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ORTICULTURIST.

THE JOURNAL
DEVOTED TO

FRUIT
FLOWERS
AND VEGETABLES

EDITED BY L. WOOLVERTON, M.A.
PUBLISHED BY

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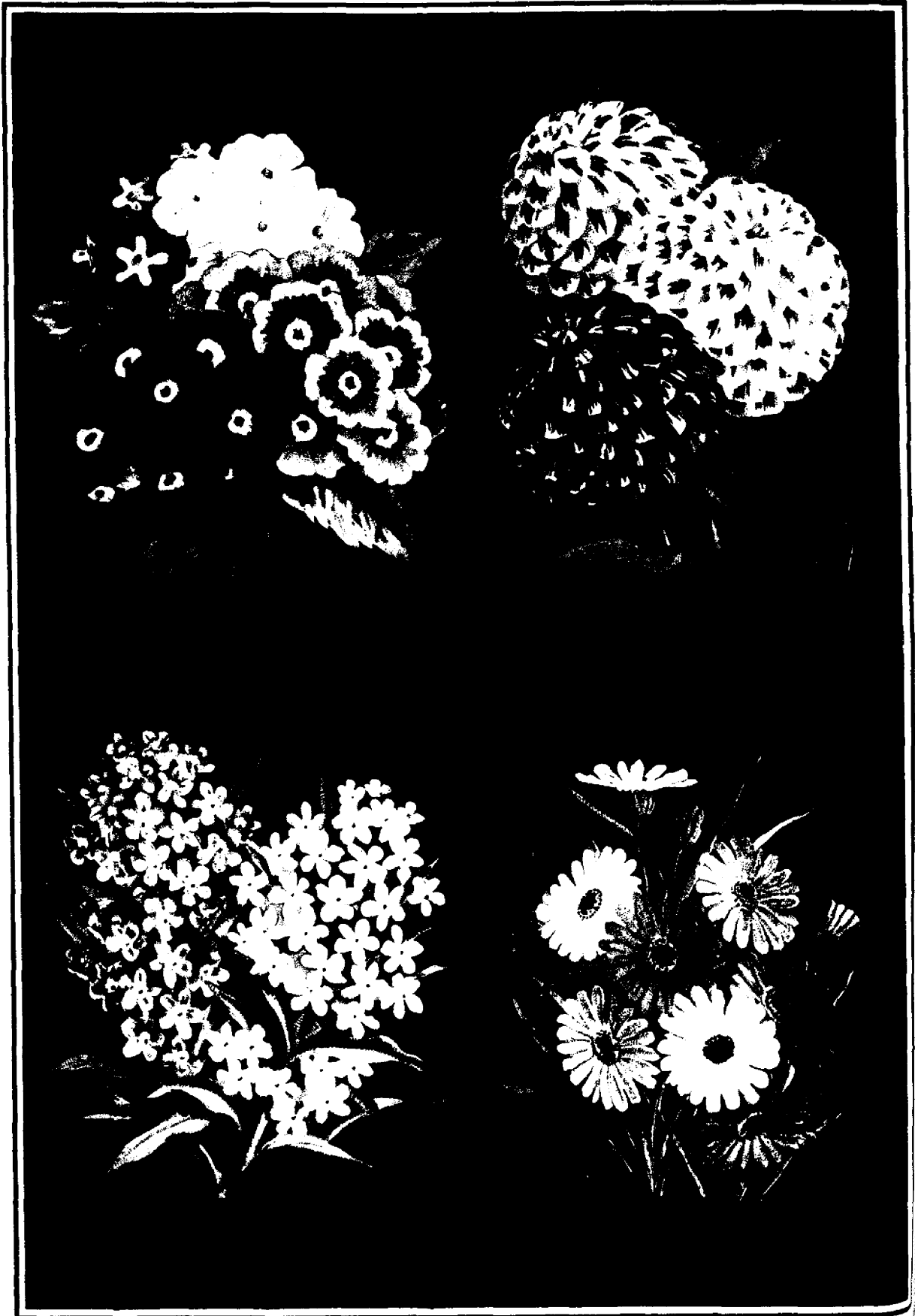
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THE
Canadian Horticulturist.

VOL. XIII.

1890.

NO. 5.



SOME SHOWY FLOWERS.



AT this season of the year when as everybody says: "April showers bring May flowers," and everyone is thinking of either buying a few plants from a gardener, or else sowing some flower seeds in the open ground, it will be opportune to call attention to three or four deserving favorites.

Notwithstanding the extreme beauty of our floral treasures and the importance of having a free display of their charms in connection with our homes, we do not advise anyone to break up a pretty lawn in order to plant a bed of flowers, whose gaudy colors disturb the quiet repose of the green in front of the house, or present during a portion of the year an ugly bald patch of earth to the eye, where a smooth well-kept stretch of lawn would be much more inviting. The best place for flowers is on the side of the house, grouped in a garden, or in beds along the drive-way toward the coach house.

Taking them in order, our colored plate represents first, a cutting of *Verbenas*, a class of well-known plants, which are among the most beautiful and most popular for bedding out purposes. Although perennial, many growers treat them as annuals, and raise seedlings for one summer's flowering only. There are some eighty varieties, and one of these, *Verbena officinalis*, is the common Vervain of our ditches. The following are some of the best varieties for bedding out; Boule de Neige, Crimson King, Lady Lonsborough, Lustrous and Purple King.

Second, we have *Zinnias*, a race of flowers which have become very popular since the introduction of the double flowering varieties, many of which nearly equal Dahlias for size and beauty. They get their name from J. S. Zinn, Professor of Botany, at Gottingen.

Zinnias succeed best when plants are started in a hotbed, and not transplanted to the open ground until well on to midsummer, and then they require a rich deep loamy soil, and sunny exposure. Most of the garden varieties are descendants of a species called *Zinnia elegans*.

The *Myosotis*, or Forget-me-not, which come next, below, have a special charm on account of their delicate beauty. The name *Myosotis* signifies mouse-eared, from a fancied resemblance in the leaves. There are some forty varieties, natives of the Temperate Zone, and very common in Europe and Australia. We have in Canada only one, *viz*: *Myosotis palustris*, which may be found in wet places; it has a small pale blue corolla with yellow eye.

The Forget-me-not is easily propagated by sowing the seeds outside in springtime, and no garden is complete without a few bushes of them in some moist shady corner.

The fourth, at the lower right hand, is a charming little annual, known as the "Swan River Daisy." Its proper name is *Brachycome iberidifolia*, and its native habitat is the banks of the Swan River, in Australia.

We have found this to flower very freely when grown on a rich sandy loam in a sunny exposure. The flowers are about an inch in diameter, and in color are chiefly blue or white, with a dark centre. The seed may be sown in the open ground.

No ornament to the table or mantel, can surpass a tastefully arranged bouquet of cut flowers; while the growing of them is not only a healthful employment for our women, but a study in æsthetics which cannot fail to benefit anyone who engages in it.

It is often a question how best to pack flowers to send to a distant friend, and this is well answered in the following, from an American paper:

"The best way is to pack the flowers in ice. This is a sure preservative, especially if a little salt is sprinkled over the crystalline surface. Another mode in which flowers are sent in complete preservation, even to Europe, is to pack them closely in two tin cans, covering the stems in moist cotton. Over all a layer of wet cotton is placed. At the end of the sea voyage the buds and flowers will be found fresh and fragrant as at the beginning. To keep flowers from day to day—that is cut flowers—it is only necessary to sprinkle with water, place the stems deep in moisture, and, if necessary, put a light layer of cotton over them. Flowers can be made to last a long time if carefully watched, but they require the delicate nurture of a lover of blossoms."

THE DOMINION CONVENTION OF FRUIT GROWERS.—III.

BEST APPLES FOR EXPORT—RUSSIAN VARIETIES—FORESTRY.

THE export of winter apples was taken up by Mr. J. T. McBride, of Montreal. He thought that the Spy and the Greening would do better sold in our home markets than exported. As a general rule he had found that the earlier shipments made more money than the later ones. One thing he protested against, and that was the bringing in of Russian apples to Montreal and the re-branding them as Canadian before exporting them, because Canadian apples were in the best demand. On the whole he was of the opinion that more money was lost than was made in shipping apples, and that the number of shippers who had become rich by the exportation of apples, could be counted upon the fingers of one hand.

Mr. Shepherd, of Montreal, had experimented with the Cochrane fruit case, which was illustrated in the CANADIAN HORTICULTURIST, Vol. XI, pages 115, 116, and had great success with it in exporting tender apples. For instance, the Wealthy was a tender apple, and he had tried shipping it to the British market, each apple being packed in a separate compartment in this case, somewhat in the way in which eggs were sometimes packed for shipment. The report of the consignee was that the Wealthy was a "superb apple." In such a package he believed that the Wealthy and other such tender apples could be shipped with perfect success.

Mr. C. R. W. Starr, of Nova Scotia, speaking of the great apple of his Province, the Gravenstein, said that it had become popular in England, and was wanted in regular shipments to keep up the demand which had been created for it. Last year the crop of this apple had failed in Nova Scotia, and German Gravensteins had been imported, and these might henceforth prove to be strong competitors. Formerly it had been very profitable to ship Nova Scotia Nonpariels to England in the month of May, but now that Australian fruit had begun to come to the English market in the middle of April, it was found necessary to get the Nonpariels in before those began to arrive. He thought that apples ought to be sold in the British market by private sale, as is done with potatoes. An effort had been made in this direction in the interest of Nova Scotia fruit, and to some extent had proved successful. With regard to the ventilated barrel, his experience so far was unfavorable, on account of the foul air on shipboard, but possibly with well ventilated compartments, this would be obviated. For railway transit this barrel no doubt would have advantages, except in cold weather. Mr. Starr had tried the Cox's Orange Pippin as an export apple, but it was a poor grower and consequently paid less profit than some other varieties. The Newtown Pippin was less and less grown on account of its being so very subject to the scab, which made it unprofitable.

The following were the most profitable varieties to grow in Nova Scotia, viz : Gravenstein, Ribston Pippin, (on heavy loam, well drained), Golden Russet, King, Blenheim Orange, Nonpariel (in Annapolis Co.), Baldwin (not always satisfactory).

