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THE CYCLAMEN.

THE
Canadian Horticulturist

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THE CYCLAMEN.



THESE delightful winter and early spring flowering plants have of late years been so much improved that we shall scarcely recognize the small, comparatively insignificant blooms we used to meet with, in the splendid, large, broad-petalled, distinctly-colored forms, and highly-scented types of this flower, now so plentiful. For this great change we are much indebted to such men as Mr. Warren, of Isleworth, also a Mr. May of the same place. Each of these growers have low spanned houses, graded in temperature, in St. Margarets, West Middlesex, in which the culture is about the same, but there is a difference in the strain. The old type of the grandiflora family, with its long stems and large flower, has given place, in response to the persistent efforts of these and other London florists, to a dwarf stem of leaf and flower, without any diminution in size of bloom. They are now of a very robust constitution, remarkably free-blooming, and in every way well adapted to house cultivation, and as house plants have few equals, if any superior. Few flowers respond with such a generous profusion of bloom, to moderate care and cultivation, as does this plant. This fact is impressed upon me more every season as I look upon the magnificent array of color, smiling as they stand upon their benches, clean, bright and cheerful, like the refreshing greetings of the sunbeams after dark and dreary days. It gives a thrill of real delight, such as the millionaire cannot abstract from the intrinsic worth of his gold, as we approach them and count, as I did this morning, on one plant nearly 100 perfect blooms, and buds uncountable, nestling at the base of the leaf stems and on the crown. To the ladies, let me say

this attractive and very useful plant, flowering from October till August, is very easy to manage, even to growing from seed. Get the best strain of seed—Williams' prize strain is even now superseded. Sow in a small box about two inches deep, in a soil of a light nature, press the seed its own depth into the soil with a flat piece of board or shingle and cover lightly. Place in temperature of 55°, or thereabouts, cover with glass for a while in order to keep slightly moist, not wet. After a while lift the glass and keep evenly damp. You will soon see the bulblet appear.

Then as soon as they have two leaves, if they need more room prick off into another box farther apart, or better still, into small or two in. pots singly. This is the better way, not five or six in a pot. Grow on and give plenty of air, and don't let the hot sun strike them directly, as they are fond of shade, specially in hot days of Fall and Spring months. Re-pot as soon as roots move well to the pot, and let the soil have a little well decayed manure mixed with it; drain the pots well, keeping them growing at 55° to 65°, and you will soon be rewarded with bloom that will delight you. I like the grandiflorum type of the French growers at the present time. Having now on the benches over 1,000, I am able to see the differences of type in color, form, and flowering nature. If you prefer buying a plant already in bloom, you can get of your nearest florist your choice of color, etc., and treat it as I have indicated, taking good care to keep off the green-fly (perhaps its worst enemy), also the thrip—a thin, long, black bug which will quickly destroy the foliage by eating its fleshy underparts. Watch them closely on the younger leaves, and you can easily destroy without the aid of any insect destroyer. If your husband smokes tobacco, ask him to throw a whiff or two under their leaves, and Mr. Fly will soon grow dizzy and fall on the top of the pot, then shake him off and destroy. If you try to keep your corms or bulbs to a second and a third season, don't dry them out to a withering degree: but simply let them rest, with sufficient life in the soil to give nourishment to the bulbs, in which lies all the force, energy, or vitality preparing for another and greater effort next season in abundance of bloom and foliage. Start them afresh by watering more freely any time from August to October, as you may wish them in succession; also grade the temperature, as you may wish to keep back or hasten into bloom. By all means try and get a packet of seed of the pure white, heavily scented strain, or a bulb and you will be delighted. Sow in the house, we would say in greenhouse, in August, September or October. The cut blooms also you will find lasting and very useful. Should any reader like to ask a question, I shall be pleased to give an answer, if able, through these columns.

I may say this plant has some six species, bearing such names as *Cyclamen European* (hardy), *Cyclamen purum* (small flowering), *Cyclamen giganthus grandiflorum* (large flowers). Another one is, *Alpina asperula* (or violet of the Alps), so called because the Alpine ranges are its native home; but of them all I would advise you to get the *Cyclamen giganthus grandiflorum*.

WESTERN NEW YORK FRUIT GROWERS.



THE writer was present at the recent meeting of the Western New York Horticultural Society, and, as usual, heard many things worth noting for the benefit of our readers. Probably there is no gathering of fruit growers where so many men who are specialists in their respective departments are met together as at this meeting at Rochester. This great meeting of practical and scientific fruit growers is one of the most important on the continent, and deserves a regular delegate from us who shall report to us the important points of their discussions. No delegate was appointed by our Association this year, but in response to a special invitation to read a paper, the writer was present during part of the sessions. There were present about five hundred of New York's leading horticulturists, besides such students of science as Proofs, Bailey, Wayte, Slingerland, Halsted, Beach, Saunders, Van Slyke, and others, all noted specialists in their respective departments.

Prof. Wayte, of the Department of Pathology, Washington, gave an exhaustive address on "The Pear Blight," illustrated with lantern slides. By means of



FIG. 726 - PRESIDENT W. C. BARRY.

these he showed the microbe of the blight, and stated that he had frequently inoculated healthy trees with it, thus introducing the blight. Thence in the young and succulent growth it would spread very rapidly throughout the trees until it reached those parts which are too dry and tough in texture to afford further development. Another common method of spreading the blight was by means of insects which carry the microbes from one blossom to another while they are gathering honey. Thus, while the bees are among our best friends, because without them a proper fertilization of the blossoms cannot be effected, and little fruit would grow to maturity, yet in the way described above they are the cause of more or less injury to our pear orchards.

The blossoms are usually the part first affected, for the microbe finds a most ready entrance into the cells of the trees through the nectar disk of the flower. Professor Beach has proved the correctness of this theory in an orchard arti-



FIG. 727.

CUT OF COLUMBIAN RASPBERRY, SENT BY THE INTRODUCER.

ficially blighted. He covered numerous blooms in the orchard with mosquito netting, and in not one instance were these blooms affected, while those not so protected were very soon affected with the blight.

Another way of access for the microbe of the blight is through the young and tender tips of fast growing trees, and on this account it is wise to avoid applying too much nitrogenous manure to the pear tree.

The wide-awake fruit grower could largely save his trees from blight by cutting off the blighted portions, whether they be blossoms or tender young shoots, just as soon as they appear and before the blight has time to spread. Blighted limbs, when dry, do not spread the infection, because the microbe soon dies in dry wood.

There was a very lively discussion at another stage of the proceedings on the benefits of spraying. An interesting paper was read by Mr. Albert Wood, who is extensively engaged in growing apples. He gave his personal experience, stating that his apple orchard covers twenty-five acres, and that last year it yielded twenty-five hundred barrels of fine fruit, as a result of the thorough treatment with Bordeaux mixture. His orchard was planted in 1860 and yielded fairly well until about eight years ago, when it ceased to be productive. His first experiment was with two trees which he sprayed faithfully, and, as a result, there was a good yield, while the ones untreated gave very little fruit. The next year he gave his whole orchard two applications and there was hardly a tree but was breaking down with the quantity of fruit. From fourteen trees which were neglected he picked only thirty-five barrels of fruit, which, had they yielded as the rest of the orchard did, would have produced one hundred and thirty-five. If such results as these can be obtained by thorough spraying, surely the fruit growers of Ontario cannot be too industrious in the treatment of their orchards with the Bordeaux mixture during the coming season. They should begin before the leaf buds open and give their trees a thorough preliminary treatment with sulphate of copper, one pound to twenty-five gallons of water. On another page we give a table prepared by Professor Craig, of the Central Experimental Farm, Ottawa, in which full instructions will be found concerning the time and method of spraying our trees and plants, and we hope that we shall all have some practical experience to report at our next meeting at Woodstock.

