

Technical and Bibliographic Notes / Notes techniques et bibliographiques

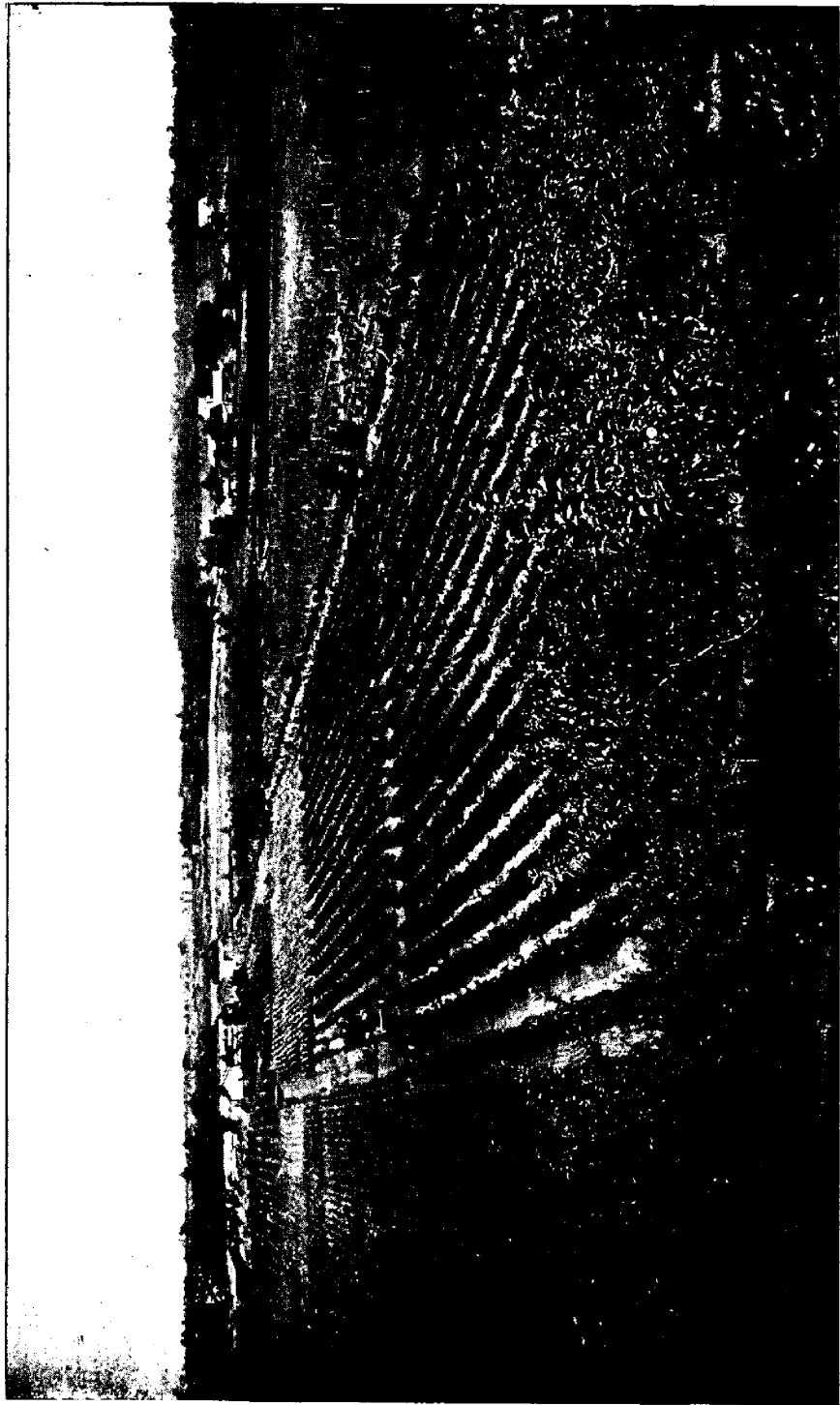
Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

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 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.

- 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.

- Additional comments /
Commentaires supplémentaires:
- Continuous pagination.



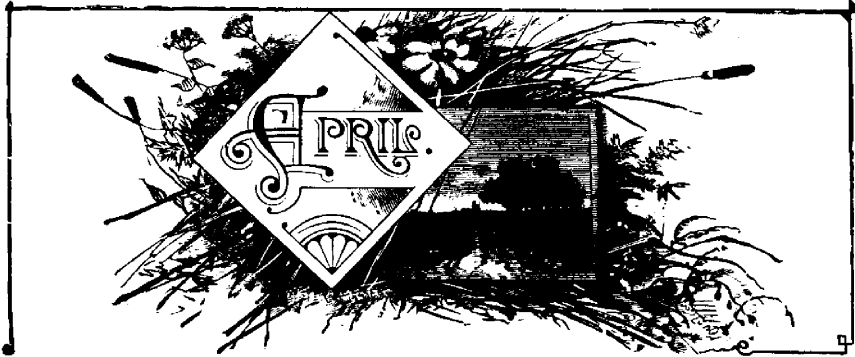
W. M. ORR'S FRUIT FARM, "FRUITLAND," BETWEEN GRIMSBY AND HAMILTON.

THE
Canadian Horticulturist

VOL. XIX.

1896.

No. 4.



PROMINENT CANADIAN HORTICULTURISTS.—XXV.

W. M. ORR, Fruitland.

TWENTY years ago, Mr. W. M. Orr was engaged in successful commercial life. His duties had been such as to lead him to visit many parts of Ontario, Quebec and the Eastern Provinces; and he had improved his opportunities to note the most favorable localities. Passing frequently through the Niagara Peninsula, he was so enamoured with its beauty of situation and its productive fruit farms, that he resolved to make a total change in his life work, and settle down on a farm in this famous fruit region, at a place now known as "Fruitland." The farm of ninety acres in extent, protected from frost by the mountain on the south side, and the ameliorating influence of the water on the north, is favorably located for the growth of tender plants.

When Mr. Orr began to plant fruit, his friends predicted failure. What could he do with a fruit farm, having no experience? But he did not fail. He gradually extended his plantations of fruit. A small vineyard, then ten years planted, was soon enlarged to cover fourteen acres of ground, and included the following varieties: Champion, Niagara, Vergennes, Concord, Rogers 3, 9, and 22, Worden and Delaware. These varieties have all been profitable, but if compared in this respect, they would stand about in the order named. This has been his experience, yet he would not advise others to plant Champions. The Niagara has been a favorite variety with him, and he has planted one-third of his whole vineyard to that variety. The Vergennes keeps so well that he

ranks it highly for profit. He keeps this variety in perfect condition until grapes come in again; packing the fruit in cork dust, and storing in a dry cool cellar.

The Rogers' grapes he holds for a late fall market, and ships them on orders, because they always give the consumer such excellent satisfaction. The average yield from his vineyard Mr. Orr places at about three tons, and this he considers quite enough for an annual yield of the vines. Grapes have been grown on this farm for thirty years, and have never failed to yield a crop from the effects of frost, or from any other cause.

Plums have also been a favorite fruit for profit with Mr. Orr. His orchard comprises about 1,400 trees, nearly half of which were planted twelve years ago.



FIG: 926.—W. M. ORR, ESQ.

The principal varieties are Lombard, Bradshaw, Quackenbos, Pond's Seedling, Washington, Reine Claude and St. Lawrence, and these he considers a good selection for profit. The largest yields have been from the Lombard, but as a rule he has had regular crops from all, partly as a result of regular and per-

sistent spraying with Paris green and Bordeaux mixture. The fruit from one tree of Reine Claude yielded him a gross amount of \$10.80 during the past season.

While highly prizing the apple, and believing that it is destined to become a still more important source of revenue to Ontario fruit growers than it has in the past, he does not consider them as profitable in his section as other fruits, and therefore has taken out the greater part of his orchard of apple trees.

Of pears the principal varieties planted are Bartlett and Kieffer. Clapp's Favorite blights badly with him, and Flemish Beauty suffers considerably from scab. Of peaches he has about 800 trees, and of cherries about 200.

Mr. Orr has found black currants profitable, and has planted about 1,500 bushes, principally Black Naples. Ninety bushes planted in 1884, has for some years past yielded him a gross average income of from \$22.00 to \$26.00 per year; they usually sell for \$1.00 per basket, and he pays his pickers about 25c. per basket.

Our frontispiece is a fine photogravure of Mr. Orr's fruit farm, taken from "The Mountain" which borders the south end. From the old Laurentian rocks which underly this district, he has named it "The Laurentian Fruit Farm," and this naming of places is becoming popular with many fruit growers.

Mr. Orr is one of the directors of the Fruit Growers' Association of Ontario, and was Assistant Superintendent of the Ontario Fruit Exhibit at Chicago in 1893, where he obtained three diplomas and medals, two on grain, and one on fruit. He also received from the board of lady managers, a beautifully engrossed diploma, together with a congratulatory letter from the chairman of the committee, with regard to the excellence of his services rendered in connection with the Ontario Fruit Exhibit.

We have thus given prominence to another successful fruit grower, believing that the success which has attended his enterprising spirit, may encourage others whose hopes may have become somewhat blighted by the discouragements of the past few seasons.

Pears and Apples in Montreal.—The first receipts of Anjou pears were received this week, and are selling at from \$5 to \$7 per bushel box. Fresh supplies of tomatoes have been received, and are bringing \$4 to \$4.50 per carrier. First receipts of Havana potatoes arrived this week, and are selling at \$8 per bbl.

Farmers are still bringing in heavy supplies of potatoes from the surrounding districts, and are selling them in any quantity at 30c. per bag, while jobbers are asking 40c. per bag by the load, and 45c. in jobbing lots.