Mr. Fisk, of Abbotsford, spoke upon the adaptation of Russian fruits to our northern sections. Among those which have so far proved themselves most desirable are the Yellow Transparent, Charlottenthaler, Red Astracan, and Duchess. Of these the Duchess has been very widely cultivated and very popular, but among the later introductions are some which are still hardier and more productive. What is most needed now is a hardy long keeper, of good quality.

Mr. Allan said that many varieties were hardy up to the time of bearing, and after that, on account of exhaustion by bearing, proved tender.

Mr Brodie had found the Yellow Transparent very profitable. He had marketed them for the past two years and they had brought him as much as \$5 per barrel. He had marketed them as early as the 28th of July.

Mr. Shepherd said he had not found them to be fit for eating as early as that date.

In reply, Mr. Brodie said that he sold them at that time for cooking purposes.

Mr. Hamilton, of Grenville, Que., had tried the Russian Transparent, and with him it bore the second year after planting, and bore regularly. It was marketable, in his section, after the middle of July, and was a first-rate dessert apple after the tenth of August. He sold it at seventy-five cents a twelve-quart basket in Montreal, and it was reported to be nearly equal to a peach in flavor.

Mr. Jas Fletcher, of the Experimental Farm, gave a very valuable address on injurious insects, and in it he recommended kerosene emulsion for the leaf hopper. He said that he had found the use of sulphur also very effective, applying it in the same way as for mildew ; the fumes were unpleasant to the insect and kept it away. He advised the use of Paris Green for spraying trees, rather than London Purple, and thought that one pound to two hundred gallons of water sufficient for the codling moth ; and one pound to four hundred and fifty gallons of water enough for the curculio of the peach, as the leaves of that tree were exceedingly sensitive to this poison.

Mr. Shutt, chemist of the farm, read a valuable paper of "The composition of Apple Leaves," and showed, from analysis, that wood ashes was a most valuable manure for the apple orchard. He asked the growers if their experience corroborated his theory. Several growers present replied in the affirmative.

The Hon. J. G. Joly, of Quebec, read a very interesting paper on "An easy way of procuring Forest Trees for planting." He said that good trees could be purchased very cheaply from nurseries, but there are many diffi-

culties when the nursery is at a distance. Anyone could furnish himself with fine trees from the woods at a very trifling expense. Of course, trees taken from the forest suffer from the change unless taken up when very small and first cultivated in nursery rows. The best way is to take little seedlings from the woods with a trowel and grow them in the garden or in nursery rows, until they have grown good roots, after which they are fit for planting in the open field. In this way, any farmer with very little expense, may provide himself with an abundant supply of forest trees for windbreaks, shelter belts or ornament.

Mr. R. W. Phipps, of Toronto, took up the subject of "Windbreaks for Fruit Growers," of which he was convinced that there was great benefit. The Norway Spruce was much planted for this purpose; it grew very rapidly, but it was not sufficiently durable. The Canadian White Pine was better suited to the purpose than the Norway Spruce on this account; the White Spruce also promised to be very desirable.

For hedges, the Arbor Vitæ, sometimes called the White Cedar, is excellent for the vicinity of Toronto, near which place he had seen a thicket which was twelve feet wide at the base, and twenty feet high. Where it succeeds there is nothing better for the purpose.

BLACK CURRANT BORER.

SIR,—I am going to plant about four hundred Black Currant Plants, Champion, on black soil. Will that suit Black Currants? Can you say anything about the borers that trouble these bushes? An answer would oblige me very much. JOHN MILLEROW, *Orono, Ont.*

Black Currants should succeed well on the soil spoken of. We find that as a rule the currant is more fruitful on heavier soil, providing it is not too heavy to be easily cultivated, and kept fine and porous.

The borer does not affect the black Currant bushes quite as badly as the red and white; but still it does affect them seriously, especially the imported Currant-borer, called by Entomologists, *Ægeria tipuliformis*, and to this species we will devote a few lines.



FIG. 39.

The moth (Fig. 39.) is a pretty wasp-like creature, measuring about three-quarters of an inch from tip to tip of its wings. The color is bluish-black, and the wings are transparent. It may be seen in the month of June, flying about, and seeking suitable places in which to deposit its eggs. These, says Prof. Saunders in his excellent work on "Insects Injurious to Fruits," are laid near the buds, where in a few days they hatch into small larvæ, which eat their way to the centre of the stem, where they burrow up and down, feed-

ing on the pith all through the summer, enlarging the channel as they grow older, until at last they have bored out a hollow several inches in length. When full-grown, the larva (*b* Fig. 40.) is whitish and fleshy, of a cylindrical form, with brown head and legs, and a dark line along the middle on its back. Before changing to a chrysalis, a passage is eaten through the stem, leaving merely the thin outer skin unbroken, thus preparing the way for the escape of the moth.

Within this cavity the larva changes to a chrysalis, (*a* Fig. 40, where both larva and chrysalis are shown magnified.) Early in June the chrysalis wriggles itself forward, and, pushing against the thin skin covering its place of retreat, ruptures it, and then partly thrusts itself out of the opening, when in a short time the moth bursts its prison-house and escapes, soon depositing eggs, from which larvæ are hatched and carry on the work of destruction.

While this insect chiefly infests the red and white currant, it attacks the black currant also, and occasionally the gooseberry. Where the hollow stems do not break off, indications of the borers may be found in the sickly look of the leaves and the inferior size of the fruit.

The writer has found this insect very troublesome, especially in the red currant bushes, almost every stem of wood over two years old soon putting on a sickly appearance, and, on cutting, is found to be hollowed out by this borer. If we were to follow the tree form of pruning the currant, as practiced in England, our plantations would soon become worthless, but by growing it in bush form, renewing the stems every year or two, and keeping up a constant succession of new growth from the ground as we do with raspberries, no trouble need be apprehended from this enemy. The old and feeble wood should be cut away in spring or fall and burned, and thus the chrysalis is destroyed before it has issued from the stem for further mischief.

The American Currant-borer is not so destructive as the former, and consequently need not be described at length. It belongs to the family of beetles, (*Coleoptera*), while the former belongs to the moths, (*Lepidoptera*.) The larva has much the same habits as the imported borer, but is smaller and has no feet, and several are often found in the same stock. The beetle is shown in Fig. 41, where the left hand drawing shows its natural size, and the right hand one is magnified to show its characteristics. The color is brownish. The same method of warfare that is successful with the one, is also successful with the other.

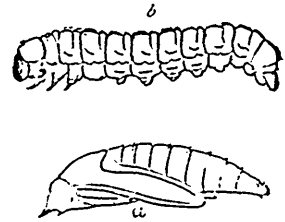


FIG. 40.—CURRANT BORER.
a, CHRYSALIS. b, LARVA.

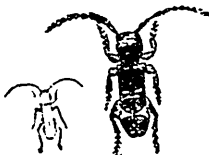


FIG. 41.

THE EVENING GROSBEAK. :

A VERY rare and beautiful bird has in considerable numbers lately visited this part of the country making the trees look gay with their beautiful plumage.

On the authority of Thomas R. Jones, it is called the "Evening Cherry Hawfinch" (*Hesperiphona vespertina*). It inhabits the almost unexplored northern parts of North America and has rarely been found east of the Saskatchewan. A few instances are recorded of their having been seen and a few specimens obtained in Western Ontario, but they have never before been found so far east as Kingston. Doubtless they have been induced to visit this section through the exceeding mildness of the winter weather.

By the Indians, this bird is called the sugar-bird. The name of "Evening Grosbeak" may have arisen from the popular belief that their song is only heard in the twilight, although in fine weather it may be heard during the day time.

These birds are about seven and a half inches long, not quite so robust as the pine Grosbeak, who is also visiting us just now in large numbers. They seem to be of a social disposition, as they are rarely to be seen except in companies.

The male is a very showy bird, with his body of yellowish olive and greenish yellow, his bright golden underwing and tail coverts, his wings of black and white, golden forehead with line of gold extending back over the eyes, all the various colors being so blended as to greatly enhance the beauty of the whole coat. He has a large strong yellow beak and slender feet.

The dress of the female is not so bright as that of the male, but she is perhaps more prettily marked on the wings and tail.

They seem to feed chiefly on the buds of the pine and spruce trees, but we observe them in search of the seeds of the cones of those trees and we have seen them eating red cedar berries, and they are said to consume the larvæ of the black ant.

Their cry when in search of food is of a melancholy sound, differing much from the sound of any other bird we have ever heard.

This bird we reckon as among the greatest rarity in our collection.

Fine mounted specimens may be seen with Mr. Stratford, taxidermist, Kingston.

Cataraqui, Ont., January 28, 1890.

D. NICOL.

PLAIN HINTS ON FRUIT GROWING.—I.

APOLOGY FOR WRITING THEM.

AS we take a glance at the operations of the farming community in general, and estimate the amount of capital, time and attention devoted to the promotion of the several lines of industry which make up the life of the farmer, we are struck with the fact that a very small share of effort is appropriated to the noble occupation of fruit growing, compared to the other branches of general farming. There are a few marked exceptions, it is true, and it is a great relief to the eye and attention of the horticulturist, or one who loves the work to find here and there as he travels through the country, a tastefully laid out fruit garden, and a neatly cared-for orchard, evincing taste and judgment in arrangement, and some evidence of outlay of capital and labor.

But there is no reason why this branch of farm industry should be neglected, and to serve as a stimulus to its furtherance, simple hints and details, set forth in plain language, ought to be freely circulated throughout the length and breadth of the land. Much is done, it is true, through the medium of papers and periodicals, but every farmer cannot be induced to take a paper or magazine devoted to agriculture in general, much less one devoted to horticulture alone. It is to assist and encourage any who are willing to be taught, that the following brief hints are put forth. They are the result of much observation and some practical experience; are written for the novice in the art of fruit growing and *not* for the experienced horticulturist, but if any such see anything in these hints to profit by, the writer has no objection.