Mr. Tabor gave an address on "Nature's Remedies for Diseases in Fruit." Speaking of the strawberry, he gave the following as the five best for profit,—Michel's Early, Haverland, Lovett, Bubach and Gandy. The Timbrell, he said, is a very good grower and possesses a fine flavor, but is not as fine looking as some others for the market.

His method of training was a modification of the Kniffen system, using only two main arms which he trained along the top wire, while from these he allowed the branches to hang. He said this was the most economical as regards time and consequent expense, and he believed the yield per acre was as great as by any other method.

Mr. Dibble stated that he had made a specialty of potato culture and had succeeded in getting a yield of over two hundred bushels per acre. In order to be successful, it is important, in his opinion, to grow those varieties which are suited to the soil. It is also important to use the concave knife in cutting the tubers for planting. Close examination proved that there was a tree-like growth from the stem end of the tuber to the terminal eye and branching off to each of the other eyes. The concave knife takes out a branch with each eye, and thus favor the best results in growth.

In reply to a question as to what are the four best varieties of pears for profit, Mr. Willard replied, Bartlett, Howell, Duchess and Keiffer. Mr. Woodward said that his opinion had changed so often that he really did not know



FIG. 728. —COLUMBIAN.

what to say at present. At one time he would have planted all Bartlett and Duchess, at another time the Keiffer, and at another time the Clairgeau.

Mr. Barry favored the Winter Nelis and Bosc. Both of these varieties should be top worked. He recommended Clairgeau on account of its fine appearance, and he would not leave out Anjou.

There was a splendid show of fruit in the room adjoining the place of meeting. Among other things we noted particularly was the Columbian raspberry, which we hope to have tested at our Ontario Fruit Experimental Stations as soon as possible. The accompanying cut is used by the introducers in their circulars, and they claim it to be wonderfully productive, a vigorous grower, like Schaffer, and that the fruit is very large. Samples of the heavy canes were shown, and also the fruit, which led us to desire to know more about its real value.

POINTS ON WINTER CARE OF THE ORCHARD.



HERE is too often a prevailing idea running riot among the average fruit growers that as soon as the harvest is gathered and the ground frozen the orchardist should have a long winter vacation. It is an undisputed truism that most people enjoy vacations, but the successful farmer, artizan or philosopher, must keep ever before him the motto: "Forego the lesser pleasure for the better good." Fruit growing, like every other industry, in order to secure the best results, involves careful attention to the orchard in all the seasons. So the winter problem in the orchard is a most interesting and important one. Tools or utensils of any description should be carefully housed, brightened and sharpened, ready for use. Time is never wasted in sharpening tools. Where drifts of snow lodge in young orchards, there is great danger of attacks from mice and rabbits. Manure should never be used as a mulch in the fall, as it serves as winter quarters for mice, whose depredations may be stopped by placing bands of zinc or strips of bark about the trunks, extending about two feet in height above the ground. These can be removed and used again next season. Tramping about the trunk on the snow is also of use. For rabbits, painting the trunk in fall with solution of one pound of bitter aloes to five gallons of water is useful; cheaper still, shoot the rabbits. Trees that are found badly girdled in spring, that have been untreated, are often saved by using connective scions, connecting the bark above the wound with that below.

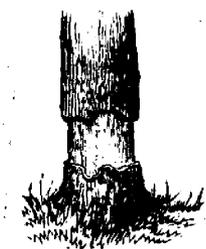


FIG. 279.

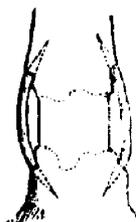


FIG. 230.

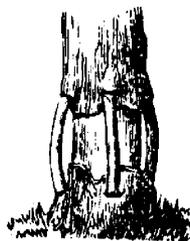


FIG. 731.

TREE BRIDGED WITH SCIONS.

At the beginning of the New Year, while the merchant is taking an inventory of his stock, the farmer should be taking an inventory of his orchard trees and plants, finding where trees need re-setting, pruning, grafting, etc., constructing a map of orchard, locating varieties and making changes, so as to be ready to begin work systematically in the spring. If orchard land needs draining, a map of the drains should be made, the surveys being taken during warm winter days, and carefully drawn out for future reference. Another important point is

the removing of old, decayed or lodged fruit from the limb, such as apples, pears, and "mummied plums." These should be destroyed, as they furnish storehouses for germs of fungous diseases living through the winter. Great care should be exercised in winter packing of apples to destroy all refuse, old apples, leaves, etc.; inspecting cracks of barrels for pupæ of insects, such as codling moth, which often hibernate in this manner.

Trees should be inspected for the bark-louse, and scraped,—exercising care with young trees,—letting the scales fall upon the snow; using a hoe on large trees. The black knot that infests the plum and cherry trees should be looked after and the knots cut off and burned at once, as they are now filled with winter spores inclosed in little sacks, which burst open in the spring and are distributed by the wind. The cut surfaces should be treated with an application of kerosene or turpentine, rubbed on with a cloth. When trees or limbs are badly infected, they should be removed and burned.

The manure heap should never be neglected during the winter. An amateur fruit grower writes that his horse-manure heap was destroyed last winter by burning. This is remedied by mixing other manures with the heap, or by adding earth. Watering thoroughly and often will serve the same purpose. Too many permit their manure heaps to suffer. This is wrong, as stable manure is one of the great agents in profitable orcharding; its presence in the soil regulates to a large extent heat and moisture, which commercial fertilizers will not do. All the manure possible should be applied, and then, if necessary, pieced out with commercial fertilizers. The cutting of apple scions for winter root-grafting should be done now, and stored away in a cool cellar, in leaves or sand, until ready to be grafted upon the roots of seedlings grown from apple seeds. These seedlings can be easily raised, or can be purchased from nurserymen for from three to four dollars per thousand, and every fruit grower should do his own root-grafting, the process being easily acquired, thus keeping down the nursery expense. These are a few of the many points that enter into profitable winter orcharding—PROF. E. E. FAVILLE, in *Farmer's Advocate*.

Tender Plants.—The skilful gardener will find a place for many tender plants, especially for the gladioli, dahlias and tuberous begonias, which have been stored in the dwelling house during the winter. A place can also be found for the large flowered canas, not in isolated groups on the lawn, but in small groups in the margin of a shrubbery where their stiffness will be concealed yet their fine colors will be useful. Phlox Drummondii, sweet peas, asters, calliopsis and tall nasturtiums can also be added. The most important thing we have to consider in gardening with hardy plants and shrubs is their arrangement. We must study to produce a pleasing effect at all seasons—to have a succession of bloom, that the garden shall never be dull or uninteresting.

THE POSSIBILITIES OF OUR PROVINCE.



I HAVE been a reader of THE CANADIAN HORTICULTURIST since it was founded, and each year it has become a more and more welcome visitor to my home. Prior to my twenty-five years' residence in Ontario I was for fifteen years chiefly engaged in the nursery business, near, and at Rochester, New York. I made a large delivery of trees in the autumn of 1853, at Dunnville, Cayuga, Paris and Brantford. I made a careful investigation of Western Ontario at that time after my business was completed, and fell deeply in love with it.