Apples	\$2.00 to \$2.75 per bbl.
" Fancy	\$3.50 to \$4.00 per bbl.
" Famuese	\$2.50 to \$4.00.
" Dried35-8c. to 4c. per lb.
" Evaporated6c. to 7c. per lb.

—Montreal Trade Bulletin, Feb. 96.

THE BEN DAVIS APPLE.



SEND you by this mail a sample of Ben Davis Apple as grown in Simcoe. The apple is a small specimen but you will be able to pronounce upon its flavor. Now, that this variety has got into condition, which it is always late in doing, hence its superb keeping quality, it is in my opinion a very good apple, quite as good as the Baldwin. Some persons here who were prejudiced against this variety and who have lately tasted it for the first time in condition, could hardly credit the evidence of their senses, and declared it to be as good as the Spy.

During the fall and early winter this apple is certainly not eatable, and for that matter neither is the Spy and some others of our best keepers, and this the English, American, and even the Canadian consumer knows, as its price through a period of years testifies. This preference cannot all be attributed to color, as the Baldwin is a beautifully colored apple.

A great many of the people here who have the notion that the Ben Davis is a very poor apple don't grow it themselves and their opinion of it has been formed from hearsay.

We must not forget that the public got its first impressions of this apple from those grown in Kansas and the adjacent States; which, if they do grow very large apples, have never been noted for the superior quality of their apples.

Farmers here are waking up to the possibilities of apple growing and some two thousand or more will be set out in the spring within a radius of three miles.

We have three varieties which have been pretty thoroughly tested here and found to possess the requisite qualities for the commercial orchard, these are the Ben Davis, Pewaukee and Ontario. What are considered the essential qualities of a variety for this purpose are given below in the order of their importance: 1, Productiveness; 2, early bearing; 3, hardiness; 4, good solid trunk with good foliage; 5, shipping qualities; 6, shape and color; 7, quality.

Nantyre.

S. SPILLETT.

NOTE BY THE EDITOR.—We cannot agree with our correspondent in placing quality last in order of importance for a market apple. On the other hand we would place it at the very beginning of the list of essential qualities. That the specimen of Ben Davis sent us on the 20th of February by Mr. Spillett, is equal in quality to the Baldwin is not saying a great deal; for the Baldwin is not an apple of high quality. Both these apples at the present time stand among the most profitable of apples, just as Mr. Spillett says, on account of the color and productiveness; but in the near future when apples are ten times as plentiful in our market, quality will surely command the top prices. If then a first class apple, with quality equal to King or Spy, can be originated, which is also healthy, hardy and productive, that will be the apple to recommend to planters.

SEEDLING APPLES EXAMINED DURING 1895



DURING the past season a large number of seedling apples and other fruits of greater or less merit have been received at this office. It is always gratifying to feel that growers take an interest in this work and realize the efforts which this Department is making towards the improvement of our present list of commercial fruits to such an extent as to forward these new and untried varieties for examination.

Many of the samples received, however, have not been of sufficient value to warrant a detailed description. They have in each case been acknowledged, and a brief record entered upon the books of this Division. Among the most prominent apples received the following varieties are noted:—

From A. McD. Allan, Goderich, Ont.

Breckenridge.—Description: In a general way this apple resembles Northern Spy; but perhaps less regular in form; size medium to large; form, approaching oblong, ribbing very obscure, sometimes wanting; skin, yellowish green, thick and tough, partly covered with stripes and splashes of red. Stem slender. Cavity deep and broad, calyx open; basin shallow, almost wanting. Flesh white, flaky, juicy, sub-acid with a distinct Northern Spy flavor; promising and worthy of further trial. Mr. Allan says: "Grown by John Breckenridge here (Goderich); it is a greater bearer, long keeper and, towards spring, is of excellent quality."

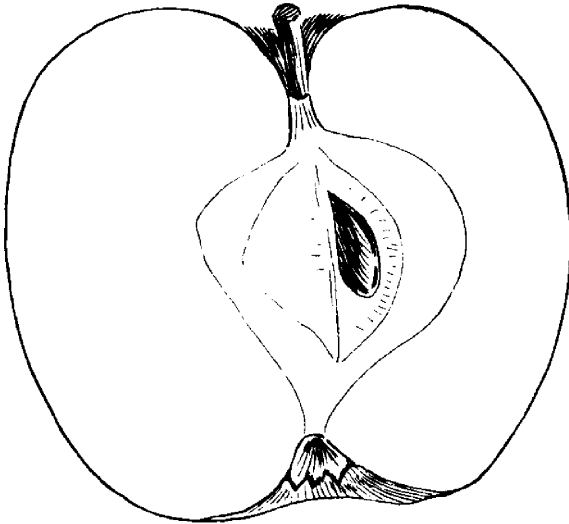


FIG. 927.—SECTION OF BRECKENRIDGE APPLE.

Jordan.—Russet type; medium size, by measurement eight and three quarters in circumference by two and a half inches in length; form regular, roundish oval. Skin, greenish yellow, thinly covered with light russet, which is laid on in light patches varying in density and sparsely sprinkled with gray dots. Stem three quarters of an inch long, moderately stout. Cavity varies from broad and shallow to deep narrow and lipped. Calyx prominent and closed, occasionally open, however, with broad segments. Basin shallow, smooth. Flesh a greenish yellow, fine grained, breaking, moderately juicy, mild sub-acid, rich, pleasant and of good quality. Season, late winter. This variety is also worthy of attention. Mr. Allan says that this is grown by F. Jordan, of Goderich, that it is of fine quality when ripe; and that it will easily keep till June.

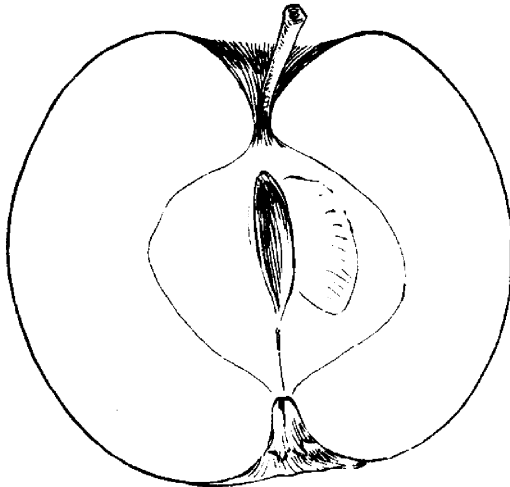


FIG. 928.—SECTION OF JORDAN APPLE.

From FRANKLIN CRANDELL, Lindsay, Ont.

Empress.—Seedling apple. Mr. Crandell says, that the tree appeared on the spot where a Baldwin was once growing “it is now 15 years old, has been in bearing 10 years, bears every year. In 1894 the crop was three barrels; in 1895 it was seven barrels. It is a free grower and extremely hardy.” Description: Fruit above medium size, varying from ten to eleven inches in circumference. Form oblate, flattened at both ends. Skin greenish yellow, with a solid carmine blush where exposed, splashed with deeper shade, and thickly sprinkled with minute, dark brown specks, margined with green. Stalk very short and stout. Cavity broad, of moderate depth, slightly russeted around the base of the stalk, outline irregular with a slight lip. Calyx open, segments broad and short. Basin broad and deep, not wrinkled but somewhat irregular and precipitate. Flesh nearly white, almost fine grain, mild sub-acid, juicy, pleasant flavor, quality very good. Core small.

From JOHN MILLER, Markham, Ont.

Seedling Apple.—Mr. Miller says the tree is 40 years old and was growing on the farm when he came into possession of it 28 years ago. It is healthy and a regular bearer. Description: Medium size; form roundish oblate. Skin smooth, yellow, red on one side, and splashed all over with bright red. Stem very short moderately thick. Cavity deep, narrow, smooth, lightly russetted. Calyx closed, segments broad and short. Basin shallow and uneven. Flesh greenish white, fine grained, juicy, mild sub-acid, pleasant in flavor and good in quality. Core of medium size, seed very plump. Season, December to January. An attractive apple, no better in quality perhaps than others of the same season now in cultivation, but yet one which may prove valuable in some sections on account of the reported hardiness and productiveness of the tree.

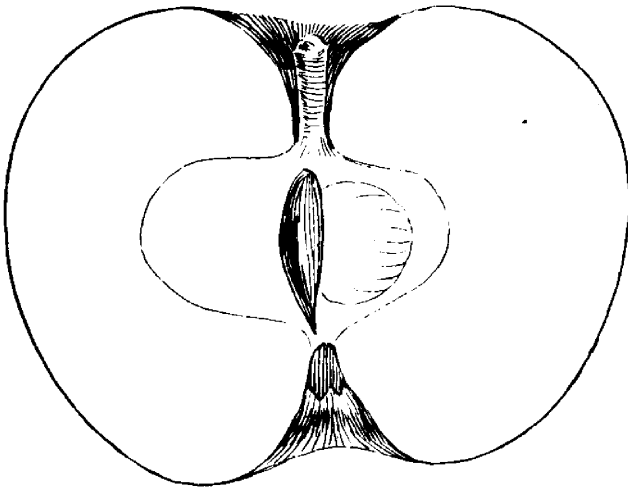


FIG. 929.—SECTION OF EMPRESS APPLE.

From HAROLD JONES, Maitland, Ont.