And now to my would-be fruit-growing reader, let me say, that the first individual I wish to introduce you to, is the nomadic irrepressible nursery agent. Of these, there are two general classes, *viz*: scamps and honest men. The former will talk you into buying, if he can, every kind of every variety of fruit which is beautifully represented in his canvassing book, as he temptingly displays it to your admiring gaze. He will try to make you believe that each variety is the *best*, whether it is suited to your climatic locality or not. His aim is to *sell*, and he intends to do so *at all hazards*. He has but little regard for your success with the stock he palms off on you, his chief regard is for your signature to his order book; that once obtained, he has got you for the amount to which that signature is appended. But there are *honest* men engaged in selling nursery stock for reliable firms, who will give you fair value for your money, by advising you what to buy suited to your locality, and will give you your stock *true to name*. It is your privilege to discriminate between these two classes of individuals, and with a little care and caution, you can easily do so. The reason why I mention

the nursery agent, is : I am sure much injury has been done to the fruit-growing industry, through the greed of unprincipled agents, and would caution you against such. But a lengthy apology is not necessary to a brief effort, and we will take up what seems next in order to secure success in fruit culture and that is :

PREPARATION OF THE SOIL upon which to grow fruit. One requisite is necessary to the growth of all kinds of fruit, and that is, thorough drainage. If you attempt without it, you will end in failure, and that will discourage you. If you have a piece of sandy loam, with a gravelly subsoil, it may serve to attempt on without much draining, but all soils where clay enters largely in their composition, must be underdrained ultimately, or you need not expect success. While your trees are young, or if you only attempt small fruits, surface drains may do for a time, but it is economy ultimately to underdrain, say two and a half or three feet deep. Many who have desired to grow fruit, have neglected the necessary precautions in the choice and preparation of the ground, have failed and become discouraged. To such we say, try again with proper treatment and you will succeed.

ORDER YOUR TREES for the Spring delivery as a rule. Why? Because you avoid the risk of damage by mice or other accidents, and you can have your ground ready to plant them in on their arrival in the Spring as you unpack and thus save labor. If you do order for the Fall delivery, care must be exercised in burying them. Choose a dry ridge, away from any mice harbor, as fence, out-buildings or stumps; dig a trench, say two feet wide and two deep. At one end have a slope of a foot or so, that the first trees you lay will have the top at least a foot above the root, bury that layer with dirt enough to cover well, then two or three more with the same incline, until your stock is done; raise a little ridge over them that you may know just where to dig for them in the Spring, carefully removing the earth first from the last layer you put down, taking up the root first, that you may not mar the body or top. Before planting

PRUNE YOUR TREE WELL. Cut back any long tap roots. This will cause more fibrous or fine roots to grow on the main ones, and these fibrous roots are the true feeders of the tree. Cut off any marred roots if you can do so without lessening the volume of your root too much; and then prune the top back to balance with the root, as the main thought in pruning is to have a healthy balance between the root and top. The secret of growth in your tree, lies in the ample supply of sap which the roots feed out of the ground and send upward in the tree, and if you leave more top than the roots can feed and nourish well, your tree will languish and perhaps die. Do not expect your newly transplanted trees to carry the same top that they have when you receive them from the nurseryman, as if you do, and fail to cut back the top, your tree will not recover the transplanting and become a healthy tree.

DIG THE HOLE FOR YOUR TREE, large enough and deep enough, to let your tree down as near the same depth as it was in the nursery, giving it ample room so that when you set the tree in the hole, there will be no cramped roots, and as you fill in the loose dirt, carefully shake up and down, that the loose dirt may work under and around the roots well and *exclude the air*, as any air left under the roots, will cause them to mould and prevent them feeding the tree with sap. In digging the hole, throw your top soil to one side, and the subsoil to the other, and as you fill in, throw in the top dirt first, and your subsoil last, as the top dirt is usually the richest, and will nourish the roots best. After you have filled the hole with loose dirt and got it well settled around and under the roots, tramp in well with both feet, each side of the tree at the same time, this will firm your tree evenly, then fill loose dirt over your tramping and leave the top loose and it will act as a mulch until further treatment, which I will try to describe later on. Experience has taught me, that these little precautions have well repaid their observance, and you had better take time and set what you can *well* in a day, than to hurry them in the ground as is often done, and lose half your trees through sheer carelessness. I would advise you to choose a slope to the north upon which to set your orchard, if possible, as the frost will remain longer in the ground in the spring, thus preventing too early flow of sap until the cold blasts are past. If you cannot have a north slope, you will do well to throw long manure around your trees any time after the frost sets in, and thus retain it in the spring. You may think these precautions too much trouble, if so, do not spend your money and time attempting to grow fruit. There is no excellence in any line of life, without labor and care in *some way*.

Nepan, Ont.

L. FOOTE.

APPLES FOR EXPORT.—II.

ANOTHER thing is the "grading" of the fruit. This should not be overdone but where the quantity of any one variety admits of it, a judicious selection of sizes and colors will be to the advantage of the exporter. Each lot should be distinguished by the brand and so advised on consignment note.

Another point of great importance is tight packing. This doubtless, most growers are aware of, yet we must urge it again, as some either do not know, or do not practice.

We well remember a small lot of apples, sent by a private party from New York to our care. No doubt the fruit must not be crushed (so thought the sender), so when opened, the barrels were but three parts full, and fit for little but the manure heap. Even with consignments of experi-

enced shippers do the hateful slacks appear, which tell so severely on the average returns. We presume that hydraulic presses are the best means for forcing the bottoms of the barrels into their places, but where they are not available, we have no doubt that the ingenuity of the Canadian farmer will devise the means, on being acquainted with the necessity. We now come to our last head on which we shall have little to say.

VARIETY is a wide subject, and one into which many considerations enter with the grower. Having satisfied himself, (and this should be before a tree is planted) of all or most of the varieties suitable to the climate and soil of his farm, and of the cropping qualities of each, which with the CANADIAN HORTICULTURIST in his hands, and the co-operation, so willingly given of its Editor and Staff, he ought with comparative ease to do, his next consideration in choosing his stock of trees is the marketable values and keeping qualities of their produce. There are many varieties which are so well known that we need hardly mention them, such as the "King," "Northern Spy," "Baldwin," "Russet," "Greening," etc. We would urge, however, that of these, *quality* rather than quantity should be aimed, at in their production. For while quality always commands the market, quantity alone often drags it. The early varieties often reach this country in a soft, sometimes almost "mealy" condition, and many have been the disappointments over the beautiful "Blush Pippin," and kindred varieties.

To grow these crisper and juicier, should therefore be the aim of our American friends. These remarks also apply to that much-prized apple the "Snow," which, when bright, clean and sound, always commands a good price, but how often does it shew far otherwise. The "Ben Davis" deserves more attention, being showy and a fair keeping variety, but it needs flavor. Notwithstanding this defect, however it secures good prices when color and size are right. The "Ribston Pippin," too, does well when samples are fine, as Nova Scotian shippers know to their advantage. Another variety we should like to see more of is the "Spitzenberg," a really good market apple, and one in great demand, when fine as to size and color. The "Seek-no-further" is a good variety also, though apt to be small. Then the "Cranberry Pippin" deserves special mention, with its finely streaked cheek, and agreeable flavor, and good market qualities. Amongst the culinary sorts the "Twenty-ounce Pippin," "Fallawater" and kindred varieties command a good price, when size is right. "Sweets," seldom if ever do well, and should be discarded as indigestible rubbish by the farmers. To our mind there are too many varieties, and whatever the grower, for private use or local consumption, may think and do, we would counsel the produce for export to limit his production to comparatively few, well-tried kinds; believing he will be the gainer thereby.

We must now close our paper conscious of many shortcomings in our handling of so large and important a subject, yet if what we have said helps

one single fellow-traveler o'er the sands of time in his life-battle, its object is gained. The demand for fruit is steadily increasing. Fruit as an article of food, and not merely of luxury is rapidly, growing consumption, bringing its own results.

The field is a wide one, and the intercourse between countries and nations thus engendered cannot fail—where each conscientiously meets each—to bring a measure of prosperity and happiness to all within its pale.

Edinburgh, Scotland, January, 1890.

WOOD, ORMEROD & CO.

A FEW GLEANINGS ABOUT MY FAVORITE STRAWBERRY, AND WHAT OTHER GROWERS SAY ABOUT IT.

WHAT a constant improvement in this fruit has been going on of late years, and that in some cases so great has been the change as almost to constitute new specimens, is too well known to need more than the mention. Notice the origin of the many magnificent varieties of the improved strawberry. They all owe their present excellence to the improvement wrought in them by intelligent hybridization and cultivation. How long and to what extent this process of improvement can be continued is a question more easily asked than answered: and another, equally important, is whether some of the standard varieties of old-time favorites have in reality degenerated.

I truly believe that the strawberry, with proper management, is as productive as it was thirty years ago. Careful cultivation and the season of blossoming have all to do with the crop. Extreme wet weather during the blossoming is a detriment to the crop. But let us perform our part properly and nature will do her part. Then we will have far less to complain of. Some varieties seem better adapted for some soils than others. Thorough culture and plenty of manure, judiciously applied, will make the road to success.

The following are our own and other people's opinions about the first to ripen and the best of the new strawberries. The queen of strawberries is the *Jessie*: there is no doubt about its being the finest large berry in cultivation (*Prairie Farmer*). The *Jessie* stands at the head of one hundred varieties as the best large producing kind that is perfect in blossom.

Bubach's No. 5 is big, productive, will pay to raise for near market as well as the *Jessie* (*Farm and Fireside*) *Great American*—This is the finest, large shipping berry we have yet seen, and brings the most money of any we know. *Stayman's No. 1*—We find this an excellent grower and bears a

wonderful lot of berries. The same can be said of *Miami* and *Viola*. These three have the finest roots on strawberries we ever saw (*Am. Farmer and Hort.*)

Which is the coming strawberry? asks the *Prairie Farmer*. We have columns of reports and there is great unanimity in placing the varieties as follows:

Jessie, Eureka, Mrs. Cleveland, Bubach's No. 5, Warfield No. 2, Haverland, Gandy; these, as reported from Kansas to Canada and from Missouri to Ohio, accord in the main with this verdict. These are the berries for the grower and the shipper.