When the soil, timber, water, climate, fruit and agricultural possibilities are considered, combined with the beauty of the landscape, as a home for the farmer, fruit and flower culturist it is not surpassed, if equalled, in North America. No sunshine south of the lakes like that north of them. No air so clear, dry, bracing and invigorating. No winter air like that in Ontario. My winters at Ottawa in this respect were *most delightful*. When I tell my American friends of enjoying a walk with my friend Alexander Gun, of Kingston, with the thermometer 20 degrees below zero, they are inclined to question my sanity or veracity. No autumn leaves here like those among oaks on the hills east of Toronto. No winter fruit like the Ontario apples, in flavor. We get size and beauty, but not the sprightly flavor which makes an Ontario apple so refreshing. I purchased some of the finest Spitzenburgs a few days ago, at 80 cents per peck, that I ever saw in my life, but they were not up to par in flavor by any means. The possibilities of Ontario, as a fruit-producer, no living man, it seems to me, realizes. We get early fruits from the south, but the time will come when late fruits of high quality will command a high price in this market, and pay as well as early fruits. We have consumed 1,600 carloads of fresh fruit from California in New York and Brooklyn last year, sold at *auction*; they have realized from \$900 to \$3,800 per car, depending upon quality and condition when they reach this market.

An average price would be \$1,300 per carload of ten tons of fruit; 6,000 carloads crossed the Rocky Mountains in 1894, which, at an average of \$1,300 per car, means gross sales of \$7,800,000 at auction prices; pretty good for an infant fruit industry in hard times. Twenty-five years hence greater New York will have a population of not far from 6,000,000, and this State of 10,000,000. A fast line of steamers from Toronto to Oswego, and thence by the Ontario and Hudson deep sea canal to Albany, and by the river to our wharves, will open to your growers of small fruits, to come in after the local crop is gone, an unlimited market, and the same for all the plums and apples you can produce. The

country from Kingston west to Windsor might become a vast plum and apple orchard, and not over-stock this market.

Dr. Willard Parker was once asked if the Methodist profession was overcrowded in New York. He replied, "Not on the upper seats." This applies to farm products and fruits as much as to the professions. The same day that a carload of California grapes, pears, plums and peaches, sold for \$3,800 at auction, on the same wharf, another carload sold for \$900. Both came on the same train from California. The difference was one of varieties, selection and packing. The cost to the grower was the same.

When I began I only intended to write upon a letter of congratulation on the progress the CANADIAN HORTICULTURIST has made, and to wish you continued progress and prosperity. My 25 years' residence in Ontario is filled with happy memories which will continue a source of pleasure for life. I love the Canadian people so much that I am urging Jonathan to make love to them and propose marriage to them as a whole and not in "job lots." Kind regards to my friend, Dr. Beadle.

THOMAS WAYLAND GLEN.

543 Madison Street, Brooklyn, N. Y.

SET ASPARAGUS EARLY.

AN observance of the following directions will insure a good bed. Conover's Colossal is the variety you want. If raised from seed, make your seed bed rich

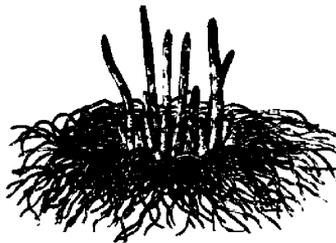


FIG. 732.—ASPARAGUS.

with well-rotted manure. Sow seed in drills, about an inch deep, and rows far enough apart to admit of hoeing. Keep the soil mellow and free from weeds. In the fall, or succeeding spring, the plants may be set out in a permanent bed, which should be narrow to admit of cutting to the centre. Set the plants about 18 inches apart each way with crowns four inches beneath the surface, spreading the roots as

much as possible. Before transplanting, the bed should be worked as deeply as possible, and liberally mixed with rotted manure. The soil cannot be too rich. Three years from the seed the bed may be cut sparingly. A year's time may be saved by buying one-year-old plants, which may be had of any gardener, and cost but little. Before winter comes on cover the young bed with about four inches of coarse manure, and in the spring rake off all but the finest of it. Select a warm, sunny spot for your bed, for it will thereby be earlier.—Farm and Home.

SPRAYING FOR FUNGI AND INSECTS.



HE profits to the fruit grower of spraying his trees and plants as directed by professional experimenters appears to be of sufficient importance to induce every one of us to engage in it in real earnest during the year 1895. Indeed the benefits appear to be so decided, that no fruit grower can any longer afford to neglect the work. The monilia or fruit rot of the plum and cherry, the leaf-blight of the pear tree and the cracking of the pear, the apple scab and the codling moth, all appear to have been fairly well controlled by spraying in 1894, according to the Report given us by Prof. Craig, at Orillia, last December. For instance, here are some extracts under the head of "RESULTS":—

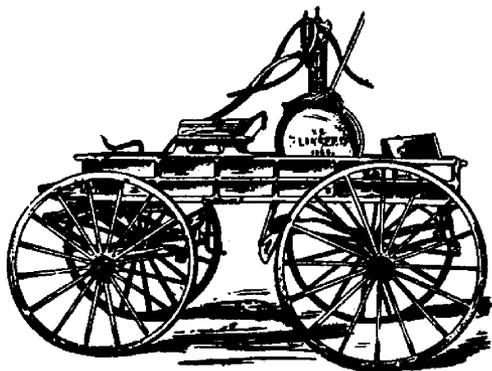


FIG. 733. SPRAY PUMP.

Cherries.

The cherry suffers from the same diseases as the plum. The following are results gained from two series of experiments in preventing "rot" on Yellow Spanish cherries:

- (1) Sprayed tree yielded 90 lbs. of fruit Unsprayed tree yielded 30 lbs. of fruit.
- (2) One selected sprayed tree yielded 130 lbs. of fruit, which netted \$0.25. One selected, equally good, unsprayed tree yielded 17 lbs. of fruit, which netted \$1.20.

Pears.

Pear trees were sprayed to prevent "leaf blight" and the "cracking and spotting" of the fruit. The best results gained showed that Flemish Beauty pears sprayed, yielded 75 per cent. more marketable fruit than those unsprayed. Beurré Giffard gave practically the same results. The foliage of the treated trees was vastly superior to that on trees unsprayed.

Apples.

Apples were sprayed in several orchards, mainly to prevent injury from the fungus causing "apple spot" and the depredations of the codling moth.

The results gained show that the sprayed trees yielded 24 per cent. more of first-class fruit, 6 per cent. less of second-class and 18 per cent. less of third-class fruit than the same number of trees unsprayed.

The effect of this improvement in *quality alone* upon the gross receipts from an acre of bearing apple trees may be shown as follows:—Supposing the yield to be 50 barrels, we find according to results gained that spraying would give at ordinary market rates, \$2.50, \$1.75 and 75c, for first, second and third class respectively: \$56.75 worth of No. 1 fruit, \$31.50 worth of "seconds," and \$6.97 worth of "thirds," or a total of \$95.22. The same area unsprayed would give of No. 1 fruit \$26.75, of No. 2 \$37, and of third class \$13.64, or a total return of \$77.40, leaving a balance in favor of the sprayed acre of \$17.82. This is supposing that all the "seconds" and "thirds," which in the case of the unsprayed is very large, could be sold. The cost of spraying an acre of apple trees will vary according to the size of the trees: using diluted Bordeaux mixture and making five applications, it need not exceed \$6 and may be under \$5. There would thus be a nett profit of \$10 to \$12 on the basis of equal yields and improved quality. As a result of the experiments referred to, and looking at spraying as *affecting the yield*, we find that the sprayed trees gave 74 per cent. of the total yield. This return added to the improved quality, gives a difference in the nett receipts of \$51.53 in favor of the sprayed acre.

The SPRAYING MIXTURES recommended by Mr. Craig for use in 1895 are given below.

Bordeaux Mixture.

The ingredients are copper sulphate, lime and water, in the following proportions:

Copper sulphate.....	4 lbs.
Lime.....	4 lbs.
Water.....	50 gals., or one kerosene barrel.