Crimson Beauty.—This apple was exhibited by Mr. Jones at the meeting of the Ontario Fruit Growers' Association at Woodstock last December, who reported it as having been cultivated in the vicinity of Brockville for a number of years past where it is highly prized. Description: Medium size, oblate, regular. Skin smooth, shiny, covered with bright red to dark crimson, interspersed with large dots. Cavity, broad, open, slightly russetted. Stem three-quarters of an inch long, moderately stout; basin slightly irregular. Eye open. Flesh, white, firm, juicy, mildly sub-acid. Fameuse-like flavor, with a slight suggestion of astringency. Season, December to January. A handsome apple of good quality.

I trust that owners of promising seedling apples will be good enough to send samples by mail to this office so that they may be described, figured and recorded by the committee appointed for that purpose by the Association.

Experimental Farm, Ottawa.

JOHN CRAIG.

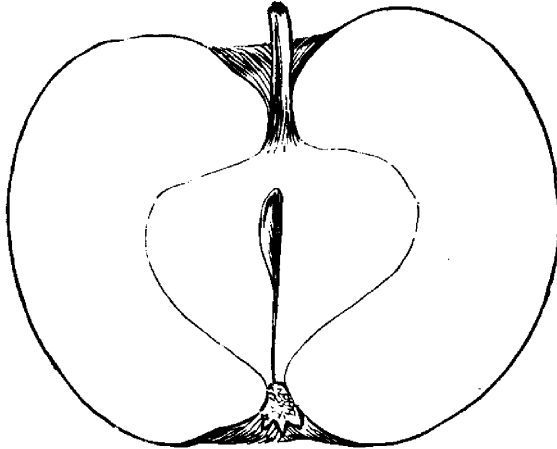


FIG. 930.—SECTION OF CRIMSON BEAUTY APPLE.

Land for the Blackberry.—The best blackberry land is a deep, mellow, clay loam; that is, a soil of which the body is clay,—and which, originally, might have been very hard,—but which contains considerable humus and crumbles rather than bakes in the furrow. Loose, gravelly lands are too deficient in water for the blackberry. It is very important to plow all hard lands deep and to fit them with much care before setting the plants, for, if the plants are to escape the effects of droughts, the roots must go deep and there must be a liberal reservoir for water upon the foundation or hard-pan. Flat lands with high subsoil should always be tile drained before blackberries are set upon them, else the bushes will generally suffer in winter, and the fruit is also more liable to injury from mid-summer droughts. It is generally best to set blackberries in the spring, and strong yearling plants are commonly used. One may use the suckers which spring up about blackberry bushes for setting, or he may grow them from root cuttings.—Cornell B. 99.

The Mersereau Blackberry.—A variety resembling the Snider, and derived from it, but not yet generally disseminated. Its advantages over Snider are its larger size, less tendency to turn red after being picked, better quality, and a stronger habit of perfecting some of its fruits as late as the first of September. Its ordinary season is that of the Snider. This variety originated with J. M. Mersereau, Cayuga, New York, for whom I am glad to name it.

CAUSES OF FAILURE IN APPLE CULTURE.—II.

AN ADDRESS BY THE SECRETARY.

4. Bad Pruning.



IN his mistaken zeal for promoting the vigor of his apple orchard, many a farmer does it irreparable injury. The great stumps of large limbs, eating their way with rottenness into the interior, bear witness to the truth of my statement. I wholly condemn the common method of butchering apple trees.

On Maplehurst Fruit Farm, my oldest orchard, though over seventy-five years of age, would be in prime condition for another twenty-five years only for this practice.

Indeed those trees which, on account of inferiority of kind, were most neglected by the pruner, are now the healthiest and finest in the orchard; while the others are rotten at heart, or hollow, from the great wounds made in pruning.

Many people always insist on removing the leading centre branch, to let in the sun as they say. We wholly object to this system, and would commend somewhat of the pyramidal form, as the ideal for the pruner. This is produced by encouraging the growth of a strong, leading shoot, about which all others are allowed to grow as symmetrically as possible. The annual pruning will then consist simply in thinning out all superfluous small branches which tend to cross each other.

Probably there is no subject upon which more confused notions exist than with regard to the time and manner of pruning trees and vines. Some who pretend to know give such definite advice as, "Prune when your knife is sharp," and others advocate no pruning at all. Some say prune in the winter, some in summer, and others in the fall. In the multiplicity and contrariety of the advice, who wonders that we see so many slovenly kept trees throughout our country?

First, with regard to the TIME of pruning. We have under this head a very old adage, which it is well to remember, viz.: "Prune in winter for wood, in summer for fruit," and probably no better general rule could be given. The philosophy of this is explained by the fact that anything which checks the wood growth of the tree, tends to the metamorphosis of leaf-buds into fruit-buds; and, on the contrary, that which favors wood growth, lessens that tendency. Thus while a tree is young and growing rapidly, it produces no fruit; but when it has attained a certain degree of maturity, and grows less vigorously, it begins to produce fruit. On the same principle it is that a tree that has been girdled will often be overloaded with blossoms, though not yet of the usual bearing age, or limbs which are artificially bent down will yield fruit before the other limbs of the same tree. Now, summer pruning checks the growth of the tree, and therefore tends to increase its fruitfulness. By it we remove the foliage just when it

is in active operation, taking in from the atmosphere carbon, and otherwise transforming the crude sap into a suitable liquid for building up the cellular tissues of the tree. To a limited extent this may be done in safety, but if done too freely the tree will be some time in recovering its strength.

On the other hand, early spring pruning, being done when the tree is dormant, does not affect the vigor of the tree so much, and consequently strong growth results in order to maintain the equilibrium between the roots and the branches.

In favor of the summer time, it is urged that wounds made then heal more readily than when made in winter. This is true, for the growth at that time begins to cover the wounds while they are yet fresh; but perfect healing will also follow the winter pruning, provided the wound is properly protected from the air by paint or varnish.

To a limited extent, then, summer pruning is advisable, especially where trees are growing thriftily, and need a check to induce fruitfulness; and the proper time for it is when the first growth is completed, and the terminal bud formed, for by that time the cambium is sufficiently matured to perform nature's cure of the wounded portions. Generally speaking, this period is from the middle of June until the middle of July.

Winter pruning is generally adopted because it is the season of the greatest leisure, and the naked limbs enable the operator to judge best which should be removed; but the term is misleading, for it must never be done when the wood is frozen, and hence either the fall, the early spring, or only the mild days of winter, are at all suitable.

Another caution must here be given, and that is, never to prune in spring after the buds begin to swell and the first growth is pushing, for the sap, being active and not yet sufficiently matured for healing the cut, will leak, and this so-called "bleeding" will continue perhaps for a long time.

So much concerning the time of pruning; now concerning the MANNER. We wholly condemn the common custom of neglecting to prune until the limbs are very large, or cutting them out in such a way as to leave a stump sticking out from the trunk. We copy from the *American Garden* an illustration, Fig. 931, showing the evil effects of such faulty pruning, where the dead stubs are gradually introducing decay into the heart of the tree, soon to cause a hollow trunk, and early death; and Fig. 932, where at *d* a limb has been lopped off closely, and so healed that the scar is scarcely observable; while at *e* some have been removed in such a way as to leave open basins almost beyond the power of nature to heal. Large limbs should never be removed, if possible to avoid it, but, if necessary, they should immediately be covered with some pre-

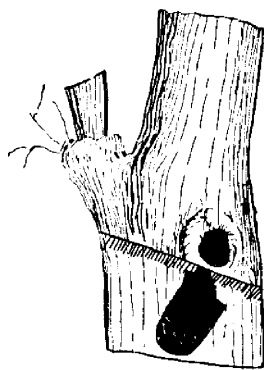


FIG. 931.

paration which will exclude the air. For this purpose various preparations have been recommended, as a coating of thick paint, or of coal tar of such a consistency that it may be applied with a brush. Mr. Downing recommends the following composition, viz. : Take a quart of alcohol and dissolve in it as much green shellac as will make a liquid of the consistency of paint. Apply with brush. Keep it in a well corked bottle, sufficiently wide-mouthed to admit the brush, and it will always be ready for use.

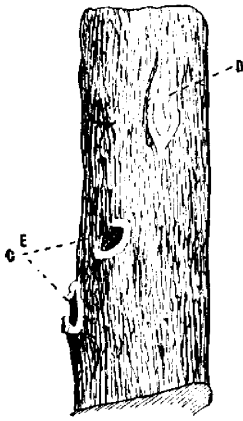


FIG. 932.

Neither do we believe in removing the large limbs in the centre of the tree to let in the sunlight. The right and the wrong ideal of the form the pruner should have in mind when at his work are well shown in Figs. 933 and 934, in the first of which the limbs have been removed according to the reckless butchery so often performed upon our helpless apple orchards, and which is one cause of the decrepit, half-dead appearance such orchards usually present.

The second represents a tree which has been allowed to grow according to its natural inclination, and the pruning has been simply an annual thinning of such small branches as threaten to cross others, or thicken the head too closely, and in this way the removal of large limbs is altogether avoided. Such a tree will live in health and vigor to almost twice the age of the former. The pruner should study the natural growth of the tree and prune to favor that ; thus the Spy and the Rambo are upright growers, and with them one leading branch should be encouraged in the centre, and side branches at suitable intervals. The Greening and the Roxbury Russet have spreading heads, and hence should have several main branches so trained as not to interfere with each other.



FIG. 933.



FIG. 934.

But of all barbarisms, that of cutting out the leading branches in the centre of a tree, should be avoided, for numerous sprouts will spring up, decay will ensue from the large wound, and, worse than all, the tree will in time be apt to split apart when heavily laden with fruit.

LOSSES IN THE EXPORT APPLE TRADE.