Granton, Ont., February, 1890.

JOHN LITTLE.

THE RELATION OF BEES TO FLOWERS AND FRUIT.—III.

BEES are at once florists, hybridists and fruit producers. The value of their work may be measured by the food value of fruit to man. Let us glance at her work in the production of apples, which from a utilitarian point of view, has no equal among the fruits of this country. The better to understand the part she plays in their production, we must look at the flower. It has a calyx with five lobes; this calyx, when developed, constitutes the edible part of the apple. It has a corolla with five spreading petals. The flower is hermaphrodite, but incapable of fertilizing itself, from the fact that its stigma matures before the anthers. The ovary is inferior and generally presents five cells, with two ovules, which are arrested in development at a very early stage. These cells correspond to the five lobes of the calyx. The apple is, strictly speaking, a fusion of five fruits into one, and demands five distinct fertilizations to make it perfect. The wind doubtless assists in the work of fertilization. So may the moth and other winged creatures, to a limited extent; but the major part of the work devolves upon the bee, which, while flitting from one flower to another, gets dusted completely with pollen, the granules of which are transferred to neighboring blossoms. If three or four only of the five stigmas, get pollen dusted (which is often the case) we will have an imperfect fruit, for nature refuses to do unnecessary work, and will not build up the lobes lying opposite the unimpregnated stigmas. That side of the apple, only, which lies opposite the fertilized stigmas will develop and we will have a fruit with a flat or hollow cheek. The vitality of such apples is not as great, nor their hold upon the parent tree as firm as those fully fertilized; the result is, they rarely withstand a moderate breeze. A moderately disturbing cause will detach them from their stems, and they fall to the ground before they are ripe. This may be proved by picking up a basketful of windfalls in the

early autumn. Upon examination most of these will be found to be hollow-cheeked, imperfectly-formed fruit; cut one of these hollow-cheeked windfalls through the core and an undeveloped shrivelled pip will be found lying opposite the flat undeveloped lobe, while opposite the perfectly formed side of the apple we will get plump seeds; thus proving that imperfect fertilization causes more windfalls than stormy gales. When fruit trees bloom profusely and fail to set fruit, Jack Frost gets blamed for the failure; but he is not always guilty. It may be cold enough not to injure the blossom, but too cold to permit insects to fly freely. If this happens at the critical time a short crop is sure to follow. The extent of our indebtedness to the bee for our apple crop may be determined by putting a piece of gauze over a blossomed branch so as to exclude insects from the flowers. The result will be no fruit, while neighboring branches may be loaded.

The work of the bee, as a producer of fruit, is not confined to the apple, but equally essential to the growth and perfection of raspberries, strawberries and blackberries, as well as to most of our vegetables; indeed, her range of usefulness is co-extensive with the floral world. Mainly, however, to that part of the floral world, rich in its wealth of color, scent, and nectar.

Watching a bee work upon a raspberry, strawberry or blackberry blossom is an interesting study. Alighting upon the solid part, encircled by the petals, she moves round say from right to left—to use a military phrase—she “carries the right shoulder forward” while collecting the tiny specks of nectar lying between the druples, and continues this movement till she makes the circuit of the flower. Observe the result. The left side of the head shoulder and bell gets dusted with pollen, which is carried to the next flower visited, where she again performs her circuitous movement, this time hovering in the *opposite* direction, for she now “carries the right shoulder forward” collecting pollen on the reverse side of the head shoulder and belly. While that on the side now loaded is detached by the springing and jerking of the styles over which she necessarily passes and drops where it is required. So she visits flower after flower, making alternate circuits as she goes. There is more than chance in these peculiar movements—there is design. When we consider that a raspberry requires some fifty or sixty distinct fertilizations, and a strawberry from one to two hundred to insure a perfect fruit, we will understand the importance of the bee’s movements while working on the flowers. I am mindful of the fact that other agencies are employed in this work, but to the bee is due most of the credit. This is abundantly evident from the fact that late in the season, when the weather is unpropitious for the bee, and when she is less afield, we frequently meet with berries—one side of which is ripe and luscious, while the other is as hard and green as when the blossom drops. In such cases the developed stigmas were duly pollenated and this determined nutrition to

them. The bee not having completed her circuit, the part unvisited remains hard, green and shrunken.

There would be less necessity for the strawberry-grower to alternate his rows of plants with pistillate kinds if he provided himself with a force of pollen carriers in the shape of a few hives of bees.

This is an exhaustless subject which I need not pursue further. If what I have written serves to insure "the little busy bee" a warmer place in the affections of fruit-growers than she has hitherto enjoyed, my object will be attained.

Owen Sound, February 21, 1890.

R. MCKNIGHT.

GRAFTING.

THERE are very many apple and pear orchards throughout Ontario which are unprofitable on account of the varieties planted. Many kinds also, once profitable, are so no longer on account of the apple scab, as, for instance, the Fameuse, the Early Harvest, and the Fall Pippin.

Now any man, who has a little skill in the use of tools, can easily transform such trees to kinds that are valuable, by grafting; an art by many looked upon as difficult, and invested with many secrets.

The first thing to do is to secure scions of the kinds wanted, for these must be cut while the buds are yet dormant, and be laid away packed in earth, or in fresh sawdust, until needed. If near a good city market it will pay to grow a few such fancy apples as Red Astracan, Duchess and Wealthy, and scions may be secured at a very small cost, from almost any of the nurserymen who advertise in our columns.

Apples and pears may be grafted much later in the season than stone fruits, for while the latter may be done as early as possible in the Spring, the former need not be done until the last of May, or even the early part of June.

Cleft Grafting is the usual method, and for the smaller limbs it is the best. For this, the tools required are a sharp saw for cutting off the limbs where the graft is to be inserted, a sharp knife to sharpen the scion, a grafting chisel, such as is shown in fig. 41c, to open the cleft where it is to be inserted, a mallet to drive the chisel, and a small kettle, with a lamp so fixed in it as to warm the water in which the wax is placed till needed.

Our illustrations will represent the process. The scion, fig. 41b, is bevelled equally on both sides, with the outer edge if anything a trifle thicker than the other to ensure firm contact between the cambium layer of the scion and the stock. It is an advantage to have a bud on this edge as shown if the stock is small, one scion may do, as in the engraving; but if

large, it is better to have one on each side, and thus if one fails, the other may succeed.

The stock should be smoothly cut across with the saw, and then split with the grafting chisel, the narrow projection on the back of which is used to open the cleft for the insertion of the graft. All the cuts are then covered with grafting wax and the work is complete.

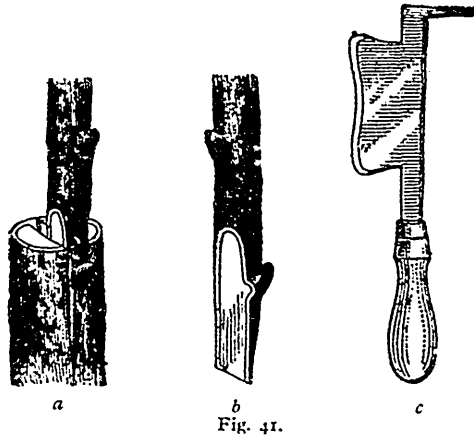


Fig. 41.

four pounds of resin. The resin and the beeswax should first be melted together, and the tallow or oil be added, when the whole should be well stirred up together. The mixture is then poured into cold water, and when cooled, worked by hand until ready for use.

A very simple method of grafting has been most successfully practiced by the writer, at Maplehurst, during the past few years, which requires very little skill, few tools and no wax. An illustration showing it appeared in the *Rural New Yorker*, under the name of *Crown Grafting*, which engraving we have copied, because it shows the process so well that very little is needed in the way of description. One advantage of this method is that it may be used on limbs as large as six inches in diameter, and on trees of considerable age, for as the wood is not split the wound is the easier healed.

In fig. 42 *a*, is shown the stock cut, and prepared for the insertion of the scion, the cut down the bark simply reaching through the wood. At *b*, is a scion, beveled on one side only, which is the side to go next the wood. At *c*, the scions are set, but

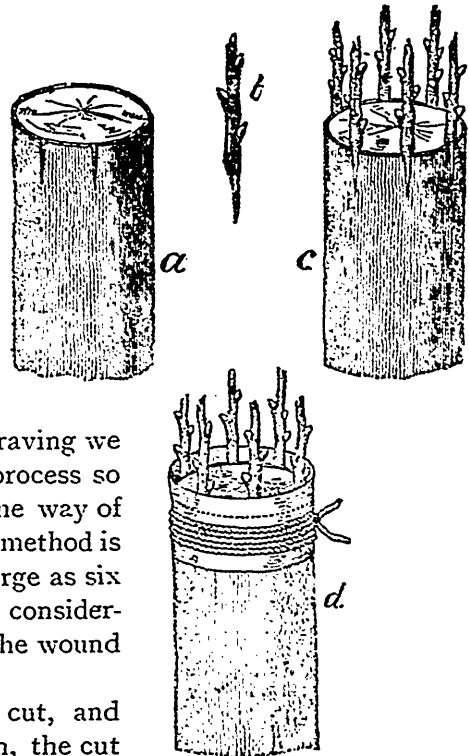


Fig. 42.

only a very large limb would need as many as are here represented; the writer has found two or three, in most instances quite enough, since nearly every one lives. At *d*, is shown the same, wound with stiff manilla paper, and tied firmly with a string. The paper is made to project upwards about half an inch above the cut, and the basin thus formed is filled with mud, which will dry and remain until the wound has begun to heal over.

The grape vine, too, may be easily grafted, and a knowledge of this may transform a profitless vineyard into one of great value. This work must be done early in the season before the buds begin to swell. The scion should be about six inches long, and is inserted very much in the same way as described for cleft-grafting the apple, except that the old vine is cut some three or four inches below the surface of the ground, and that no grafting wax is used. Instead, the cleft stock is tied with a string (Fig. 44), and the earth is carefully heaped about the scion so as to leave but one bud above the surface.