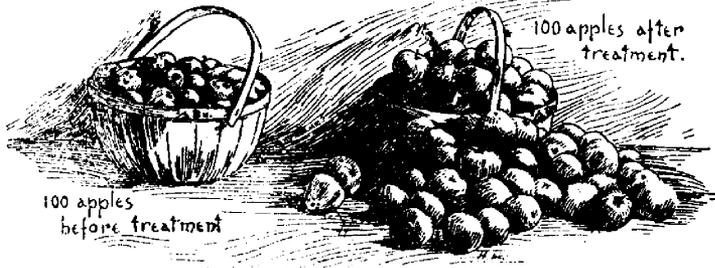


FIG. 734.

To destroy leaf-eating insects, add 4 oz. of Paris green. For peaches, use 3 lbs. each of copper sulphate and lime and 3 oz. of Paris green, on account of the tenderness of the foliage.

When a single barrelful of this is required, dissolve in the barrel 4 lbs. of copper sulphate (blue stone). Hot water facilitates the operation. To dissolve quickly place the copper sulphate in a cotton bag or basket, and suspend this in the vessel containing the water so that it is entirely immersed. Solution rapidly takes place. In another vessel slake 4 lbs. of fresh lime with as many gallons of water. If the lime when slaked is lumpy or granular it should be strained through a fine sieve, or coarse sacking, into the barrel containing the copper sulphate now in solution, fill the barrel with water. It should be used soon after being prepared.

When a large amount of spraying is contemplated it is a good plan to make up a stock solution separately, each, of lime and blue stone, which can be diluted as need:—Dissolve 100 lbs. of copper sulphate in 50 gallons of water; two gallons when dissolved will contain 4 lbs. of the salt. In another barrel slake 100 lbs. of lime and make up to a milk by adding 50 gallons of water; when well stirred two gallons should contain 4 lbs. of lime. When it is desired to make a barrel of Bordeaux mixture, take two gallons of the stock solution of copper sulphate and add the same quality of the milk of lime; if the lime is of good quality it will be sufficient to neutralize it completely. If the lime is air-slaked or impure, the right quality can be ascertained by applying the ferrocyanide of potassium test. If the lime is deficient, a drop of ferrocyanide of potassium (yellow prussiate of potash) added to the mixture will turn brown. Add lime water till the drop of ferrocyanide of potassium remains colorless.

Ammoniacal Copper Carbonate.

Copper Carbonate.....	5 oz.
Ammonia.....	2 qts.
Water.....	50 gals.

This is prepared by dissolving the copper carbonate in the ammonia and diluting with water to 50 gallons. The concentrated solution should be poured into the water. Care should be taken to keep the ammonia in glass or stone jars tightly corked.

This mixture is more expensive than the former, but is more easily applied and may be used as a substitute, especially in the case of grapes where late spraying is necessary, and when Bordeaux mixture might, by adhering to the fruit, injure its sale.

Copper Sulphate.

Copper sulphate, 1 lb. to 25 gallons of water, is used for the first application only. It should never be applied after the buds burst, as it will injure the foliage.

As a guide to readers in their operations, we give, on the next page, Prof. Craig's *Spraying Calendar*, which will be of intense interest to our readers, many of whom will, we believe, follow it out in full. We shall be very glad to receive reports for publication, showing the results of faithful work done in all parts of Ontario. The trouble so far has been the careless half-hearted method of doing the work, and, in consequence, no wonder at the failure of good results.

The Perambulating Sprayer.—A scheme for demonstrating the importance of spraying for apple scab, codling moth, and plum and cherry rot, has been devised by the Board of Control of the Fruit Experiment Stations of Ontario, and approved by the Minister of Agriculture. Three sets of sprayers are to be started, each under a competent man: one set will travel through the counties along the north shore of Lake Erie, from Windsor to the Niagara River; another along the north shore of Lake Ontario, from Toronto to the St. Lawrence; and another along the east shore of Lake Huron. Mr. A. H. Pettit, who formulated the scheme, is to be made the responsible director of the whole work.

Law for Fruit Packers.—So much fraud has been perpetrated upon the public by dishonest fruit packing that legislation to prevent it is in demand. The growers of the Niagara district have met and discussed the matter, and all agree that some measures are needed to protect the honest grower from having his reputation soiled by dishonest men. How best to do it, is the question. It is proposed,

- (1) To have apples and pears graded No. 1 and No. 2; (2) to have all graded fruit branded with the name and address of the packer; (3) in case of ungraded fruit, that the top layer shall be a fair representation of the whole contents of the package; (4) to regulate the sizes of fruit packages.

SPRAYING CALENDAR.

Plant.	1st Application.	2nd Application.	3rd Application.	4th Application.	5th Application.	6th Application.
<i>Apple.</i> Apple-spot fungus, cod-ling moth, bud moth.	<i>Copper Sulphate.</i> Before buds start.	<i>Bordeaux.</i> Just before blossoms open.	<i>Bordeaux.</i> Paris Green — 5000 Paris Green after blossoms fall.	<i>Bordeaux.</i> Paris Green. — 10 - 15 days later.	<i>Bordeaux.</i> 10 - 15 days later if spot disease is severe.	
<i>Cherry.</i> Rot, leaf diseases and injurious insects.	<i>Bordeaux.</i> Before flow buds open <i>Kerosene Emulsion</i> for aphid.	<i>Bordeaux.</i> Paris Green. — When fruit has set.	<i>Bordeaux.</i> Paris Green. — 10 - 15 days later.	<i>Ammoniacal Copper Carbonate.</i> 10 - 15 days later.		
<i>Grape.</i> Mildew, rot, leaf-eat- ing insects.	<i>Copper Sulphate.</i> Before buds burst.	<i>Bordeaux.</i> Paris Green. — When first leaves are half grown.	<i>Bordeaux.</i> Paris Green. — When fruit has set.	<i>Bordeaux.</i> 10 - 15 days later.	<i>Bordeaux.</i> 10 - 15 days later if disease persists.	<i>Ammoniacal Copper Carbonate.</i> If disease persists.
<i>Peach—Apricot.</i> Rot, leaf-eat, curculio	<i>Copper Sulphate.</i> Before buds burst.	<i>Bordeaux.</i> 3 lbs. copper sulphate 3 lbs. lime. 50 gals. water. Just before blossoms open.	<i>Bordeaux.</i> Paris Green. — Soon after fruit has set.	<i>Bordeaux.</i> Paris Green. — 8 - 12 days later.	<i>Bordeaux.</i> Paris Green. — 8 - 12 days later if rot is prevalent.	<i>Copper Carbonate.</i> 10 - 15 days later if rot is prevalent.
<i>Pear.</i> Scab, leaf-blight, cod-ling moth.	<i>Copper Sulphate.</i> Before buds burst.	<i>Bordeaux.</i> Just before blossoms open.	<i>Bordeaux.</i> Paris Green. — Soon after blossoms fall.	<i>Bordeaux.</i> Paris Green. — 10 - 12 days later.	<i>Bordeaux.</i> 10 - 12 - 10 - 15 days later.	
<i>Pium.</i> Rot, shot-hole fungus, curculio.	<i>Copper Sulphate.</i> Before buds burst.	<i>Bordeaux.</i> Paris Green. — Soon after blossoms have fallen.	<i>Bordeaux.</i> Paris Green. — 10 - 12 days later.	<i>Bordeaux.</i> Paris Green. — 10 - 12 - 10 - 15 days later.	<i>Copper Carbonate.</i> 10 - 15 days later if rot is prevalent.	<i>Copper Carbonate.</i> 10 - 20 days later if rot is prevalent.