THE cost of production of any article of commerce generally governs the price which the consumer pays for that article. There is one notable exception to this rule. The price paid for the production of the finest winter apples in this country, has no apparent relation to the price paid by the consumers of the fruit in Great Britain.

Canada is noted for producing the best winter apples placed on the British market. The prices obtained for such fruit on the wharves or docks in Great Britain has varied but little for several years past from an average of \$5 per bbl., and there is good cause for believing that the demand, even at this price, will continue for a long time to come, and for an unlimited quantity. Now, if we allow \$1.50 per bbl. for freight and incidental expenses, we have \$3.50 left as the amount received by the middleman for his apples. From this we should deduct about \$1.25 per barrel as the first cost of the apples; the remainder, about \$2.25 is the net profit on each \$1.25 paid the apple grower.

It will be observed that I have mentioned three parties to this transaction; the producer, the middleman, and the consumer. (The word "consumer" in this case applies only to the purchaser of the apples on the English docks.) And it will also be observed that the profit made by the middleman is (apparently) about \$2 25 per barrel. Now, if this profit was really assured, there would very soon be such competition in the business that apple growers would receive double the amount per barrel now paid for them. But these middlemen assure us that the business is of such an uncertain character that but little profit is made, taking one year with another. Yet the fact remains that the margin between the price paid to the grower and the price at which the fruit is sold after deducting all necessary expenses, is too wide for a reasonable profit, but, as we are assured, by independent and undoubted evidence, that the business, as now conducted, is one of unusual risk, and that not more than a fair profit is made by apple exporters, it becomes evident that a serious leak must somewhere occur. This leakage should be a subject for careful enquiry by experts or those having practical experience in the export business.

Many causes may contribute to this great loss of more than the present value to the producer of the crop every year, such as, improper handling of the fruit in the orchard while being gathered, barreling too soon or too late, packing too tightly or not sufficiently tight; not kept sufficiently cool after being gathered or in transit; rough handling during transshipment *en route*; being frozen or subjected to great changes in temperature; rough or improper handling when being re-packed before shipping, and many other preventable causes of which I may have no knowledge.

A short time ago, when looking over a sale sheet issued by Woodall & Co.,

of Liverpool, my attention was arrested by the great difference in the prices obtained for different parts of the same shipment of fruit, and for the same variety. These ranged from $4/9$ to $22/3$ per barrel. This great difference in price was because of the difference in the *condition* in which the fruit arrived at the market, not in the *inequality* of the fruit. The lot was all of the same quality but of several different varieties, and all must have been of excellent quality originally, or the portion that was in good condition would not have sold for $23/3$ per barrel. I therefore determined to examine this and several other sheets critically. The following are the conclusions arrived at:—

First—That individual shipments to Great Britain, containing the same varieties, are equal in quality, and would sell at the same price if placed on the docks in the same condition.

Second—That the varying conditions of the fruit on its arrival at the docks was owing to some defect in packing, injury in transit or other means unknown to me.

Third—The *condition*—not the quality—of each variety was classified under several headings.

Fourth—That all quantities arriving in first class condition, without regard to variety, were tested under the first heading, those that were slightly injured under the second. Those more injured, under the third, and so on down to the worst.

Fifth—That those arriving in first-class condition amounted to only 23 per cent. of the whole.

Sixth—That the price obtained for the remaining grades combined—about 77 per cent. of the whole—averaged about $4/6$ per barrel less than the first grade.

Now, if every shipment of apples sent from Canada arrived in Great Britain in like condition, it follows that the loss when spread over the shipments for the whole season, is equal to 77 cents on every barrel exported. This certainly accounts for a large portion of the original loss of \$2.25 per barrel before referred to. I fail to see any necessity for this loss, but I must leave the full solution of this problem to those having practical experience in that line.

It may be, and probably will be said, that this loss is unpreventable; to such a statement the answer is, that when the same rule is applied to the shipments of apples from Boston and New York, as reported in the same sheets, it is found that the loss is only about 24 per cent. Surely a Canadian should be able to prepare and pack a barrel of apples as well as a Yankee. But judging by these English sale sheets, he is a long way behind in his ability to handle apples profitably. Doubtless this is the reason why shippers pay the growers a much better price per barrel in New York State than here, notwithstanding that their apples are inferior to ours in quality; their barrels smaller, and that they obtain for the same varieties a lower price in the English markets

The loss sustained every season by Canada (mostly by Ontario), in this branch of industry, is very large. I have no means at hand wherewith I may compute the total, but some idea may be obtained by applying the average loss per barrel to the shipments from Montreal for one week ending November 7th, which amounted to 27,126 barrels. The preventable loss on this lot would be \$21,000, while the loss on the same quantity if shipped from Boston or New York, would hardly have exceeded \$6,500.

If this subject is thoroughly investigated by intelligent business persons who are practically acquainted with the apple buying and shipping business, I am convinced that this grievous loss to our people, can, to a great extent, be saved. Then, if the present English prices are maintained, the middlemen will secure for themselves a better because a more certain profit than at present, after paying to the growers from fifty to one hundred per cent. more than they have done of late years for our own winter apples.

Lindsay.

THOS. BEALL.

PLANTING APPLE TREES CLOSE TOGETHER.

Some time since a writer in your paper advised planting apple trees 35 to 45 ft. apart, as this will prevent rot, permit the apples to color up better, etc. In part he was right, but in my opinion he was on the whole wrong. In order to make an orchard profitable, it is necessary to have more trees on a given amount of land than when placed 35 to 45 ft. apart. If we can do this and not injure the lands, trees or fruit, I think we have made a fair start toward profitable commercial orcharding.

While a tree is young we get the best crops. The fruit is larger, more perfect, and less liable to rot. In this locality a tree begins to fruit at the age of five or six years from planting. The next 10 or 12 years the orchard is in its prime, and if during this time we can get one-third more trees and have one-third more fruit to market we are just that much better off. The accompanying plan shows my method of setting an orchard which will increase the number of trees one-third and still give ample room for hauling and gathering until the orchard is 17 or 18 years old. If they

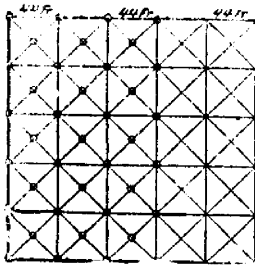


FIG. 935

then interlap, remove every other one and you will still have as many as by planting 45 apart in squares, and besides you will have had 12 years' use of the trees removed. I have given much observation to and had some experience in this matter, so if I were to plant 50 orchards I would follow the scheme above outlined. My advice to every young man is, plant in this manner, cultivate well for five or six years, branch the trees low, give them an annual topdressing and the orchard will pay, other things being equal.—American Agriculturist.



FIG. 936.—A PLATE OF SUDDUTH PEARS.

* Novelties *



NEW pear is being brought before the public by Messrs. Augustine & Co., of Normal, Ill., who kindly send us the accompanying photogravures of the fruit and of the tree. Fig. 936 shows a plate of the fruit, which the introducers state is only one-third natural size. It is claimed for the fruit that it is excellent in quality, seedless, uniform in shape and size, and not subject to insects.

Fig. 937 shows the original Sudduth pear tree which is now seventy-five years of age, about 75 feet high, and ten feet in circumference. This is to show the remarkable size and age which the tree attains. The apple trees alongside are Rawle's Janet, forty years old.

Planting the Blackberry.—The plants are usually set in a furrow six or seven inches deep, and if the land is thin, stable manure may be scattered in the furrow. For all the ordinary large-growing varieties, eight feet between rows is enough. This allows of easy cultivation. For myself I like them far enough apart to admit two horses in cultivating, as shown in the picture in our plantation, on the title-page. Two horses and a spring-tooth cultivator are the most efficient means which I have yet found of keeping a blackberry plantation in condition. In large plantations, it is well to leave out a row occasionally, to allow of a roadway. In the row, the plants are set from two to three feet apart. They will soon spread and fill the row. There are some growers who prefer to set the plants six or seven feet apart in the row in order to cultivate both ways, but this is profitable only where it is possible to give extra attention to tillage and pruning for the purpose of producing fine dessert fruit.

The year the plants are set, potatoes or other crops may be grown between the rows, and the yield should be sufficient to pay for the use of the land. Some growers plant strawberries, not only between the rows but sometimes in the row between the plants; and it is possible, by good cultivation, to obtain two good crops of strawberries before the blackberries smother them.

Three or four canes may be allowed to grow the first year if the plants put out vigorously, and these will bear some fruit the following year. As soon as the canes have reached a height of two or three feet they should be headed back.—Cornell B. 99.

The looser the ground is kept for the first, and indeed for several succeeding years, the more certain and more vigorous will be the growth of the orchard—in the luxuriance and color of the foliage of contiguous plantations, I have found every stage of cultivation strongly marked; these orchards which have been two years under cultivation, exhibit a striking superiority over those which have been but one year under the plow; while these, in turn, surpass the fields in clover or in grain, both in the quantity and size of the fruit.—WILLIAM COXE. *A View of the Cultivation of Fruit Trees*, 1817.



FIG. 937.—THE ORIGINAL SUDDUTH PEAR TREE.

✧ The Garden and Lawn. ✧

THE DEGENERATION OF THE GLADIOLUS.



REFERRING to a recent article on the gladiolus, in which the late Mr. Such is quoted as saying. "Overrich soil and too much moisture, have much to do with the degeneration of this fine flower," one is led to conclude that the gladiolus had been generally subjected to excessive quantities of fertilizer and moisture.