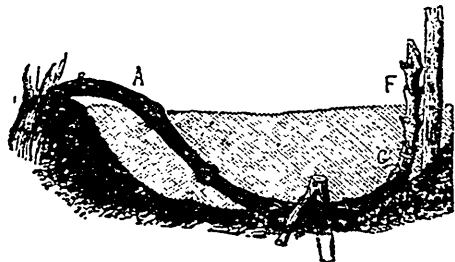


Fig. 43.

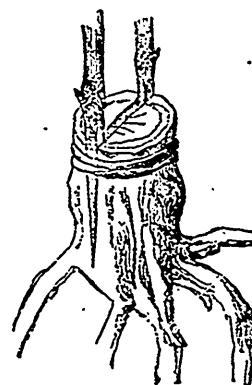


Fig. 44.

In case the old vine is too knotty for cleft-grafting, the work may be accomplished by splice-grafting a smaller branch, as is shown in fig. 43. This is done at a distance of two or three feet from the stump, at *g*, and the grafted branch is then laid down and fastened in place with a peg. The earth is pressed about the scion, leaving a bud above the surface, which is the only one that should be allowed to grow.



Fruits

THE FRUIT POSSIBILITIES OF ONTARIO.



IN the year 1864, I dropped into an orchard in Central New York State to witness some apple packers barrelling fruit for export. A number of the neighboring farmers had turned in to assist in the operations, and, being but an on-looker myself, I made some casual observations about the quality of the fruit, as compared with similar varieties produced in Upper Canada. The operators looked at me with evident surprise, one farmer remarking "I did not know that you could grow apples over there, at all. I thought the chief products of Canada were peas, barley and turnips." This may seem an exaggerated case, yet it serves to show with tolerable correctness the prevailing opinion among our near neighbors at that time, with regard to the possibilities of fruit production in this country. However, that idea has largely passed away with the lapse of years, and with the more general dissemination of Continental information our cousins across the border have come to regard the Canadian apple as a product not to be despised, nor its native soil a land to be estimated alone by its peculiar adaptation for turnip culture.

But much as has been learned in connection with horticulture during the past twenty-five years, and great as has been the progress made in the now important industry of fruit growing, Canadians have not yet fully appreciated the possibilities of their own country as a fruit producing section. This is a great country, take it as a whole, and I have no hesitation in saying that there is not another section of equal extent on the North American Continent to compare with this western peninsula of Ontario for the production of the hardier fruits. You may fancy that I have suddenly become an enthusiast in this line, but the fact is, I have been impressed with these convictions for some years. My recent observations while attending the farmers' Institutes in several counties north and south, did much to strengthen my former convictions, and I have no doubt the observations of my fellow directors of the Fruit Growers' Association, including the President and Secretary, who were likewise attending these institute meetings in the interests of fruit culture, led them to like conclusions. They should each and all give us the benefit of their observations through the medium of the *HORTICULTURIST*, a publication which we are now justly proud of.

I may on a future occasion deal less in generalities and give your readers

some of my impressions regarding the fruit possibilities of Elgin, Bruce, Grey and Simcoe counties. In the meantime my firm conviction is that for solidity and crispness in quality, freedom from worms and destroying insects, for beauty in color and smoothness of skin, there is no apple produced in America to surpass that grown in western Ontario.

Mitchell, March 12.

T. H. RACE.

“AN ESTIMATE OF APPLES.”

IN the February No. of the CANADIAN HORTICULTURIST, page 46, may be found a long quotation from an article published in an American paper, from the pen of Dr. Hoskins, of Vermont, with an introductory note by the Editor.

Why a whole page of this Journal, which is published in the interest of the people of Ontario, should have been given to this article is not apparent, for there is not one single sentence in it that can have the most remote beneficial effect on our people. On the contrary, it can only affect us injuriously; and, it is also calculated to produce an unfavorable impression in the minds of persons in other countries. The whole paragraph, from beginning to end, is unjust to our country, and in part untrue.

That Ben Davis is a leading market apple in the Mississippi valley, or, that it “is indeed entitled to stand first as the great American market apple” is of no special interest to us. If an apple of such inferior quality as the Ben Davis suits the taste of “the great American people” we can only pity “the great American people.” It is not good enough for us!

The statement that the Baldwin is a failure north of 43° is not true so far as this province is concerned; and I think if a Canadian should tell the people of the State of New York that Baldwin apples cannot be profitably grown north of a line passing east and west, touching points twelve or fifteen miles south of Utica; five or six miles south of Syracuse; fifteen or twenty miles south of Rochester, and about ten miles south of Lockport, they would certainly think him an ignoramus. The points indicated are nearly on the line of the 43° of N. latitude. The same degree of latitude passing west through Ontario would touch Welland, Cayuga, a point about thirty miles south of Hamilton, and on through London and Sarnia. Will not apple growers throughout central Ontario laugh at the idea of being told that the Baldwin apple cannot be successfully grown north of the line indicated? Yet this is what we are told by this “excellent authority on pomological matters.”

We are also told that the discovery of the Wealthy apple “has extended profitable apple culture at least 100 miles further north.” If this were a fact,

our people would speak of it with pride. But no intelligent Canadian will make such an assertion.

Is it not strange that there are yet American writers who are not aware that Canada is greatly superior to the United States as a fruit-growing country? The lessons learned by so many eminent Americans at the American Pomological Societies' Exhibition at Boston, in 1873, and at the Centennial Exhibition at Philadelphia, in 1876, seems to have been lost on this class of writers.

Lindsay, April, 1890.

THOS. BEALL.

APPLE GROWING PAYS.

SOME say last year apples were a drug, and worth nothing. Partly true, although I sold 700 barrels, which netted me \$1.40 per barrel, or \$980, and my orchard being about six acres, that means \$163 per acre. This year you will have no reason to complain of the want of a market. Apples were a failure nearly all over, but like the merchant we must take one year with another, one poor year shouldn't discourage us. Apples are wholesome. You all like them, in fact you must have them. If you don't raise them, you pay your more plucky neighbor to do it for you. They save food, and reduce the doctor's bill, and when we get this reduced to a minimum, if there are any doctors here to-day I can assure them we will willingly by voluntary subscription pay them well, for keeping us well. This year, Mr. Raymond, of Dickinson's Landing, gathered 2,000 bushels of apples, and sold none of them under \$1.00 a bushel. Deducting \$4.00 for expenses, he will have a net profit of at least \$1,600 from six acres.

Mr. Dempsey, of Trenton, an experienced and extensive orchardist, says we can safely calculate, one year with another, when trees are arrived at their full age, on \$100 per acre profit on the orchard.

On the principle that it is not good to have all your eggs in one basket, we would say plant an orchard. Your grain may rust or be destroyed by the fly or other insects; potatoes often fail you; corn sometimes does not ripen. You say there is a great deal of work about an orchard. So there is; but the heaviest part of it comes at a comparatively slack time. There is work, hard and hurried too in ploughing and sowing your wheat land, and in clearing and taking your grain to market.

Aultsville.

JOHN CROIL.

PROFITABLE APPLES.—“Wealthy” is the most profitable, with “Duchess” second. At twenty-five cents a bushel “Duchess” will in ten years pay \$100 an acre.—*Harvey Fuller, Minn.*

THE "BEN DAVIS" APPLE.

THE *Maine Farmer* has the following to say of this apple:—"A small orchard of eight acres in Greencastle, Ind., is reported to have produced 6,500 bushels of "Ben Davis" apples which sold at sixty cents a bushel. Think of the misery entailed on mankind in the effort to consume that quantity of "Ben Davis" apples! This seems to us to be a short-sighted criticism. The "Ben Davis" is not an apple of very high quality—indeed, unless well-grown in a favorite climate, it is decidedly poor for eating uncooked. Nevertheless, it is the leading market apple of the great Mississippi Valley, and notwithstanding the hardiness, early bearing and productive habit of the tree, the market is rarely over-stocked with them. Grown where it is at home, it is large, handsome, an excellent keeper, a good cooking apple, and sells freely, even to the hundreds of thousands who know it well, for eating out of hand. We consider it quite as good for that use as the Roxbury Russett, a variety largely grown in Maine for export.

APPLICATION OF NITRATE OF SODA.

JOSEPH HARRIS gives some valuable hints, based on his own experience with Nitrate of Soda as a fertilizer for fruits and vegetables. He says:—"If we put on half the quantity of ordinary manure and sow broadcast 200 pounds of nitrate of soda per acre in addition, this will be fully equal to a good dressing of the very richest composts, and a great deal cheaper. I say nitrate of soda, because it is not only a cheaper source of nitrogen than sulphate of ammonia or the organic nitrogen in our different fertilizers, but the nitrogen is in just the condition necessary for absorption by the plants. I have used it with great advantage on peaches, strawberries, roses, currants, raspberries, asparagus, celery plants, potatoes, onions, beets, and nearly all garden crops. For several years we could not raise peaches. The leaves curled up and turned yellow in June and frequently fell off, and in a year or two the tree was dead. For two years the trees that have had nitrate have shown little or no symptoms of the disease, if disease it is. The leaves had that dark green, luxuriant color that is the characteristic effect of liberal manuring, and, better than all, we have had fine crops of peaches."

COAL ashes, if not too coarse, is one of the best materials to use in loosening up and making more friable a stiff hard soil. They can also be used to a good advantage as a mulch around the currant bushes, and also around peach trees.

Vegetables

HERRIED THOUGHTS (*fræ* Mr. Croil).

DEAR friend, I'd like to say a word,
 Anent your pithy letter; *
 'Twas quite the sort, for our "CAN. HORT",
 It could'na get a better.

I'll close my een, and think I see
 Your well-kept, lovely garden;
 And if I haiver † for a while
 You'll no be mad; guid Maister Croil,
 But gie old Gran your pardon.

I'll tak my staff and daunder ‡ west,
 For nature age is grand to me;
 Trellised bowers, and bonny flowers
 My heart aye dances when I see!

I love the sons o' Adam's craft;
 A fear nought stalwart member,
 Just such as Croil, give him tools and soil,
 He'd raise the Witch o' Endor!
 And make her grow, if she will or no,
 A lovely Oleander.