MR. F. W. HODSON

SUPERINTENDENT OF FARMERS' INSTITUTES FOR ONTARIO.

PROMINENT CANADIANS.—I.

Mr. F. W. Hodson.



IN this case we cannot write under the head of Prominent Canadian Horticulturist, because, so far as we know, Mr. Hodson has not made a specialty of either fruit growing or gardening. But he has recently been promoted to a position which is an important one to fruit growers, as well as to farmers, viz. : Superintendent of Farmers' Institutes of Ontario. Until recently, this work devolved upon President Mills, of the A. O. C., Guelph, but the burden was too heavy, and it was at length found necessary to appoint a man to give his time to this important work. Now the Fruit Growers' Association of Ontario, together with the Dairymen and other Associations in Ontario, have the privilege of selecting a certain number of speakers on their own industry to make up the staff of speakers sent out to do institute work, and it is in this connection that we are somewhat closely associated with Mr. Hodson. Nor is he unacquainted with our work, for as managing editor of the Farmers' Advocate, he has frequently attended our meetings, and reported upon the excellence of our work, in that journal.

Mr. Hodson is the son of a prominent farmer and sheep breeder of the township of Whitby; and, owing to his evident abilities, was made associate editor of *The Farmers' Advocate* in 1880. He has also held the secretaryship of two important Associations—the Sheep Breeders' and the Swine Breeders'—and has been most successful in working up the interests of them both.

No wonder, therefore, that in response to numerous letters urging his appointment, the Minister of Agriculture has seen fit to accede, and place Mr. Hodson in a position where his abilities will have the widest scope.

Pruning Grape Vines.—That pruning is a great art, seldom mastered even by good gardeners, may readily be noted by the condition of grape vines, in most places. All the lower portions of the main shoots are comparatively naked, and the few stronger branches grow from the upper portion of the vine, but a well pruned vine will be covered with strong branches from the base to the summit. This is really the leading object in grape vine pruning; but not one in a hundred knows how to bring it about. It is wholly accomplished by summer pruning. The upper branches are usually the strongest, and if left run they will draw the nourishment from all the rest. The well instructed grape pruner watches his vines during the season of growth, and whenever any one branch is inclined to grow stronger than its neighbor, it is either pinched back, in order to check its ambition, or else broken off entirely. The social problem of the "rich becoming richer and the poor poorer" applies here. We check the strong branch and the weaker is strengthened thereby.—Meehans' Monthly.

PRUNING GOOSEBERRIES AND CURRANTS.

Gooseberries.

CONFINE pruning chiefly to thinning out main branches and cutting out weak and exhausted parts, regulating the current year's young wood as evenly as possible over the trees at such distances apart that the hand may be passed down among them without being scratched. Allow no shoots to remain to grow inwards or in reversed positions whereby they tend to crowd the centres, which ought to remain moderately open. Keep the shoots clear of the ground by cutting away the lowest growths. The pendulous growing varieties require special attention in this respect, and when pruned ought to be cut to upward pointing buds. Prune erect growers to outward buds, and those of spreading growth to inside buds, which will modify to some extent their natural habit, producing more shapely and serviceable bushes. In thinning out, either cut the shoots dispensed with entirely out close to the old wood, or leave them to the extent of an inch, when they will form spurs at the base. A dusting of lime when the bushes are damp is good for the trees, destructive of insects, and a preventive of birds taking the buds. If manure is needed draw the earth from below the branches till the roots are visible, then spread a layer of decayed manure on them, covering with a sprinkling of fresh soil. The remainder of the soil outside the radius of the roots may be manured and forked over, or the latter alone will do where the ground is rich and the trees productive.

Red and White Currants.—As the disposal of a proper number of branches—usually five to seven in ordinary sized bushes—is effected early in the existence of the bushes, the pruning is a very simple matter. It consists in pruning back to within an inch of the main stems all the side growths produced during the summer, shortening the extension growths in the same way with full-sized bushes, but in those required to extend leave a length of not more than nine inches. With weakly trees six inches is enough. The object of shortening the branches to these distances is to cause proper breaks of side shoots, and to strengthen the stems so that they can bear the large crops of fruit which are annually produced from the clusters of basal buds congregated on the spurs. Give the trees a good dressing of manure over the roots, and sprinkle the branches with fine lime, which serves to cleanse them of moss, and otherwise benefits them, as well as preserving the buds from birds, which, however, are not so destructive with currants as gooseberries.

Black Currants.—These bear differently, and in pruning, abundance of young wood must be left, confining the pruning to thinning out the oldest branches and a large proportion of the latest bearing shoots. Strong sucker-like growths from the base may be freely encouraged, or vigorous growths from any part, but preferably originating in the lower parts of the bushes, can be utilized,

avoiding crowding. All the wood removed should be cut out cleanly, none being left to form spurs, as in red and white currants, though short stubby spurs which form naturally and have received light and air freely, must be retained. Shortening the leading shoots need only be adopted to regulate the size and symmetry of the bushes, but this is best effected by cutting out the longest branches from time to time.—Journal of Horticulture.

SEED BUYING.

As this is about the time when farmers and gardeners begin planning upon their crops for the coming season, and laying in their seeds, the following table may be of general service.

Reliable Table showing the Quantity of Seed usually Sown upon an Acre.

lbs. bush.		lbs. bu.-h.	
Barley, broadcast.....	48	Melon, water, in hills.....	4 to 5 lbs.
Beans, dwarf, in drills....	60	Millet.....	48
Beans, pole, in hills.....	60	Oats, broadcast.....	34
Beets, table, in drills.....	6 lbs.	Onion, in drills.....	6 to 8 lbs.
Beets, Mangel-Wurzel.....	5 lbs.	Onion, for sets, in drills....	50 lbs.
Buckwheat.....	48	Onion sets, in drills.....	6 to 12 bush.
Cabbage in beds to transplant	1 bush.	Parsnip, in drills.....	4 to 6 lbs.
Carrot, in drills.....	3 to 4 lbs.	Peas, round, in drills.....	1½ bush.
Clover, red.....	60	Peas, wrinkled, in drills....	60
Clover, white.....	60	Peas, broadcast.....	3 bush.
Clover, Alsike.....	60	Potatoes, cut tubers.....	60
Clover, Lucerne or Alfalfa.	60	Pumpkins, in hills.....	3 lbs.
Corn, in hills.....	8 to 10 qts.	Radish, in drills.....	8 to 10 lbs.
Corn, for fodder.....	56	Rye, broadcast.....	56
Cucumber, in hills.....	2 lbs.	Spinach, in drills.....	1½ to 2 bush.
Flax, broadcast.....	56	Squash, bush varieties, in hills.....	4 lbs.
Grass, Kentucky blue.....	14	Squash, running varieties, in hills.....	3 lbs.
Grass, orchard.....	14	Tomato, to transplant.....	½ lb.
Grass, English rye.....	24	Turnip, in drills.....	2 lbs.
Grass, red-top.....	14	Turnip, broadcast.....	2 lbs.
Grass, timothy.....	48	Vetches, broadcast.....	2 to 3 bush.
Grass, Hungarian.....	48	Wheat, broadcast.....	60
Grass, lawn.....	15		
Melon, musk, in hills.....	2 to 3 lbs.		

Quantity of Seed required for a Specified Length of Drill.