It is common experience that in field culture, where contact with the manure cannot be easily avoided, as in small spaded plots, that the gladiolus does better following a previous crop, for which the ground had been fertilized with stable manure. Now, while no plant is benefited by the application of more food than it can consume, if this food is in the proper condition, it will not use more, nor be injured by it. Excessive moisture should be provided against by drainage.

Now, Mr. Such, speaking in 1880, referred to the *Gandavensis* section, and that high culture is given as the cause of its degeneration. In 1895 this degeneration is even more pronounced, but we will surely not give high culture as the cause; if so, why is this injurious effect not apparent in all branches of horticulture, as all lines are worked for maximum results.

The gladiolus of to-day is quite different from the gladiolus of 1880, except the section referred to, which has been inbred for years, resulting in so serious an impairment of its vitality, that many varieties will not produce characteristic flowers for two successive seasons. This excessive incrossing is the cause of its degeneration, which is amply proven by contrast with varieties having the least infusion of new blood from species.

During the past season my greatest failure was in *Gandavensis*, growing on sandy loam manured for the previous season's crop (new hybrids here grew over six feet high). My greatest success in the same section was in a block where the water stood in the drills at planting time, and the soil was never dry.

Well fertilized moist soil, with plenty of atmospheric moisture will produce results obtainable under no other conditions.

Simcoe, Ont.

H. H. GROFF.

The Bessarabian Cherry is a Russian variety that was fruited at the Iowa exp. sta. the past summer. The fruit is as large as the Early Richmond, roundish, irregular and somewhat flattened. The stem is long and slender. Skin a fine, very dark red. Flesh a rich red, somewhat firm, moderately juicy, sub-acid, juice colored. The quality is good, excellent for culinary purposes and the table. The tree is a strong grower, somewhat spreading, with dense foliage, and fruiting the last week in June. The variety is a true ironclad for north Iowa. The trees the past season were a picture of health and vigor. The summer's sun and the winter's storm do not seem to affect it.

—Farm and Home.

CULTIVATION OF THE GARDEN.



VERY man or woman who has in his possession a piece of land, should plant a garden. The work is healthful, very interesting and usually very profitable. One reason why gardens are not more profitable is that the great majority of people do not know when to plant, and this is information that is difficult to give, from the fact that our country is large—very large—bigger than the United States —(that is what we like to tell our neighbors), and what suits one section of the country does not suit another. For example, the people in the Hamilton valley can safely plant seed from two to three weeks before we can; and again, we can usually plant with safety before people but a few miles north of us. No date can be fixed, and no rule can be laid down, and it is only by experience that we can intelligently go to work—and this seems to be what is seldom done. It is true that the seed catalogues give much valuable information, but as they are intended for general circulation over the whole of this big country, the value of their information is greatly lessened. I have thought that our local papers could help forward this information; they could save their subscribers much loss and disappointment; but even here it will not always do. For example, our own Sentinel Review circulation is much too wide to be a safe guide in this respect. I think we are not making much progress in this matter; there seems to be as many tender seeds sown too soon, and hardy seeds sown too late, as there was twenty-five years ago. I am asked as often in the middle of May if “it is time to sow onion seed,” and told that my “balsam seed was no good,” and the “pansy and verbena plants set out on the first of June, did not do well,” showing that in this respect we are not making progress. And it seems to me that we as a Society should endeavor to help our fellows by each one helping his neighbor, telling him when to sow seed or plant.

As soon as the young plants appear cultivation must commence at once. Some cultivators sow with their flower seeds a few radish seed, which quickly come up and show the rows, and cultivation can be commenced before seeds for the crop have come up. A few days ago I saw in a horticultural journal that claims to be fifty years old, this plan spoken of as an original idea; when such standard authors as Henderson, Quin, and Carpenter, recommended the plan twenty-five years ago. I wish I could impress on every person the importance of early cultivation; it is much easier and far more profitable to hoe the ground over three times than once. I am always sorry when I see a man, or worse, a boy, or worse yet, a woman, struggling with a hoe to destroy weeds that are from three to six inches high, and at the same time trying to bolster up a weak, sickly vegetable or flower plant that has been ruined by the shade of the weeds. If the ground is raked over or hoed over when the weeds first show their seed leaf, the rest of the work is comparatively easy—try it.

But I think the greatest drawback to successful gardening (and it was to draw attention to this that this paper was written) is, that the continued growing of vegetable and flower plants in the same ground, and the incessant hoeing and cultivating has a tendency to make the soil dead and compact ; and not in the best condition for the development of plant-life. I was very much struck with this a few years ago. I came into possession of a piece of old pasture-land which was supposed to be very poor ; it was given a heavy coat of manure and planted to early vegetables, but to be certain of results I planted on the same day a few of all the seeds on a piece of land that had been heavily manured every year for fifteen years ; there was a marked difference in the crops, that on the pasture land was two weeks earlier, and by far the finer vegetables. Wood ashes are a great help to such land ; and here I might be permitted to remark that it is a disgrace to the cultivators of the soil of this section of country, that wood-ashes are exported out of this town at from 3 to 4½ cents a bushel, and sent to the United States, where our American friends (who are generally supposed to know what they are about), pay from 25 to 35 cents a bushel for them. Last spring I was up through my native township of West Zorra, and saw an ashman get one and a-half bushels of fine wood ashes (an ashman's bushel usually contains five pecks), and in return give a paltry piece of inferior soap that even a gardener would scarcely like to use to clean his hands. Some agricultural papers, recommend an export duty on ashes. I am strongly of opinion that where cultivators of the soil will not use wood ashes at 3 or 4 cents a bushel, the only kind of legislation they require is an act to compel them to go in when it rains. I might also remark that a good coat of wood ashes is almost a preventive of potato scab. But, though ashes are a help, they are only a help. Cats eat mice, in some countries men eat men, and there is nothing that vegetation seems to delight to feed on so much as on the decaying roots of their fellows ; and so to obtain the best results we must occasionally fill the soil with the roots of some plants for this purpose. Clover is the best, the roast beef as it were of vegetable life, but clover roots are expensive. It takes two years to get the soil well filled with them ; and where land is worth two or three hundred dollars an acre it does not pay to grow clover. It has devolved upon the Pres. of the Ontario Bee-keepers' Assocn., Mr. O. B. Hall, of our town, a close observer and careful cultivator, to let us out of the difficulty, and it is simply a question of rye—not "old rye," but the rye plant. As soon as the crop is gathered, be it vegetables or flowers, the ground is sown to rye—the rye makes a vigorous growth, and by spring the soil is a mass of roots ; it can be dug or ploughed under, and you have a seed-bed, in the best possible condition, for almost any kind of seeds or plants.

ANGUS RCSE.

Woodstock, Ont.

GERANIUMS.



R. A. McNEILL'S lecture before the Grimsby Horticultural Society on the evening of March 9th, was very interesting. A large number of the members were present and were ready with their questions in order to elicit as much information as possible. Mr. McNeill in the course of his lecture gave the names of such plants as he believed the amateur might grow in the house

with the greatest success, as, for instance, geraniums, which will endure a great deal of hard usage and yet give a large amount of bloom. They are easy of propagation either from seed or cuttings. In making cuttings he advises taking points and breaking them off where the wood is sufficiently mature, that is, where it will bend a little and then snap off with a square break. These cuttings should be placed in moist earth at a temperature of about 60 degrees. An easy way to start cuttings is to take a glass filled with lake sand saturated with water and insert the cuttings as thick as they will stand. Place them in the shade and in a few weeks you will have well rooted cuttings. When the roots are about three-quarters of an inch long, you may plant the cuttings in good soil. The best soil is made by mixing one-third sand, one-third garden soil and one-third of the bulk of barn manure. Soil is very important to the best success. The cuttings should be first planted in small thumb pots, if you want the best success. Fill the pot about half full of soil, place the plant on this and add soil until nearly full, firming it well. In such little pots drainage is unnecessary for geraniums. It is a good plan to bed the pots of plants in boxes of sand, as in such a condition they are not so apt to dry out. The plants should be transplanted to larger pots when the roots have well filled the smaller ones. If the first pots are say two and half inches in diameter, the next size should be three and a half inches. It is never well to use too large a pot. The season of blooming can be regulated by the time of propagation. If plants are required for winter blooming, propagate them early in July and do not give them very much water until late in the fall, and then in October give them additional heat and moisture and they will start into a vigorous growth and be in a condition for winter blooming.

Mr. McNeill gave these details with regard to cuttings, because he had been asked to make his lecture as elementary as possible, and the methods which are suitable for propagating geraniums are also applicable to other plants. In his list of plants with which the amateur might expect success, he named the following, in addition to the geranium viz :—fuchsias, begonias, palms, calla lilies, coleuses, and dahlias.

DAHLIAS.

In his address, Mr. McNeill referred to the propagation of the dahlia. He said that usually amateurs plant too many buds and it was a mistake to

plant them in the open ground without first starting them in the house. He would advise cutting the tubers apart as soon as the buds have started and allow only one bud to grow with a bit of tuber attached. He found clay soil well suited for dahlias, especially when charcoal is added. The charcoal is useful where early bloom is wanted. We mention this just now in order to give a hint to our amateur flower growers that the time has come for starting dahlias in boxes indoors, in order to have them ready for planting out toward the end of May.

HOW TO GROW GLADIOLI.

Over-rich soil and too much moisture have much to do with the degeneration of this fine flower. For fifteen years or more I have been a wholesale grower of the gladiolus, and at the present time—September, 1880—I have many hundreds of thousands of these bulbs nearly ready to be dug up, and for a certainty, hardly one in a thousand will show the slightest trace of disease.