Ah! here is beans, dwarf German beans,
 All else is a delusion;
 Gie beans to weans! they make strong banes,
 I'll grow them in profusion.

There's cabbage, that ne'er fails to head,
 They may be soon or late;
 "Empress" I'll try, I'll tell you why,
 I hate an empty pate.

Here's Imperial beets, of pure blue blood,
 Royal, so I see;
 I'll sow *royal* seed, I shall indeed,
 Republic tho' I be.

Ah lovely celery for compound!
 Celery! there's enough!
 Graceful as a lady's fan,
 Crisp and tender, pale and wan,
 As e'er sprung frae the Sheugh †;
 Celery, says Dr. Paine, will "build the forces o' the brain,"
 (Even tho' we are born wi' nane!)

* See page 10. † Haiver, speak nonsense. ‡ Daunder, walk leisurely. † Sheugh, a ditch.

The peas ! I almost had forgot ;
 (But I'll not turn like Mrs. Lot).
 There's empty pods ; but gobbled marrows,
 Gobbled by dare-deevil sparrows.

I'll thrav * them craps ; why should I not ?
 I may be wrang, as I often am,
 But since ye ate my marrowfats
 And built a nest in my scare crow's vest,
 I'm advised to gie ye "rough on rats."

All winter I hae fill'd your wames, †
 Gied a warm cheemlie for your hames ;
 How could ye see me sair forfoughten, ‡
 Driving ye frae my peas sae often ?

Tae tak your lives I wadna ettle, ††
 Tae peck your wale § o' worms and settle ; ¶
 What ! refuse sic chuffie worms as these ?
 A mensfu ** treat to a braw Chinesee ;
 Trowth ! I canna say anither word,
 Or tulizie here wi' sic a bird.

—GRANDMA GOWAN.

NOTES ON VEGETABLE GARDENING IN MIDDLESEX COUNTY.—I.

1889 HAS gone, and with it many failures, both to the fruit grower and the farmer, which may help both to learn some very important lessons for the future, and to be prepared for any kind of weather that may come, whether it be extremes of either wet or dry, for we have had our share of both this last year. January was mostly very mild, but it closed up with snow, and then in February we got our winter, with one or two of the coldest days ever felt here. Then Spring came in cold and dry, followed in May by very severe frosts, which injured most of the fruit in this part. This was followed by shower after shower of rain, until every creek and river was taxed to its utmost to carry away the surplus water, often doing much damage to public roads, and also to garden crops and small fruits generally. This completely prevented the keeping of them clean, for the ground seldom got dry enough to be fit to work the hoe in it. Then came one of the driest harvests that we have had for some years, some days with the thermometer away up to 97°, and even as high as 102° in the shade, and now we have the warmest winter that I ever have seen. One year ago last Spring, I obtained a package of (*Bisse's Hybridized*) potato

* Thrav, twist. † Wame, the bell. ‡ Forfoughten, fatigued. †† Ettle, try. § Wale, choice. ¶ Settle become quiet. ** Mensfu, abundant.

seed, and from that I set out 310 plants, but, owing to some weeks of very dry weather which followed, I only saved 130 kinds. Some of them gave promise of being excellent yielders, but this last year has been so unfavorable to the potato crop, that they have to be further tested, so as to find what will be their merits or faults. I find for a potato that stands hardships best, that the Pearl of Savoy is the best of many kinds that we have yet tried. In Beans, I find the Dwarf Mont d'Or, one of the best for cooking green, as it comes in very early. For early cabbage, Extra Early Jersey Wakefield, and for late, Improved Drumhead Savoy are very good, with Winningstadt for a splendid midseason variety. I have tried most of the new kinds of Cauliflower, and find that, taking one season with another, Early Paris fills the bill very well, and as for lettuce, Premium Cabbage is as good as any. Beets show a great difference in quality and shape, according to the soil that they are planted in. Carrots seem to grow too large with me, but the Early Shorthorn is much the best. In corn, I have experimented to some extent, always preferring the earliest, and I am now selecting choice plants and ears from the Northern Pedigree Sweet, as a garden variety, and for field, Angel of Midnight as yellow, and a large white variety that we have grown for years ourselves, always selecting the best. I grow but few cucumbers, and I prefer the White Spine variety. Egg Plant, if well attended, and planted in a good warm soil, will well repay anyone for their trouble; Improved Long Purple is far the best. Melons were a complete failure this year, and is a vegetable that should not be used too freely. Onions. Every garden should possess a good supply of the English Multiplier, which is the best for early, and the Mammoth Silver King for late. Peas is one of our best garden luxuries; Alaska is one of the earliest, and McLean's Little Gem, Horsford's Market Garden, Prince of Wales, or Stratagem, do well to follow each other in succession as I give them here. I have grown several kinds of pepper, and am now back to the Long Red again. I did not grow any pumpkins, squashes, radishes, salsify or garden turnips this last year, but we had the richest tomatoes we ever had, and I find none better than the Acme. I have had, some years, as many as eight different kinds on trial, and I found that the Acme was one of the best, taking one season with another. The soil has a great deal to do with the variety, and often in the same garden, where two kinds of soil exist, it is interesting to note the effects on the same varieties.

East Williams, Ont.

J. M. W.



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.

THE BUBACH STRAWBERRY.—This variety is highly spoken of in the Report of the Indiana Horticultural Society for 1888 as being very productive and its berries uniformly large, of good flavor and fine appearance. The three best of the recently introduced varieties, which have been tested, are claimed to be the Logan, Bubach and Jessie. All are said to be strong growers and comparatively free from blight. The Logan is mentioned as being equal to the Crescent in productiveness. The largest berry was had from the Jessie; it was seven inches in circumference. In plant, berry and vigorous growth the Jessie was thought to be superior to the Sharpless.

PLANTING STRAWBERRIES.—In the same Report we find early spring planting recommended as by all means more likely to insure success than at any other season. Rather close planting is also recommended; Cumberland, Jessie and Sharpless as close as eight inches apart.

LUCRETIA DEWBERRY.—Mr. W. B. Walker, of Greenfield, read a paper before the same Society on the Lucretia Dewberry. He has been growing it since 1884 and has found it to be easily cultivated and very profitable. He sets them six and seven feet apart and cultivates chiefly with the plough. In

size, the berries average from large to very large and he considers it one of the handsomest and best blackberries grown. On account of its trailing habit, he uses a mulch of straw to keep the fruit from lying on the ground. The yield is from two to three quarts per hill.

HARDY PEACHES.—At the late meeting of the New York Horticultural Society the following varieties of peaches were spoken of as the most hardy, viz: the Early Rivers, Hill's Chili and Hine's Surprise. These can nearly always be relied upon for a crop. The writer has also found the Early Purple and the Hale's Early to be much more certain of a crop than the Early Crawford or the Old Mixon. It is to be regretted some of the very finest varieties are also the most tender. The prospect, however, for this season, in the Niagara district, is unusually encouraging; for all varieties are well laden with fruit buds which have come through the winter without injury.

THE FIRST TASMANIAN APPLES were expected to arrive in England about the 21st of April. It was at one time thought that these would compete with our late shipments in the spring, and so make it necessary for us to put our crop forward earlier than the date mentioned. But the freight from so distant a country is too high to allow them to drive

our apples from the markets of Great Britain, even allowing that the quality and quantity from that small island were to compare favorably with the Canadian. The freight charges are high from Canada to England, but from Tasmania it is at the exorbitant rate of 5s per bushel.

Just now, however, there is no need for us to export our long keepers, for the prices at home are unprecedentedly high, choice Russets and Spy bringing \$4.00 to \$5.00 in Toronto, and have even brought as much as \$7.00 per barrel in the city of Montreal, for extra fine samples.

USEFUL TOOLS.

AMONG all the tools for pruning trees there are none so useful as the large pruning knife and the fine-toothed saw. In pruning his three-year-old peach trees this spring the knife has been the only instrument needed by the writer. He has found indeed that he can prune out the dead wood and shorten in the young growth much more quickly with the knife than with any other instrument.

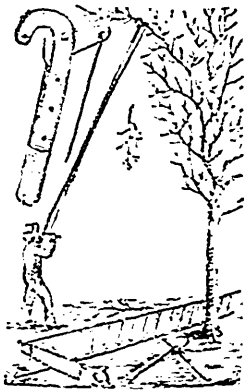


FIG. 45.

By climbing a light step-ladder one can grasp several of the small boughs in one hand and with the other lop them off, and the work is soon done. With older trees, of course, the knife is out of the question, and with them the writer has found no instrument equal to the Water's tree pruner (see fig. 46), for with it one can stand upon the ground and shorten the branches very rapidly. This is a very

important operation with the peach tree, for if it is allowed to grow its own way, as is advocated by some growers, the new growth will all come at the extremities of the branches, and the tree die of premature old age owing to the long distance through barren and sickly old wood, which the sap must travel to reach the growing parts.

We very strongly advocate the shortening in of the peach wood from the first year after planting, thus keeping the tree as much as possible in bush form; for in this way the tree will live to greater age and at the same time give the greatest amount of fruit. Some even contend that they find trees so treated less subject to the ravages of the yellows than those not so pruned, and we are experimenting with this in view;

but whether it will accomplish so desirable an end or not, certain it is that the trees well shortened in

are the handsomest ones in the orchard.

For the apple orchard, especially in the work of removing the suckers and of cutting out small limbs that cross, the combination pruner and saw, called the "Little Giant," is a very convenient tool, and will save a great amount of labor or climbing, and thus reduce the cost of the work. (See fig. 46.) By kind-

ness of Messrs. Johnson

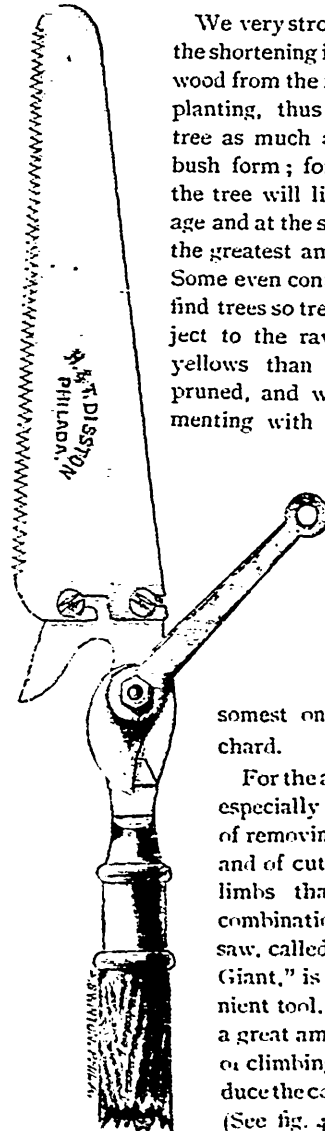


FIG. 46.