Asparagus.....	1 oz. for 60 ft. of drill.	Peas.....	1 qt. for 100 ft. of drill.
Beet.....	1 oz. for 50 ft. of drill.	Pumpkin.....	1 oz. for 40 hills.
Beans, dwarf.....	1 qt. for 100 ft. of drill.	Radish.....	1 oz. for 75 ft. of drill.
Beans, pole.....	1 qt. for 150 hills.	Salsify.....	1 oz. for 70 ft. of drill.
Carrot.....	1 oz. for 150 ft. of drill.	Spinach.....	1 oz. for 75 ft. of drill.
Cucumber.....	1 oz. for 50 hills.	Squash, early.....	1 oz. for 50 hills.
Corn.....	1 qt. for 200 hills.	Squash, marrow.....	1 oz. for 20 hills.
Leek.....	1 oz. for 100 ft. of drill.	Turnip.....	1 oz. for 150 ft. of drill.
Melon, water.....	1 oz. for 30 hills.	Cabbage.....	1 oz. for 2000 plants.
Melon, musk.....	1 oz. for 50 hills.	Cauliflower.....	1 oz. for 2000 plants.
Onion.....	1 oz. for 100 ft. of drill.	Celery.....	1 oz. for 3000 plants.
Onion sets small.....	1 qt. for 40 ft. of drill.	Lettuce.....	1 oz. for 3000 plants.
Parsley.....	1 oz. for 125 ft. of drill.	Pepper.....	1 oz. for 1000 plants.
Parsnip.....	1 oz. for 150 ft. of drill.	Tomato.....	1 oz. for 1500 plants.

TOMATO CULTURE.

CHAPTER III.

HOW TO MAKE PLANT BOXES AND SET PLANTS IN THEM.

Rip up pine lumber 4 inches wide and $\frac{1}{2}$ inch thick. To make a box, cut off three pieces (two for sides and one for the bottom) 30 inches long, and two pieces for the ends $3\frac{1}{2}$ inches long at the bottom edge, and $4\frac{1}{2}$ inches long at the upper edge. Nail them together with wire nails $1\frac{1}{2}$ inches long; use two nails at the end of each long piece twelve nails to a box. Now you have a box $4\frac{1}{2}$ inches wide at the top and $3\frac{1}{2}$ inches wide at the bottom. Into a box of this shape the plants can be set with ease and rapidity; they can also be taken out quickly without much disturbing the roots when setting them out where they are to fruit.

For lifting the plants I have found nothing so good and handy as a stone mason's trowel. Cut enough off the point to leave a straight edge $1\frac{1}{2}$ inches wide. File or grind the point and both edges as sharp as a knife. With this tool cut the plants out of the rows as soon as they begin to crowd each other. Cut a square face between the plants, and at the sides of the row cut, wedging the shape of the inside of the box. Cut the lumps out with a lump of earth about an inch smaller than the size of the box inside. Lift the plants with the trowel and hand, with soil adhering to the roots, and place them in the box so as to disturb the roots as little as possible. Put five or six plants in a box and fill up with mellow, very rich soil; press them in firmly, and water often, and very moderately at first, until the earth is settled well and the new roots started, then they may be watered according to their requirements.

When first boxed off they are better set close enough for the plants to just touch each other for a day or two. But care must be taken to give plenty of room as soon as growth starts, or the plants will be drawn and spoiled.

CHAPTER IV.

GROWING EXTRA LARGE PLANTS.

If plants are wanted larger and more forward than the boxed plants are, order from a potter tomato pans 5 inches deep and 8 inches wide at the top, and 6 inches wide at the bottom, inside measurement. Lift the plants with a larger amount of soil than when boxing them, and set one plant in each pan, fill with very rich soil to within half-an-inch of being full when firmly pressed down. Water as directed for boxes, and give plenty of room. Plants so treated

can be grown to any size desired. I have often grown them eighteen inches high and branched out eighteen inches wide, and loaded with eight or ten fair-sized tomatos. And by carefully turning them out of the pans and planting them in the open ground they will grow right along and ripen their fruit very early. As soon as the large plants show signs of failing for want of plant food, water them with weak liquid manure.

CHAPTER V.

HOW TO PREPARE BEDS AND FORCE PLANTS FOR FRUIT IN COLD FRAMES.

Make beds on good, dry, well-drained rich soil fifteen feet long and seven feet wide. Work the soil fifteen inches deep, and if the subsoil is good and loamy, eighteen inches deep will be none too much. Mix in plenty of well-rotted manure, and pulverize all together as perfectly as possible.

If the soil is heavy and does not contain much sand, mix in about five or six bushels of sand of medium quality, neither very fine nor very coarse, and add one peck of unleached ashes. The sand once in the beds will be there for all time, and the same beds should be used every year. Each season manure them well with barn-yard manure, well-rotted; use also a peck of unleached ashes every season. More sand may be used each season if necessary; one-third of fine sand is not too much on heavy soils. One side of the beds should face to the south, and the north side of the beds should be six inches higher than the south side, when finished.

To make the frame, take good inch lumber, 14 feet long and 12 inches wide. Take two boards and cut the ends square, and leave them 13 feet 10 inches long. Take another board 14 feet long and 10 inches wide, cut it in the centre, and use a piece for each end of frame; set up your side boards so they will be just six feet four inches apart, outside measurement; nail on the ends flush with the upper edges of the sides, letting the ends lap over about equal on each side. The lap on the end, though not used, serves to keep the ends from splitting when being nailed on and taken apart again. If three inch wire nails are used and frames carefully taken apart when not in use, the same lumber and nails will serve for at least twenty years. The sash should be all one size and be six feet four inches long, and 3 feet 6 inches wide and contain five rows of 7x9 glass. I have found the above size of frame the best and most economical. Four of such sash, cover a bed completely. Almost any size of sash can be used by making beds and frames to suit; but frames smaller than those described will not be found as profitable. Set your frame on the bed true, and let the edge of the south board down below the surface three inches. If any space is left open at the back, bank up with earth; put on the sash close and let the

beds heat up as hot as the sun will heat them for a day or two ; then the beds will be ready to plant. The beds will be ready to receive the plants about four weeks earlier than it will do to plant in the open ground. Select the largest plants in stock, fourteen plants for each bed, six on each side and one in the centre at each end. Now dig six holes on each side and one in the centre at each end. These holes should be dug sloping toward the outside of the bed, and deep enough to receive the lump of earth at the roots of the plants. The lumps should be laid on their sides and should be so that the plants will be nearly flat and lean towards the frame on every side. The roots should be set near enough to the centre of the bed so that the tops of the plants will be about one foot inside of the frame. The four plants at the corners should lean straight for the corners of frame. Do not plant too deep. The lumps should not be more than an inch below the surface.

Set the plants when the sun shines, if possible. After planting, sprinkle on eight or ten gallons of water. The work should be done soon enough in the day to put the sash on and let the beds get good and warm before night. If the beds are watered as directed, they may be covered down close at two or three o'clock in the afternoon, and they will be all right till next day. Then if the weather is bright they must have some air, but they should be kept pretty close for two or three days. Afterward they must have air as required. Air by moving the sash apart. When there is cold wind from the north, air by moving the south ends of the sashes only. When the plants fill the frame and begin to crowd against the glass, raise the frame and hill up with earth under the edges at the bottom of the frame. Raise the frames but little at a time and often. If raised too much at a time, the plants will be drawn up too fast and injured more or less. As soon as all danger of frost is passed and the weather has become settled and warm, knock the frame apart, pull out the nails and pile up the lumber for another year. Have the beds between the plants perfectly clean. The next work is to train the plants. To do this, begin in the centre and take as many of the inside limbs of the plants as will fill up the centre and bend them into it. Then with the hands separate the remaining limbs of each plant carefully and press them down to the ground and train them out in every direction from the bed. This process will let the sun into the base of the plants and cause them to set fruit rapidly and freely. Continue to train the plants outward as often as they grow together. Plants treated as above should yield at least half a bushel of tomatoes to each plant. The writer has often had ten bushels from each bed. The first two or three pickings has always brought in our markets six dollars per bushel. Then somewhat less every week until the best picked were sometimes as low as forty or thirty cents per bushel.