My soil is extremely sandy, so much so that it has the appearance of being really nothing but sand. For the gladiolus I use no strong manure whatever, in fact, if a pretty well manured crop of corn, or some other rank grower has occupied the land during the previous season, I have the ground merely plowed up in the spring, and have the bulbs planted without additional preparation. Planting begins about April 1, and is usually ended by May 1. From early in June till the end of August we have a tropical heat, the thermometer ranging from 70° to 85° and 90°. This, however, does not disagree with the gladiolus, unless the weather happens to be very dry as well as hot, in that case the plant suffers, especially if the flower stalk is showing, at which time a soaking rain is of great benefit. Towards the end of September, or indeed sooner with some varieties, the leaves begin to change from a lively green color to a yellowish brown, showing that the season's growth is at an end. Then digging up begins, each digger being followed by a boy who cuts off the stalks as soon as the plants are taken from the ground. The bulbs are dried, not in the sun, but on airy shelves, and the roots are cleaned off during rainy days, or any time during the winter, whenever that is convenient.

I am by no means in favor of keeping the stalks attached to the bulbs after they have been dug up.

Gladiolus bulbs, to come out in good order in the spring, should be kept cool and dry during winter. If the bulbs are in a damp place, or heaped together before they are fully dried, the roots will start in a short time, and a top growth will be likely to show itself as well. But no matter how cool and dry they may be kept, some varieties are almost sure to throw out a shoot in early spring, of which fact I may mention that the kind named Shakespeare is a notable example.—Gardening.

THE DAHLIA.



HIS flower is not grown as successfully as it might be, because its wants are not properly understood. The tubers should be started into growth in March or April, in the house. Much of the success to be aimed at in the cultivation of this plant depends on an early start. Keep the started tubers in boxes till the weather becomes warm, for a slight frost will kill the tender growth, and a cold spell will so check the development of the plant that it will take it a long time to recover. Therefore, do not be in a hurry to put your plants in the open ground. Have the soil very rich. It can hardly be too rich, for the dahlia is a great eater. As soon as the stalks begin to reach up set three stout stakes in a triangle about the plant, about a foot apart each way, and be sure to tie the main branches to them, for they are very brittle and easily broken by the wind. On washing days pour the wash-water about them, and see that they never lack for moisture. If you start them early in the season, provide rich earth for them, and keep them moist at the roots, you will have splendid flowers from them. As a general thing, they are started into growth in the open ground, are not given a rich soil, and are never watered. Under these conditions they never give satisfaction. But, when properly cared for, they are simply magnificent. They come in all colors of the richest shades, and the variety seems almost endless. Of late years the single sorts have come into favor, and they are deserving all the popularity they enjoy. They are really more graceful than the double kinds, as their blossoms are borne on long and slender stems, well above the foliage, and have the appearance, at a little distance, of a flock of butterflies hovering over the plant.—Christian Union.

China Asters.—Respecting the cultivation of China asters, little need be said. If early flowers are wanted or if the plants are to be grown in pots as specimens for exhibition, the seeds should be sown indoors or in a frame as early as the middle of April, in this latitude. But if the plants are to be grown in borders, it is quite as well to sow the seed in the ground where the plants are to grow. The China aster is essentially an autumn flower, and I have no desire, from the amateur's standpoint, to force it ahead of its season and to make it compete with the flowers of midsummer. We sowed the seeds of about fifty varieties on the 4th of June last year. The soil was rich and kindly—a good loam—and the plants came on with vigor, and, notwithstanding a prolonged drought, every variety gave a profuse bloom throughout September and October, and a few sorts—like Queen of the Market—spent themselves and died before frost came.—H. BAILEY, in Bulletin 90.

HOME-MADE GRAPE AND BERRY CART.



VERY handy cart for use in vineyards and berry-fields is easily constructed from the wheels and shaft of a worn-out mowing machine, with the simple addition of a box of proper size and thills, which any one handy with tools can easily construct. The general form and arrangement is shown in the sketch. The box should be six feet in length, at least one foot in height, and rather wide—the width, of course, depending upon the length of the axle. Thills can be of any straight, strong material, and to bring the outer ends together, a two-inch block can be placed between them and the box where they meet at the back end. A strip of board, to which the swingletree is attached, is connected with both thills at the front end of box.

This is a very handy one-horse rig for hauling fertilizer or other material in the vineyard or berry-field; also is used in transporting the fruit from field to

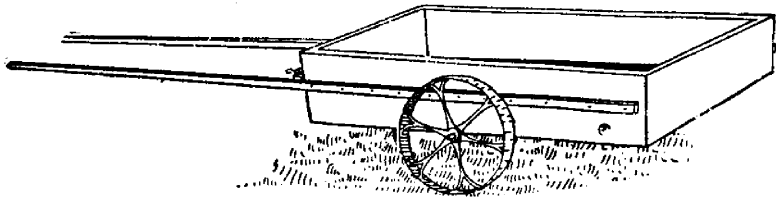


FIG. 938.—HOME-MADE GRAPE AND BERRY CART.

packing-house or evaporator, and for many other purposes about the place. It costs but little, for if you do not have the wheels and shaft, you can obtain them of some farmer at the price of old iron.

During winter is a good time to fit up such a rig, and when once made you will put it to many uses not now thought of.—New York Farmer.

Device for Early Plants.—Those who start early garden or flower plants in the house will do well to consider the plan shown in the accompanying sketch.

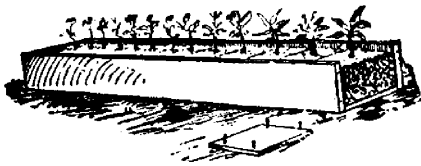


FIG. 939.

The seeds are planted in a very long and narrow box, one end of which is tacked upon the outside so that it may be easily removed. Then with a sharp shingle of the right width, cut the earth between each plant, and beginning at the end lift each one out by sliding the

shingle in under each square of earth in succession. In this way the earth will not be disturbed at all, an important point.—American Agriculturist.



The Canadian Horticulturist

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. ✦

CUTTING PRICES—Canadians will be glad of the success of one of our members, Mr. H. H. Groff, of Simcoe, in winning the Florists' Exchange prize of \$5 in gold, for the best essay on Cutting Prices on new and valuable varieties of plants.

NEW CANADIAN NOZZLE.—The Holmes & Halliday spray pump makers have sent us a sample of their new nozzle, which appears to combine several good points and is very easy of adjustment. It will receive a test at the Spray Pump exhibition at Grimsby, on April 2nd.

THE ROBENA PEACH was recommended by the U. S. pomologist; so we wrote to the originator, Dr. Taylor, of Washington about it. He says he had no thought until recently of propagating it, and has no trees for sale. He further states that the parent tree is but six years old. It bears profitably; is loaded down with delicious fruit, freestone, and of rich color, each autumn.

FRAME WORK FOR SPRAYING TREES.—An illustration is going the rounds of the press which shows two sprayers caged on an elevated platform, while one man below drives the team. Surely the inventor has never been in an orchard or he would be aware of the difficulty of getting such a tower through among the limbs of an orchard of large trees, and the danger to the men should the horses take fright at the spray. The picture represents an absurd idea, and light bamboo poles to elevate the nozzle such as are used at Maplehurst are much safer and more practicable.

THE CHERRY CURRANT.—Notwithstanding the tremendous flourish with which the Fay Currant was introduced, and the fortune which has been made out of it by its introducers, it would appear that it is little, if any, superior as a market currant to the Cherry. At the N. Y. Experiment Station, the Cherry has proved itself superior to the Fay in productiveness and in vigor of bush, though the latter has longer bunches and more uniformly large fruit. The Cherry Currant should be marketed early, as the fruit will not hang as late as some other varieties. At Maplehurst this has been the favorite market current for twenty years. The best late varieties of red currants are Prince Albert and Victoria, both of which are productive, and the former, when well grown, will pass for a large currant.

SPRAYING EXPERIMENTS will be conducted throughout the Province of Ontario during the summer of 1896, on the same basis as last year; only in thirty totally different points, in order to interest and instruct the fruit growers in as many parts of Ontario as possible. This work is in charge of Mr. A. H. Pettit, who was last year director of these experiments, and whose faithful work bears witness to his eminent fitness for his position.

This plan of experimenting in the very orchards of our fruit growers is one of the best ways of spending the peoples' money; for when confined to one or two orchards, the people may read about the results, and know nothing about the proper methods of operation. In the plan which was adopted by our Board, under approval of our Minister of Agriculture, the people are being taught how to do it, as well as that it pays to do it.

BORDEAUX FOR APPLE AND PEAR SCAB.—At the New York Agricultural Experiment Station Prof. Beach has been experimenting to see how many treatments will produce the best results, in proportion to the cost. From his experience in 1894, he has concluded that the best results were gained by three thorough treatments, viz., (1) after buds break, but before blossoming; (2) immediately after blossoming; (3) from ten to fourteen days after the second treatment. Now, if this is so, it is much to our advantage to know it, for so far we have been taught that it is necessary to give at least six applications, covering almost the entire season; an undertaking so great that many fruit growers feel discouraged over it. As to the benefit, Prof. Beach writes "The sections sprayed after blossoming had on an average 1.06 more fruit per tree, *and more than four times as much first class fruit per tree* as did the unsprayed sections."

EXPERIMENT STATIONS IN CALIFORNIA.—From the exhaustive report of these stations just received it is evident that the cost of their maintenance is over four times that of the Ontario Fruit Experiment Stations, with probably less practical results. They are under the control of the University of California,

much as ours are under the Ontario Agricultural College at Guelph, only that ours has the additional advantage of the advice of three prominent fruit growers on the Board of Control. Their work is mostly in fruit testing, for which they have five sub-stations, and the expenditure per annum is \$15,000 per annum, one-third of which goes for salaries and one-third for labor. In addition to these they are undertaking to control the two Forestry Stations, for which, however, there is separate additional allowance of \$2,000. This will be \$17,000 per annum for seven stations, while we only expend \$2,500 per annum on our twelve stations and probably obtain better results.