& Stokes we are able to give our reader engravings of two of these instruments.

❁ Question o' Drawer ❁

GRAFTING SEEDLING APPLES.

29. SIR,—I have a lot of seedling apples; should they be grafted in the ground or above, and is the wood of last year's growth old enough to use as scions?—T. A. G.

You may graft below on the root, or on the trunk above the ground. The former place is usual with seedlings, for then the splice is protected by the earth.

Nurserymen usually pull up seedling apple trees at the age of one or two years, or as soon as they reach a diameter of about three-eighths of an inch, pack them in sawdust in the Fall, and leave them in the cellar until they are ready to graft them. This is done in a grafting shop, indoors, and they are then packed away again in the same way until planting out time. It is rather late now to take them up, so, unless you splice-graft them at the surface of the ground, you will need to wait till Fall. Wood of one year's growth is just the right age to use for scions.

HARDINESS OF THE PRINCESS LOUISE.

30. SIR,—Please say in the next HORTICULTURIST, if the apple tree Princess Louise is hardy enough for our latitude, forty-five and a half: I do not find a word about its hardiness in your journal.—L. PASCHE, *Bryson Que.*

We do not know. It was to find out this that it was placed upon the list for distribution. It originated at Maplehurst, on the north side of what is known as the Niagara Escarpment, and is a seedling of the Fameuse; so that it is presumed to be as hardy as that variety.

SPRAYING OUTFITS.

31. SIR,—Please say what kind of a spraying outfit you would recommend?—A SUBSCRIBER.

IN reply to a good many inquiries about outfits for spraying trees, we here give a cut furnished us by Messrs. Johnson & Stokes of Philadelphia, representing the perfection

outfit, which is recommended as being the best hand-power for the purpose, and capable of spraying one hundred trees per hour. This pump is fitted with ten feet of discharge hose and a graduating spray nozzle, the above being attached to the pump at the spout "A". At the aperture "B," is attached

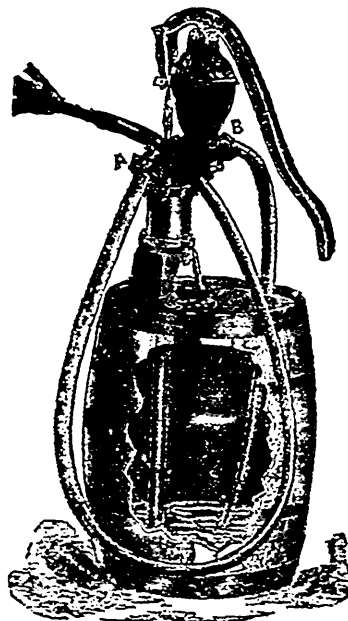


FIG. 47.

three feet of return hose, at the lower end of which is connected a discharge pipe, so that at every stroke of the pump, a small part of the liquid is re-discharged into the tank near the bottom of the suction pipe, which keeps the water and poison well mixed. The pump has a three-inch cylinder, and is furnished with an iron suction pipe, ready to mount on a barrel. This outfit complete without the barrel, can be had for ten dollars.

GRAFTING THE RUSSIAN APRICOT.

32. SIR,—Can a Russian apricot be grafted on a plum stock?—A. C., *Brantford.*

Stone fruits are not usually propagated

by grafting, as in most cases the operation will prove a failure, but they may be successfully budded in the Summer-time, as soon as sufficiently matured buds can be secured. The apricot is usually budded either on peach or on plum stock, and for hardiness, of course, the latter is much to be preferred.

SPRING OR FALL PLANTING.

33. I see a great difference of opinion regarding Spring and Fall planting. I have been planting in both Spring and Fall, for the last ten years, and always get the most satisfaction from Fall planting.—T. A. GATRIN, *Coldwater*.

Apple trees, especially hardy kinds, will usually do well planted in the Fall on well drained soil, and the earth well firmed down about the roots. But, under less favorable circumstances, it is safer to plant them in the Spring, in Ontario.

THE IDAHO PEAR.

34. SIR,—Is the climate of Idaho severe enough to ensure the success of the Idaho pear here?—H. EVANS, *Napanee, Ont.*

Although the latitude of Lewiston, Idaho, near which the Idaho pear originated is about forty-six and a-half degrees north, yet of course that means a warmer climate than the same in Ontario, which would be very nearly as far north as Quebec City. The thermometer, however, at Lewiston sometimes goes down to thirty degrees, *Fr.*, which is, we presume, as low as you get it at Napanee, and, therefore, no doubt the Idaho will succeed with you.

SEEDING DOWN THE ORCHARD.

35. SIR,—Does a vigorous orchard fifteen years old produce more fruit if manured and cultivated, or if seeded down and top-dressed?

The chief object in cultivating and manuring an apple orchard is to keep it in a vigorous condition of growth, and if that desired vigor can be maintained by seeding down and top-dressing, which in many cases it can be for two or three years at a time, it would be an advantage to do so. Indeed an orchard of that age growing vigorously, might by such treatment be thrown into good bearing in consequence of the slight check of wood growth which would result.

PLANTING IN POOR SOIL.

36. SIR,—If trees must be planted in poor soil, would it do to mix ashes or other fertilizer with it?—H.E.

We have been accustomed to use ashes only as top-dressing, applying them in May or June, just when the rains will take down the potash to the growing roots, while the remaining elements will become gradually incorporated with the soil.

MAKING A LABYRINTH.

37. SIR,—I would like to know how the Honey Locust would answer for hedges for a Labyrinth, or what would you think would be best for that purpose? Our Council has appointed me to superintend the work done in the park, and I would like to make a Labyrinth if the cost would not be too much. I was thinking about cedar, planted very close together; in England they use Box, but that would be out of the question in this country. I think it would be a great acquisition to a park, to have such a place in it, but I think it is not often adopted in this country.—WM. DOWNS, *Stratford*.

Reply by Mr. W. E. Wellington, Toronto.

1st. According to my mind, a Labyrinth should be planted with trees that will grow above the height of a person, or, in other words, so that you cannot see over the hedge. Of course it could be planted with low flowering shrubs with good effect. For a Labyrinth grown dense that cannot be seen over, either Spruce or Arbor Vitae is certainly the best, and about the only thing that can be planted in this country. For good effect for a low Labyrinth, nothing would equal *Spiraea Van Houtti* for strong growth, hardiness and handsome appearance when in flower, as I think it excels anything that can be put out in that line. Japan Quince would do, and the Tartarian Honey-suckles and Wiegels are sometimes used.

FERTILIZING AN APPLE ORCHARD.

38. SIR,—What would be the cheapest and best means of fertilizing land, of a light gravelly nature in which apple trees were planted two years ago, and where stable manure and wood ashes cannot be obtained in large quantities? The object being to induce good growth of wood, and to bring land into high state of fertility.—B., *Yarmouth, N.S.*

Reply by Prof. J. H. Panton, Ontario Agricultural College, Guelph.

This question is a somewhat difficult one to answer satisfactorily.

In the absence of stable manure, which among other things is so valuable for the nitrogen it contains, and of ashes, the source of potash, one is at a loss to name substitutes which will take their place economically. I certainly would advise to secure all of these possible, before resorting to artificial fertilizers. Even leached ashes are valuable, inasmuch that they have twenty per cent. of the potash still, and all the phosphoric acid. In the absence of the stable manure and ashes, the nitrogen of the one might to some degree be made up in the use of Sodium nitrate, Guano, or Ammonium Sulphate; these are ranked among artificial manures and are comparatively expensive. They should be applied only when the plant is able to take them up, as they are very soluble and soon pass away. The potash may be obtained in Potassium Chloride, another fertilizer, or in a mineral called "Kainit," which also contains considerable quantities of potash. I would suggest to the person putting this question, that all the urine from the animals kept be secured, as it is exceedingly rich in nitrogen, and may be of great value mixed in the manure.

GOOSEBERRIES DROPPING.

39. SIR,—What can be done to prevent gooseberries from dropping before they are ripe?—SUBSCRIBER. *Almira, Ont.*

Reply by A. Morton, Wingham.

I have noticed dropping off of two-thirds grown gooseberries. Examination has satisfied me that many of them are affected by a green worm which may, by the casual observer, pass unnoticed, but many are apparently sound and without mark, as stated. I have not extensively investigated the cause, but think it but an exemplification of the "survival of the fittest" in the struggle for existence. It is always greatest in heavily fruited branches and bushes, and considering the sufficiently large crops my bushes bear till maturity. This dropping off is not regarded as a calamity. I know of no remedy better than fertilizing with nitrates and potash will produce better crops. My

difficulty has been the other way, having to thin out for No. 1 fruit!

THE SALOME APPLE.

40. SIR,—Has the Salome apple been tested in Canada? Please give description.—H. E., *Napanee.*

We have not fruited this apple, and know of no one who has except Mr. Wellington, who has fruited it for two years at Fonthill, and says he finds it a handsome apple of fair quality. He considers it quite hardy. The fruit is described as of medium size, roundish, conical; pale yellow, slightly shaded with red, splashed and striped with dark red; flesh, tender, juicy, mild sub-acid. January to June.

GRAFTING THE CHERRY.

41. SIR,—Can cherries be root-grafted the same as apples. If so, what kind of roots are the best for the purpose, black, red or wild natives, will roots from old trees do, or would seedling be best?—A SUBSCRIBER, *Almira, Ont.*

Neither cherries, nor any other stone fruits, succeed well when root-grafted; the usual method of propagating varieties of these is by budding.