The plants should be set eight feet apart each way, and the vines will nearly meet together so that the vines will cover two-thirds more land than the size of the beds. Do not pinch or cut off any of the vines. I am aware that in giving the above directions I am going directly contrary to the directions given

by most, if not all, agricultural writers. But I know whereof I speak, having made a specialty of growing tomatoes in large quantities for market during the past thirty-four years. Every year I have had a good crop, and most seasons the crop has been very abundant. The finest flavored and best ripened fruit is found beneath the foliage, where it is shaded from the scorching sun. This applies only to early fruit; late fruit, that must be ripened in cold fall weather, or not at all, would be benefited by the heat of the sun.

In the preceding chapters I have been particular to give minute directions for raising and forcing plants so as to get very early fruit for the market, as it is from the very early crop that the largest profits are to be obtained. Yet plants grown as above are expensive, on account of the large amount of glass and fuel required. It also takes skilled care and a large amount of room to grow such plants. Therefore they cannot be grown for less than twenty-five dollars per hundred. The writer has often refused three dollars per dozen for those extra early large plants, knowing that they were worth more to plant out for early fruit. Such plants are safe for yielding five pounds of early fruit the last of June and first half of July. This extra early fruit will always sell for ten cents per pound, and in some markets, double that amount; and the plants will ripen as much fruit afterward as the main crop plants. I am thus particular, in order to show the new beginner the value of these extra early plants.

St. Marys, Ont.

S. H. MITCHELL.

CURRANTS AS A GARDEN CROP.

Currants do best on a rich, clay soil with good drainage. They will do very well in a rich, moist loam, and even in sandy land large crops may be raised if it is rich and the bushes are kept well mulched with straw or strawy litter. The lighter the soil the more important it is not to have a southern exposure for currants. When currant bushes get so thick as to need pruning, the older shoots should be cut out, but this must be done with moderation, as the older shoots are, up to a certain point, the most productive. When they begin to appear weak they should be removed, and a good dressing of manure given. The bushes should be kept thoroughly free from weeds and grass at all times.

The cuttings should be made 10 inches long, strong, close-budded shoots of the same season's growth and set slightly slanting in a trench, so that 2 or 3 inches only of the top of the cutting is left exposed when the earth is replaced. The earth should be very firmly trod to these cuttings, especially at the bottom. In heavy land or any likely to heave by frost, the row of cuttings should be either well mulched, or the earth should be drawn up to them in a ridge so as to entirely cover them, to prevent being thrown out by the action of the frost. They should be set as early in the fall as possible, after most of the leaves have fallen.—Farm and Home.

MAKING A FARM HOTBED.

The first spring work in the farm garden is making a hotbed. It will furnish fresh vegetables when they are a relish and cost comparatively little, for everything is at hand except the sash and that when once procured will last for years. The ordinary hotbed sash is six by three feet, a very convenient size, although any old sash will answer the purpose. Construct the frame as wide as the sash is long and as long as it is desired to make the bed. Have it 12 inches high at the front and 18 inches at the back. About the 1st of March, haul out a few loads of fresh horse manure which has begun to ferment and place it in a square flat pile. In a few days when it has begun to heat quite violently, fork over, shake it out well and throw out all frozen lumps. Make into a bed at least $1\frac{1}{2}$ feet thick and extending a couple of feet beyond the frame all around, treading it down firmly. Manure thrown loosely together will heat rapidly for a short time and then become cold, but when it is made comparatively firm, it will give forth a gentle heat for six or eight weeks. When the bed has been prepared place the frame upon it and bank it up well to the top with manure.

It is now ready for the soil. Use light garden loam which has been prepared the fall before. This had previously been placed in a heap and covered with manure to keep it from freezing, so that it can be had when wanted. Neglect of this item may cause some delay in making the hotbed, for the ground is usually frozen March 1st and it is difficult to procure soil from the open ground. Place five or six inches of earth on the manure, levelling and fining with an iron-toothed rake; then put on the sash and leave the bed alone for a few days before planting the seeds. If the seeds are put in at once the manure may

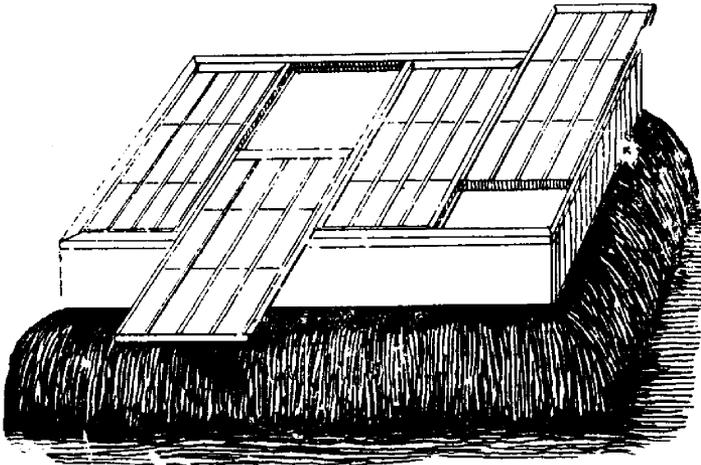


FIG. 735.—HOTBED.

become so hot that the tender germs will be destroyed. About the third or fourth day, the heat will usually subside to about 80 degrees, then it will be safe to sow. Mark off in rows about four inches apart, scatter the seed thinly in the drills, cover with half an inch of soil, and pat the bed down over the rows with a board on the back of a hoe.

Radishes and onions do not need transplanting, but transplant tomatoes and cabbage once or twice before setting in the open ground, giving them more room each time. Also transplant lettuce when it gets its second or third pair of leaves. Set three inches apart each way and it will soon become large enough for use. Always keep the bed full. As soon as one crop is taken out put in something else.

Open the bed and let in fresh air when the weather will permit. As it becomes warmer the sash may be removed altogether during the middle of the day, but must always be replaced when it turns cool toward evening. When the water begins to gather on the inside of the glass, it shows that the air is getting damp and heavy and if not changed the plants will smother, or the temperature will get too high; but always avoid letting in a cold draught directly on to the plants. Water sparingly in cold weather and never when the sun is very bright, for the drops of water on the leaves under the glass act as a lens and burn the leaves so that they will turn brown. For this reason in bright weather the watering should be done either in the morning or evening. If too much water is given the bed will become soggy and dead and the plants will turn yellow and cease to thrive. To avoid this I let the bed become quite dry before watering and then give it a thorough soaking. On cold nights or in stormy weather the glass should be covered with matting or boards, or even hay or straw, to keep the temperature from falling too low. A well managed hotbed will more than pay any family for the trouble. Once enjoyed it will be made every spring. It will require a little attention every day, but the pleasure of having early vegetables will be an ample reward.—American Agriculturist.

Drainage in Flower-Pots.—Although all persons are familiar with the fact that the flower-pot must have a hole in the bottom, very few understand why it is necessary that the water should be allowed to escape. The usual thought is that water is essential to plant life. To some extent no plant could live in thoroughly dry earth,—at the same time atmospheric air is of quite as much, if not of more, importance than water, and the change of air is as necessary for the roots of plants as for human beings. Air in the earth in a flower-pot soon loses its life-giving powers, and has to be changed for fresh air. Watering accomplishes this,—it drives out all the foul air, and then after the water passes away, a new supply of air takes the place of the water. In this way continual watering thoroughly aerates the soil. A plant in a flower-pot which seldom needs watering, is in a bad condition.—Meehans' Monthly.



FIG 736.