LECTURERS TO AFFILIATED SOCIETIES.—For the first time, lecturers have been sent out by the Ontario Fruit Growers' Association, to speak on the "Fruit and Flower Garden," before the affiliated Horticultural Societies. The following is a list of lecturers and societies addressed :

Alexander McNeill, Windsor ; subject, "Window Garden and Flowers for Busy People" ; societies visited, Grimsby, Niagara Falls South, Port Colborne, Hagersville, Port Dover, Leamington.

T. H. Race, Mitchell ; subject, "The Fruit and Flower Garden" ; societies visited, Port Hope, Trenton, Belleville, Napanee, Lindsay.

D. W. Beadle, Toronto ; subject, "The Fruit, Flower, and Vegetable Garden" ; societies visited, Freeman, Paris, Woodstock, Chatham, Windsor, Brampton, Waterloo.

THE following is a list of the Ontario Fruit Experiment Stations as now established :—1. Southwestern, peaches ; W. W. Hilborn, Leamington, Ont. 2. Niagara District, tender fruits ; Martin Burrill, St. Catharines, Ont. 3. Wentworth, grapes ; M. Pettit, Winona, Ont. 4. Burlington, blackberries and currants ; A. W. Peart, Freeman, Ont. 4½. Halton Sub-station, strawberries ; E. B. Stevenson, Freeman, Ont. 5. Lake Huron District, raspberries and commercial apples ; A. E. Sherrington, Walkerton, Ont. 6. Georgian Bay District, plums ; John G. Mitchell, Clarksburg, Ont. 7. Simcoe Station, hardy apples and hardy cherries ; G. C. Caston, Craighurst, Ont. 7½. Simcoe Sub-station, gooseberries ; Stanley Spillett, Nantyr, Ont. 8. East Central Station, pears and commercial apples ; R. L. Huggard, Whitby, Ont. 9. Prince Edward District, apples ; W. H. Dempsey, Trenton, Ont. 10. St. Lawrence District, hardy pears and hardy plums ; Harold Jones, Maitland, Ont. Secretary for Stations, L. Woolverton, Grimsby, Ont.

THE SUDDUTH PEAR, which is illustrated in this number, is being tested at our Station. The Fruit Growers' Journal, published in Illinois, the State in which it originated, says there is a great diversity of opinion regarding its value. Our readers will do well to wait the reports of our Ontario Stations before investing in this or any other novelty.

ERRATA.—On page 110 for "Fruit Exhibit," read "Plant Exhibit."

✠ Question Drawer. ✠

Varieties of Apples for Commercial Orchard.

817. SIR.—I am about to plant an apple orchard near Palermo, and would like your advice concerning the best varieties for profit.

DR. H., *Brampton.*

A hard question, considering the varying conditions in different sections. For export purposes, the following would be an excellent list for Southern Ontario, in order of their season:—

Blenheim, Gravenstein, Wealthy, Ontario, Cranberry, Baldwin.

These are all showy and salable varieties, and grow to perfection in the section indicated, between Burlington and Oakville.

Quantity of Fertilizer for Apple Orchard.

818. SIR.—I have an old, old orchard, some of it one hundred years in bearing. A considerable part of it has been new topped in recent years, and doing fairly well. Soil, a loose and friable clay-loam. Last November, I gave it a very moderate dressing of stable manure and turned in with the plough. I propose to apply some mineral fertilizer and harrow in spring. What would you recommend, and in what quantities per acre? Do you recommend ploughing bearing orchards in the fall?

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

For an apple orchard, the following quantities per acre of the different fertilizers are recommended by Prof. Van Slyke, viz. :—

Nitrogen, 8 to 16 lbs, furnished by 50 to 100 lbs. nitrate of soda, or by 1600 to 3200 lbs. stable manure.

Available phosphoric acid, 30 to 60 lbs., furnished by 300 to 600 lbs. bone meal, or 250 to 500 lbs. dissolved rock.

Potash, 50 to 100 lbs., furnished by 100 to 200 lbs. muriate, or by 1000 to 2000 lbs. wood ashes.

Fall ploughing, as a rule, is beneficial, opening the ground to the action of the frost.

Tuberous-Rooted Begonias.

819. SIR.—What is the best way to grow the tuberous-rooted begonia?

F. F., *Lindsay.*

We cannot reply better than by quoting from "House Plants." Tuberous begonias for the summer window are started in a gentle heat in the spring. Put the tubers in three-inch pots, barely covering the crowns. Water very moderately at first, increasing the amount as they grow. In six weeks from the time the crowns start, shift the plants into five-inch pots to bloom. A little shade from the hottest sun will please them.

World's Fair Medals.

820. SIR,—We sent some White Clover Honey to the World's Fair at Chicago, and it took the only prize given for that kind of honey for Ontario, we have been waiting patiently for a medal or diploma, and was promised that by the Commissioners at Washington who wrote us about it. As you are our Secretary I thought to take this liberty of writing to you, we thought that we could expect something good from a nation that can afford to spread its mighty wings over North and South America. Please give us some information.

GEO. HARRIS & SON, *Dungannon, Ont.*

It would certainly appear that there is more "red tape" required to run a Republic than a Dominion, or even than a Monarchy. We are assured that the Department of Agriculture at Washington is slowly but surely, signing the diplomas which are sometime to be distributed, along with the medals.

Whitesmith or Downing.

821. SIR,—Which of these varieties is the most profitable?

J. P. L., *Owen Sound.*

The Downing would be as the rule most profitable, because it is more productive, and not so subject to mildew.

Most Productive Black Currant.

822. SIR,—Which is the best black currant for productiveness?

J. P. L., *Owen Sound.*

At the New York Experiment Station the Prince of Wales gave the best yield, during the past three years. Saunders is also a valuable variety.

What Pays Best ?

823. SIR,—I am superintendent of John St. Garden in this town. We have 2½ acres, filled with apple and plum trees, 500 currant, and 300 gooseberries. My place is drained as no other garden in Canada, and I am preparing to set out a large quantity of the small fruits. I want to know what kind will give me best success?

J. B., *Stayner.*

It is impossible to answer such a question because conditions are so varying. One man makes most from strawberries, another from currants, another from raspberries, another from grapes, simply because he is growing the fruit that suits his soil and his market.

Stock for Budding Cherries.

824. SIR,—I purpose planting a quantity of seedling cherry stocks for budding. Is any one kind of stocks suitable for both the Heart and Duke classes, and which is best? I can get French imported stocks which I intended doing. Thinking you can furnish me the desired information, I inclose card for reply. The recent cold snap does not appear to injure the peach buds, and I hope next fall to be able to show you some better specimens of my seedling.

H. L. McCONNELL, *Gravesend.*

The Mazzard is the best stock for budding both Heart and Duke cherries upon. It is a fine, thrifty grower. Where dwarf trees are wanted the Mahaleb is used. Seedling stock of both these should be easily procured in this country.

Russian Apricots.

825. SIR,—I have three Russian apricot trees, the Alix, Budd, and Alexander, which I think will never bear fruit here in the County of York. Is there any other fruit I could graft on them with success?

R. J. WOOD, *Thistletown.*

Reply by Mr John Craig, Ottawa.

I cannot speak from experience on this matter. On general principles I do not think, however, it would pay him to graft peach or apricots upon Russian apricot stocks. If the trees have not blossomed so far, or show no indication of bearing fruit, I would endeavor rather to bring them into bearing by trying some experience in the way of "ringing" a branch or two of each tree. This might be done by removing a ring of the outer bark or by twisting a piece of wire tightly about the base of the branch. Peach trees are grown so quickly and they are so liable to "gum" and make bad joints when grafted that I do not think it would be advisable to try stock grafting.

Blossoming Period and Habits of Apple Trees.

826. SIR,—Kindly place the following varieties in groups: 1, those that blossom at the same time; 2, according to habit of growth? Varieties: Pewaukee, Wealthy, Mann, Roxbury Russet, Golden Russet, Blenheim Orange, Hurlburt, King, Ben Davis, Walbridge, Canada Baldwin.

W. LOUCH, *Wellburn, Ont.*

Reply by Mr. John Craig, Ottawa.

The varieties mentioned above, according to records secured last year, would fall into three groups, the classification being based upon the period at which they blossomed: *Early Blooming*—Blenheim, Ben Davis. *Middle Group*—Pewaukee, Wealthy. *Late Group*—Roxbury Russet, Canada Baldwin, Golden Russet. The same varieties might be grouped under three heads, the

grouping this time being based upon their habits of growth: *Round Tops*--Pewaukee, Wealthy, Blenheim. *Spreading*--King, Golden Russet, Rox. Russet, Hurlburt. *Upright*--Ben Davis, Walbridge, Canada Baldwin, Mann.

Forming Horticultural Societies.

827. SIR,—Will you kindly inform me, through the CANADIAN HORTICULTURIST, on what conditions local horticultural societies may join the Provincial Society?

C. FIRTH, *Durham.*

By reading sections 6, 7, 8 and 9 of the Agricultural and Arts Act, our readers will understand how to organize and become entitled to a grant for their encouragement. Many societies find the best mode of carrying out the objects of their society is to become affiliated with the Ontario Fruit Growers' Association, see section 9, paragraph 2 *a* and *b*. This Society will then furnish each member, free of further charge, the CANADIAN HORTICULTURIST, the Annual Report, and send a lecturer on Horticulture to the society once a year.