SCOTT'S WINTER APPLE.

42. SIR,—Will Scott's Winter apple average as large as the Snow?—H. E., *Napanee.*

Reply by R. W. Shepherd Jr, Montreal.

Yes, about as large as "Snow" or Fameuse grown under ordinary circumstances, but not as large as Fameuse grown here.

The "Scott's Winter" is undoubtedly a hardy tree, and bears abundantly every alternate year. Fruit keeps well into April; quality only "good"; an excellent cooking apple.

THE GOLDEN WHITE.

43. SIR,—I send you, per Express, one box containing scions of the Golden White apple, No. 978; also a few scions tied apart of an apple originated in this vicinity. It is as large as St. Lawrence, keeps better than Fameuse and good quality in the Fall. It has a bloom like a Decarie apple.—R. BROWN, St. HENRY, *Montreal, Que. March 20, 1890.*

We hope to have this very valuable Russian apple propagated for distribution next Spring.—EDITOR.

— Open o Letters —

MORE PARTICULARS ABOUT MR.
CHAS. GIBB.

SIR,—We received yesterday a letter from British Consul at Cairo, giving some particulars of poor Chas. Gibb's death. He contracted "La Grippe" at Aden, which developed into double pneumonia. He died at 3.30 p.m., on March 8th. The remains were interred at 3.30 p.m., on 10th, in the British Protestant cemetery, the mournful rite being attended by several friends. The funeral, in accordance with the expressed wish of the deceased, was a plain one. Poor fellow, we miss him greatly.—Yours faithfully R. W. SHEPHERD, JR.

THE HILBORN RASPBERRY.

I see by Mr. Lyon's article, he says he might use Gregg for market instead of Hilborn. He has not had them in large enough quantities to test for market; in fact, has none at present, and he has written me for all I could send him to get a start again. On my old farm at Arkona I had an acre of them planted, also an acre of Gregg by the side of

them, and a quantity of Souhegan, Tyler and Mammoth Cluster, all planted at the same time and have received the same care. The Mammoth Clusters failed and were dug out. The Hilborn begins to ripen about three to five days later than Tyler, and quite a nice picking is gathered every year after the Greggs are done, and they produce about one quarter more quarts than Gregg. They, of course, will not stand shipping to as great a distance as Gregg. They are better, however, in this respect than Tyler.

We have started an Essex County Horticultural Society. One feature of our E. Co. H. Society is an Experimental Ground for testing new fruits. The County Council have made a small grant of money for the use of the Society. They voted that it be used for the purchase of new fruits and handed over to me for trial. I shall therefore start an experimental plot this Spring. Shall be glad to have anything new or promising you can send me. Think I will be able to send you some new promising fruits in the Autumn, if you care for them.—Yours very truly, W. W. HILBORN.

NARCISSUS.

ARISE from thy slumber, lovely Narcissus,
The south winds now carol over thy bed;
Old Sol is waiting to greet thee with kisses,
You have nothing to fear now; Winter has fled.

The fearless wee Crocuses—Paradise immigrants!
Have arrived on our borders with God's message of peace,
And you, too, sweet Narcissy, must try to be diligent,
Improving Time's lessons, which never shall cease.

Your Sleepy old Sisters, Rose and Rose Mary
Have promised to visit me early in June,
I never have found the dear beauties contrary,
But timely arrayed in their queenly costume.

So bonnie Narcissus, hasten your toilet,
I weary to see you, don't tarry so long;
Bring with you your incense, sweet odorous Pilot!
And waft my old soul back to childhood and home.

GRANDMA GOWAN.

BOUND VOLUMES

Of the "CANADIAN HORTICULTURIST," in beautiful cloth case, handsome design embossed in ink and gold, with gilt lettering, for sale at this office.

Volumes 1 to 10, excepting 5, 6 and 9, which are out of print, at 75 cents each; Volumes 11 and 12, with numerous illustrations and fine colored plate, at \$1.25 each, post paid, 20 per cent. discount on orders of \$5.00 or upward.

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Owing to the increasing circulation, and growing demand on its space, it is found necessary to advance the advertising rates, according to the following code, which will be strictly adhered to:

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A so-called "Webster's Unabridged Dictionary" is being offered to the public at a very low price. The body of the book, from A to Z, is a cheap reprint, page for page, of the edition of 1847, which was in its day, a valuable book, but in the progress of language for over FORTY YEARS, has been completely superseded. It is now reproduced, broken type, errors and all, by photo-lithograph process, is printed on cheap paper and flimsily bound. A brief comparison, page by page, between the reprint and the latest and enlarged edition, will show the great superiority of the latter. These reprints are as out of date as a last year's almanac. No honorable dealer will allow the buyer of such to suppose that he is getting the Webster which to-day is accepted as the Standard and THE BEST,—every copy of which bears our imprint as given below.

☞ If persons who have been induced to purchase the "Ancient Edition" by any misrepresentations will advise us of the facts, we will undertake to see that the seller is punished as he deserves.

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OUR BOOK TABLE.

REPORTS.

Annual Report of the State Board of Horticulture of the State of California for 1889, with the compliments of B. M. Lelong, Secretary State Board of Horticulture.

A most admirable report, being a full treatise on propagation, varieties, grafting and budding of the olive; fig culture and propagation; Walnut budding and grafting; Orange packing; classification of lemons; Injurious insects, etc., and the whole freely illustrated.

Fifteenth Annual Report of the Ontario Agricultural College and Experimental Farm, 1889. Jas. Mills, President.

First Annual Report of the British Columbia Fruit Growers' Association, 1890. Secretary, A. H. B. McGowan, Vancouver, B.C.

From this report it is evident that our friends in British Columbia are fully awake to the importance of the fruit industry, and have formed a vigorous organization. In its formation they attribute much to the inspiring visit of Mr. A. McD. Allan, our ex-president, who addressed them on the possibilities of fruit culture, and the importance of this industry in Ontario. It is on the basis of the Ontario Association that this new society has been formed, and it is pleasing to note, that while they hope soon to have a journal of their own, they have so high an appreciation of our CANADIAN HORTICULTURIST that the whole membership have en masse united with our Association for the purpose of securing it.

BONE FERTILIZERS

QUICK IN THEIR ACTION.



TRADE MARK.

LASTING IN THEIR RESULTS.

DOMINION FERTILIZER AND CASING WORKS, Hamilton, Ont.

GENTLEMEN.—Picked 46 baskets of black currants season of 1888. Gave same bushels a dressing of your fertilizer, from which I picked 129 baskets this season; also used it on peach trees and grape vines with good results, and am pleased to place my order for more.

Niagara, Sept., 1889.

(Signed),

JAS. ROBINSON.

DOMINION FERTILIZER AND CASING WORKS, Hamilton, Ont.

GENTLEMEN.—I have used your Grape Food on grape vines, also on pears and peaches, with good results. I have used your sure growth on garden vegetables. I therefore take great pleasure in adding my testimony to the success and profit which has attended the use of your fertilizers on the different crops that I have used them.

Niagara, Jan., 1890.

(Signed),

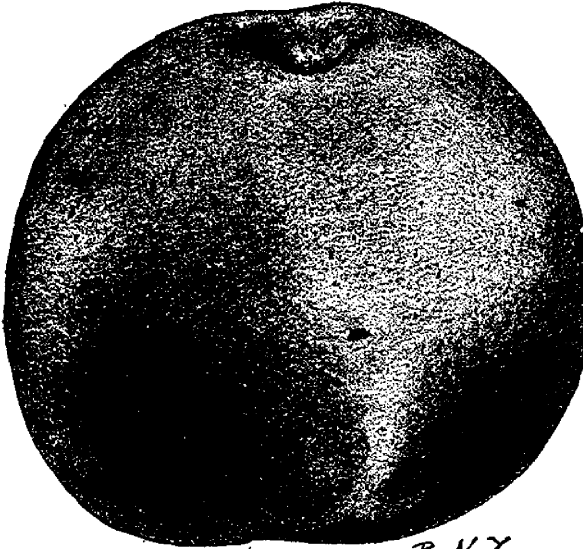
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Please send for Catalogue giving full information,

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255-257 James St. N., HAMILTON, ONT.

Jan. 6t.

(Please mention "Can. Horticulturist.")



Princess Louise,

THE NEW DESSERT APPLE.

Endorsed by the American Pomological Society; Western New York Horticultural Society; Ontario Fruit Growers' Association; granted a medal of excellency by the American Institute, New York city; recommended by the "Rural New Yorker," "American Agriculturist," "Toronto Globe," "Canadian Horticulturist," etc. First prize at Provincial exhibition and other shows as the best new Seedling. Exceeding Snow apple (from which it originated) in quality and keeping. Resembling Maiden's Blush in beauty. It will pay to top graft your old orchards and plant out new for market with this variety. Twenty scions or 6 one year trees by mail for \$1.00; or 3 trees, 5 to 7 feet, delivered at Express Office, for \$1.00; or 100 trees, 5 to 7 feet, delivered at Express or R. R., for \$20.00.

For scions or trees, send to

R.N-7

SMITH & KERMAN, Dominion Nurseries,
ST. CATHARINES, ONT.

Jan. 6t.

TO PLANTERS OF FRUIT.

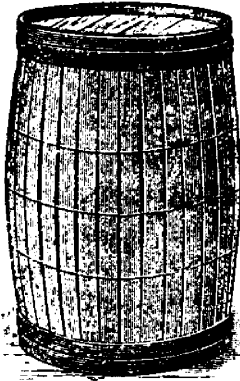
If you want to get varieties adapted to your location and climate, and can depend upon as true to name and get them at reasonable prices, send direct to the Dominion Nurseries. You can save the commission of agents by dealing with the grower. You can have all kinds of small fruit plants delivered by mail and guaranteed to come in good order. Send for catalogue and price list at once to

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May.


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This barrel has been tested in the United States from Georgia to Minnesota, and has received the approval of all who have used it.

When shipped in knocked-down form, about 2,000 barrels can be placed in a single car.  Special rates given on car lots.

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