but with attention and selection, one may expect to improve them in quality, etc. I have never grafted or budded any. They *will* sprout out from the bottom, and I expect a single trunk would be hard to manage.



KENTISH COB NUT.

E. WARDROPER, *Pelee Island.*

We notice very valuable comments on the prospects of filbert growing in the United States, by Mr. W. D. VanDeman, United States Pomologist, in an address read before the Massachusetts Horticultural Society. He says that, so far, these have not been grown in the United States; but there is a great demand for them in our markets, where every pint exposed for sale is imported from the Old Country. He says that he is making it a special point to import the Kentish filbert from England, in order to have it tested in the United States, and he seems very confident of success.

PRICKLY COMFREY.

SIR,—I think you would be conferring a great benefit on your readers by directing their attention to the most productive of all forage plants, Prickly Comfrey.

Mr. Kinard B. Edwards, of Leicestershire, England, a well known authority on farming matters, thus writes of it; "It affords a cutting earlier and later than almost any other plant. If cultivated upon good deep soil it will yield a heavier crop than any other plant, and when once planted it will last forever. It is very hardy. The first year as much as 20 tons to the acre may be obtained, the second year 50, and every year after 80 to 100 tons. Few crops will be found so useful or more easily cultivated."

The writer has known 3 horses and 3 cows fed in the stable from early summer to late autumn entirely upon the produce of an acre of it the second year after planting, and the horses were in splendid condition and the cows yielding more milk and of better quality than if they were on ordinary pasture. From personal experiment I find our climate here suits it well. It is the first thing to show up green in the spring and goes on growing till late autumn yielding 5 or 6 cuttings. It is grown from crowns or root cuttings and a start may be made with a few, as every spring till your plantation is as large as you require; the roots may be raised and divided into about 12 parts and 12 times the area of ground planted. We started here with 20 root cuttings and hope this spring to have about half an acre planted. As a change from winter feed, horses, cows and weaned calves eat it with avidity in the stable and barn yard, but if turned out to pasture first, they do not care so much for it afterwards, so it is especially adapted for farmers' use for early feeding in the stable and enabling them to give the pasture fields a good start before turning cattle out in the spring, and for those who living in towns and villages keep a horse or cow with only a small plot of land, from which they would like to procure the greatest possible amount of feed. From the 15th to 25th April is the best time for planting Prickly Comfrey.

The land to be planted with Prickly Comfrey should, if practicable, be ploughed in the fall, and as soon as you can work it in the spring, harrow it down, and plough furrows from end to end a yard apart; then in the bottom of the furrows, at intervals of a yard, put a small shovelful of rotten manure; cut the Prickly Comfrey roots into pieces, each having one crown or more, and in the centre of each shovelful of manure place one of these root cuttings so that the top of it will be about 2 inches under ground when the earth is levelled; with a rake or hoe pull the earth back again into the furrows, leaving the ground level. In a few weeks the plants will push through a yard apart every way. As soon as they are grown sufficiently to show their whereabouts distinctly, cultivate between the rows both ways to keep the weeds down, and repeat this as requisite during the season. The plants should be cut at about 3 inches from the ground for green fodder when they attain the height of 2 or 3 feet and before the blossom opens. In about a month or six weeks, according to the weather, a second cutting may be obtained, and so on through the summer and autumn, the growth being so rapid that the new growth of plants cut one day is quite distinguishable from that of the next preceding and succeeding day's cuttings. The plantation should every year be treated to a dressing of short manure. If preferred, instead of ploughing furrows, holes may be dug a yard apart and the planting, be proceeded with as before directed. The middle of April is the best time for planting.

N. B.—For convenience the plantation should be as near the stable as possible.

ARTHUR GEO. HEAVEN, *Boyne, Halton Co.*

FRUIT IN QUEBEC.

SIR,—I send you a bit of report from Bryson, Que., situated a little over 45½ degrees north latitude :

Apples.—Nearly all my surviving trees being yet too young to bear, I had only three varieties of big apples last season, viz., the Wealthy, the Peach, and the Yellow Transparent. These are early and splendid fruits, and were sold in the village at retail for two cents each for the largest, so there would be money if we had plenty of them here. I saw no better specimens of these kinds at the Ottawa Exhibition.

I had a large crop of three varieties of crabs : Transcendent, Lady Elgin, and Hyslop. These last, if carefully gathered before too ripe, keep well.

Grapes.—I had six kinds of grapes pretty well ripened before the great frost of the 24th of December. I will name them in the order in which they ripened : Wyoming Red and Champion at the same time ; Moore's Early and Dracut Amber ; Lindley and Delaware. For the north I would strongly recommend the Wyoming. When visiting the Experimental Farm at Ottawa, on Dec. 22nd, I was surprised to see the same varieties there not quite so ripe as mine, though the leaves were far less injured by the frost.

Small Fruits.—Currants were a fair crop with me, but gooseberries were nearly a total failure, on account of the berries dropping. Raspberries were a poor crop, with the exception of the Golden Queen, which is truly a queen over all the others.

L. PASCHE, *Bryson, Que.*

EARLY VICTOR GRAPE.

SIR,—I have taken the CANADIAN HORTICULTURIST ever since 1886, and have read it with the greatest interest. I notice letters written from amateur gardeners concerning plants which they have received as premiums. The first plant that I received was in 1886, when I received a grape vine, called the Early Victor. I took six bunches of the grapes from the vine and showed them at our last fair, and they took the second prize. I took about one hundred pounds from the one vine. I could give you a good account of the various gooseberries, currants, and other small vines and trees received, if it would be of any use to your readers.

WM. WORTH, *St. Thomas.*

FRUIT IN HURON COUNTY.

SIR,—The season of 1890 has been a fine one for fruit in this county, except where apple insects have prevented. Raspberries and strawberries have suffered most, the latter, especially, not succeeding as well as a few years ago. The Jessie does not fruit well, and I lost the Bubach plants which you sent me, probably through applying hen manure to the soil. My neighbor, Mr. Stewart, lost quite a number of strawberry plants by an over-application of ashes and salt to the soil before planting. Gooseberries and currants, cherries and plums, have done well. Some varieties of apple trees have been laden with fruit.

It would be very interesting to have in the HORTICULTURIST more letters from members of the Association, giving their experience in fruit growing.

SAMUEL FEAR, *Brussels, Ont.*

» Our Book Table. «

CATALOGUES.

FRUIT TREES, PLANTS AND VINES. Annual Catalogue, Helderleigh Farms Nursery, Winona, Ont. E. D. Smith, proprietor.

SMALL FRUIT PLANTS. Annual Catalogue, Allyn Bros.' Nurseries, Palmyra, Wagne Co., N. Y.

FERTILIZERS. Dominion Fertilizer and Casing Works 1891, Animal and Bone Fertilizers, 255 James St. North, Hamilton, Ont.