Gas Tar for Cureulio.

828. SIR,—Can you or any of your readers tell me how much gas tar can be used to a barrel of water without danger to the foliage of fruit trees if sprayed? I have an idea that the disagreeable odor might drive away cureulio.

G., *St. Thomas.*

Reply by Prof. Fletcher, Central Experimental Farm, Ottawa.

Your post card to Mr. Shutt, with reference to the use of tar water as an insecticide, has been referred to me. I have never tried this remedy myself, but it is a remedy which has been tried, I believe, by a good number of fruit growers and farmers during the last ten years or so. In the first report of the United States Entomological Commission, 1878, page 382, will be found an account of the method of using coal tar in the irrigating ditches in Colorado, which consists of dropping coal tar on the running water with which the irrigating ditches are supplied. A few drops dropped into the stream give off their oils, which float on the surface and destroy any insects with which they come in contact. It is stated that a single drop floating on the water is capable of causing the death of a large number of insects. Dr. J. A. Lintner, in his first report, 1882, says as follows: "A convenient method of using coal tar for the destruction of many of the smaller insects that infest our gardens is to procure a coal tar barrel with a few gallons of tar remaining in it, fill with water and use from it as needed with a sprinkler. It may be refilled a number of times, if the tar be stirred occasionally with a stick, to disengage the oil. Used in this manner, it is also a valuable deterrent from insect attack. It has been stated—

Country Gentlemen, XLI, 1876, p. 262—that a gallon of coal tar mixed with a pound of sulphur, placed in a frying pan and set on fire, and passed under plum trees in the morning while wet with dew, every morning during the curculio season, made the trees black with soot and effectually prevented the attack of the curculio.” With regard to this last method mentioned by Dr. Lintner, it might be well for it to be tried by some of those who profess not to have succeeded in controlling the curculio with Paris green, and I shall be much obliged if anyone who tries it will let me know of their experience.

Nut Culture.

829. SIR,—In looking over an American Nurseryman's Catalogue for 1896, I find he speaks very highly of growing chestnuts and hazelnuts for profit. He speaks of great profits—as high as \$25 and \$50 from individual trees. Of varieties, he mentions Japan, Early Reliance, Giant Japan, Advance Japan, and Japan Mammoth, and American Sweet. Reported profits seems very highly colored, but I am getting four Japan Mammoths and four Filbert trees to try them.

Could you tell me, through the journal, the best varieties to plant: which are most hardy and profitable in a locality where the thermometer drops in some cases to 30° below zero? I live about 20 miles west of Stanley Spillet's Gooseberry Station.

JOHN REED, *Everett, Ont.*

In Ohio and Pennsylvania, south of the Alleghany Mountains, doubtless it would pay to grow the Japan chestnuts for profit. They are very large, but inferior to the common American sweet in quality; the trees are productive and bear early. The great difficulty is in transplanting, for they are very sensitive. But it is not at all probable that these Japanese chestnuts would endure our Canadian winters, for they are sometimes injured in Northern Pennsylvania. We notice that one year old trees of some of them are quoted as high as \$2.50 each, and we fear our correspondent will only throw away his money in buying them. We have ordered some varieties of chestnuts to be tested at our Fruit Experimental Stations, and should any of them prove hardy, we will report for the general good. The American Sweet succeeds as far north as Southern Ontario, on dry sandy knolls, but it is not productive enough for profit.

* Open Letters. *

The Stoddard Plum.

SIR,—We notice what you say on page 17 of the Twenty-sixth Annual Report of your Association, regarding the Stoddard plum. We are the introducers of this plum, and we receive many words of commendation from those best qualified to judge, and who have seen the fruit. Prof. Bailey says of it: “Fruit very large and fine color, excellent quality; tough, sweet skin, which I consider a strong point in its favor.” Prof. Budd, of Ames, Iowa, has often spoken in the highest praise of it, and others whom we might mention. It is a true native, originated from native seed planted in Buchanan County, Iowa, and is named in honor of its discoverer. The tree has been pretty fully tested, and, so far, has

proved strictly hardy, and a very prolific bearer. The original trees are now about fifteen years old, and bearing annually. Young trees in the nursery row have often been found with considerable perfectly developed fruit. It has never been troubled with any insect or disease. The fruit is wholly unlike Hawkeye. It took first premium for the largest native plum at the World's Columbian Exposition, and has always taken premiums at our State fairs. At the last fair it took the premium for the largest and best plum introduced since 1885, and that is just what we claim for it.

We have also introduced a red raspberry, something like the Shaffer's Colossal, only more stalky in growth. It throws out numerous fruit-stalks, and bears its fruit more along the cane. It blooms late, thus escaping late frosts. The fruit is lighter in color than the Shaffer and has less bloom, but is firm enough to bear shipping. It is of excellent quality, and the bush is a prodigious bearer. So far, it appears hardier than the Shaffer, and better able to stand drought. We consider it one of the best of its class yet introduced, and would be glad to have you try it at your Station.

J. WRAGG & SON, *Waukee, Iowa.*

Poisoned Grain for the Sparrow.

SIR,—Your letter to Mr. Fletcher, enclosing a communication to Mr. Goodhue respecting the extermination of the English sparrow, has been referred to me.

Undoubtedly, grain poisoned with strychnine is very effective, but the danger in using such about the farm buildings would lead me to hesitate before advising its general adoption.

Sparrows may often be collected in large numbers by scattering grain for several days in the same place. If for this purpose a small and enclosable part of one of the farm buildings be selected, the destruction of the birds is an easy matter. Large numbers of sparrows have been killed on the Central Experimental Farm in this way during the past few seasons. When the grain is spread outside, the shot-gun proves a very effective method of destruction.

FRANK T. SHUTT, *Chemist, Expl. Farms.*

The English Sparrow.

SIR,—I notice in your February number an article written by Mr. Goodhue, of Danville, Que., regarding the English sparrow. I would say to that gentleman that we could not do well without them. I claim that they are the best cabbage-worm destroyer that we have. Being very active, they are great feeders, and they destroy millions of seeds of noxious weeds in the winter. I know they are a pest to the citizens, but they can buy cabbage much cheaper, owing to the work of these birds. Where they are a constant pest, use wheat through your iron rod (gun) and they will soon leave you, but do not kill one of them.

W. J. HUNTER, *Orangeville, Ont.*

Growing and Trellising Grapes.

SIR,—In regard to what you say in February number about grape trellising; I think that we Germans, who have been growing grapes for one thousand or more years, should know more about vineyards than Canadians do.

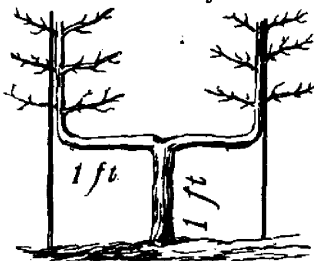


FIG. 940.—STUB SYSTEM.

In making a vineyard, I would recommend the following varieties only: Concord, Delaware and Niagara. I would plant the vines five feet apart, and for every vine stock I would set two poles; that is according to the Stub system (see Fig. 940).

In this way the vines want only tying twice during the summer, and cutting off on top of the poles. This method only needs one man for ten acres. (But the Kniffen method needs no summer tying at all.—ED.)

T. N. GRUENBACK, *Cayuga.*

✦ Our Book Table. ✦

CATALOGUES.

Roses, Plants and Flower Seeds is the title of the bright 72 page illustrated catalogue issued by Messrs. Webster Bros., of Hamilton, Ont. This firm have made roses their specialty.... Illustrated Catalogue of Spraying Pumps and Nozzles, manufactured by the Deming Co., Salem, Ohio, U.S.... Illustrated and Descriptive Catalogue of Fruit and Ornamental Trees, Small Fruits, Vines, Shrubs, Roses, Plants, etc., grown and for sale by J. Wragg & Sons, Waukeo, Iowa, U.S.... Catalogue of Fruit and Ornamental Trees, Plants, etc., for sale by Edwin Hersee, Bloomsdale Nursery, Woodstock, Ont.... "From a Push-cart to the Trolley-car in Fruit Growing." Illustrated Catalogue of Fruit Trees. G. H. & J. H. Hale, South Glastonbury, Conn., U.S.... 1896. Catalogue of Hardy Northern Fruits, Evergreens, etc., grown and for sale by J. V. Cotta, Nursery, Ill., U.S.

BOOKS.

HORTICULTURE. A new monthly journal on Fruits, Flowers and Plants. 25 cents a year. M. Crawford, Cuyahoga Falls, Ohio, U.S.

PRIZES FOR BEST ORCHARDS in East Simcoe are offered by The Orillia Horticultural Society. The points to be considered are such as site, soil, cultivation, varieties, pruning, general condition, etc. The two prizes aggregate the sum of \$50.

THE BURBANK PLUM, which is counted about the best of the Japan varieties, is said, by Prof. Bailey, to be about a week or more later than Abundance, with firmer flesh and better flavor. The tree is of sprawling habit, requiring shortening in, and it is enormously productive.

THE SCILLY FLOWER TRADE.--The West Briton of Truro, Eng., says: "The Scilly flower trade is flourishing just now, growers reaping great benefit from the recent mild weather. On Monday the S.S. 'Iyonesse' brought across to Penzance the largest quantity of flowers ever landed at one time—4,849 boxes, weighing about 30 tons. Last Saturday the same steamer brought 3,730 boxes, and on the previous Thursday 4,258 boxes. Only eight tons were sent last year for the whole of February, as the frost seriously affected the flowers.