THE GREEN MOUNTAIN GRAPE.

THIS grape is one of the new plants which we are sending out to our subscribers this spring, on certain conditions. It is not yet much known or tested in Canada, so in the meantime we will simply give the words of Professor E. S. Goff, in "Popular Gardening," 1889, concerning it:—

Among the very promising varieties soon to be introduced to the public is the Green Mountain, a very early greenish white grape, first brought to notice by Mr. James M. Paul, of North Adams, Mass. I have fruited this grape for the past two seasons; it ripens about with Champion, while its quality ranks among the best. The vine is vigorous and quite productive, bearing medium-sized, not very compact bunches, of which the berries are a little larger than those of the Delaware. The flesh is quite free from hard pulp, and entirely free from harshness or foxiness, and its flavor is very sweet, with a slight inclination towards the vinous. I must pronounce it the only grape thus far tested that ranks first both in earliness and quality.

THE PEERLESS APPLE.

THIS APPLE is a native of Minnesota, a supposed cross between the Duches of Oldenburgh and the Tolman Sweet. The seeds were sown in the year 1867, and of them many succumbed to the cold of that State—but this survived the best of several others of like hardiness. We show our readers the cut, by favor of the introducer, Mr. O. F. Brand. He thinks it hardier than even Wealthy. He states that the tree is very productive, and the fruit well colored, and of good quality.

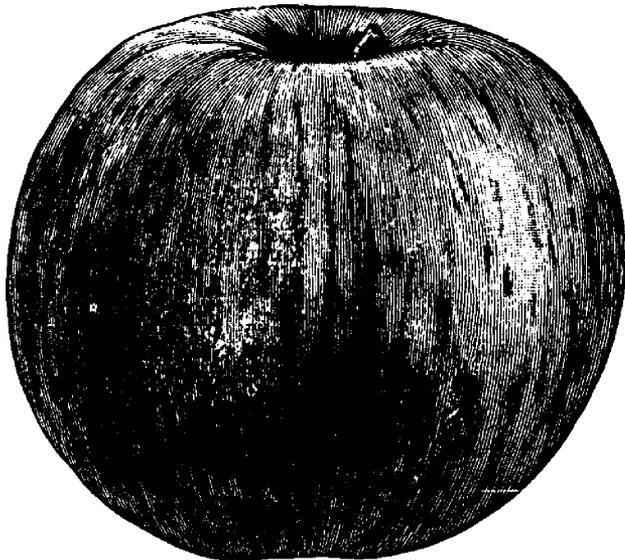


FIG. 737—THE PEERLESS.



The Garden and Lawn.

THE CACTUS HOBBY.



N eminent writer has said "everybody should have a hobby because it individualises one." and amongst the various hobbies none can give purer pleasure than the cultivation of fruits, plants and flowers. The CANADIAN HORTICULTURIST is doing a grand work in disseminating information in this direction, and as its influence is rapidly increasing it must tend to largely develop the resources of our beloved Canada, and the health, wealth and comfort of our people. And while instruction in fruit growing is the special mission of this Journal, it is pleasing to see that the æsthetic side of our nature—the love of flowers—is not neglected. The home, be it ever so humble, surrounded by carefully tended plants: a vine growing over the porch, and flowers in the windows, is an evidence of loving hearts, kindly dispositions and home comforts. Children raised in such an atmosphere are likely to be good, honorable men and women; vice and crime are not generated amongst flowers.

Amongst the special hobbies that have existed in former times, every one will recall the tulip mania in Holland when people went almost crazy over these beautiful flowers, until the Government deemed it necessary to interfere and limit prices.

Orchid growing has been, and is still, a good deal of a craze, but these can only be cultivated by the wealthy, and are, therefore, restricted to that class. About 1830, we are told, there was quite a cactus craze in England, and high prices paid by wealthy amateurs for rare species, but it died off, and until the past few years in America cacti were little sought after, but this hobby is at present very rapidly growing. Cactus societies are in existence and being

formed in various parts of the United States. Collectors are numerous, and extending their search into more distant and formerly inaccessible districts, discovering new and rare varieties, and, as demand brings supply, all excepting the rarest are to be had at very moderate prices, and here is where the advantage arises: anyone with a love of these curious, wonderful and beautiful plants, can indulge his or her hobby at a trifling expense. When a number are interested by the exchange of cuttings or plants, nice collections can soon be acquired at a small cost. I know of a large number of beautiful collections in



FIG. 738.—CACTI IN MEXICO.

Ontario, but the owners are seldom known to each other, and as articles or discussions in the columns of the CANADIAN HORTICULTURIST would tend to draw them out, I will be pleased, with your permission, in future numbers to try as an amateur to give some information on the different classes and varieties, methods of culture and management, insect enemies and diseases, which may, I trust, assist in encouraging an interest in these wonderful specimens of plant life.

Yours, etc.,

CACTUS CRANK.

THE DIERVILLAS, OR WEIGELAS.



THE Diervillas, or Weigelas, are shrubs of erect habit when young, but gradually become spreading and drooping as they acquire age. They attain a height of from four to six feet and as much in breadth. The funnel-shaped flowers are produced in the greatest profusion during the months of May and June, the precise time depending on the season as well as the situation in which the plants are growing. The individual flowers are quite large and of all intermediate shades and colors, from dark crimson to pure white. The leaves are oblong, ovate, acuminate in shape, and, with the exception of a few varieties, of a bright green color.

All of the species and varieties are exceedingly ornamental, and many of them should be found in collections of ornamental shrubbery, as they are admirably adapted for single specimens on the lawn, as well as for grouping or massing with other shrubbery.

As the Diervillas are perfectly hardy and of vigorous growth, they will do well in any soil or situation, but to enable them to do their best should be given one that is deep and moderately enriched. While the shrubs are small, grass or weeds should not be permitted to grow around or near them, and occasional top dressings of good stable manure will be decidedly beneficial. This should be applied in fall. The Diervillas produce their flowers on the wood of the preceding year's growth, so they should not be pruned until the flowering season is over, when the old wood may be shortened to promote the growth of the new which is to bloom the following season, but the branches should be reduced

only enough to keep the shrubs in good shape, as it is very desirable to preserve the natural habit of growth as far as possible.

Propagation is readily effected by cuttings, which will grow if taken off in the autumn and planted in a nicely prepared border. As good specimens can be procured at very moderate prices, I know of no reason why they should not be more rapidly disseminated among our amateur cultivators.

There is in cultivation a considerable number of varieties, from which I have selected the following as the most desirable, although a dozen others could be added, and very justly, too :



FIG. 739. — DIERVILLA OR WEIGELA
ROSEA.

D. arborea grandiflora. Grows about six feet in height and is a very vigorous-growing, large-leaved sort, with creamy-white flowers, which gradually change into pale rose. It blooms in July, about two weeks later than the others.

D. amabilis. Is commonly known as the Lovely Weigela. It grows about five feet in height and is most distinct and beautiful. It blooms during the month of June, and during that time the beautiful, large, pink flowers are produced in such profusion as to almost cover the entire shrub.

D. floribunda, the free flowering Weigela, grows about five feet in height. It blooms during the month of June, and the pendulous flowers are of a deep crimson color.

D. rosea. The rose-colored Weigela is an elegant, compact growing shrub, with fine rose colored flowers, which are produced in the greatest profusion during the months of May and June. This shrub was sent from China by Robert Fortune, to whom we are indebted for many valuable plants and shrubs, and it is considered to be one of the finest of his introductions. It grows about six feet in height. Fig. 739.

D. rosea Desboisi resembles *rosea* in all respects except in the color of its flowers, which are of a deep rose. One of the darkest and best varieties.

D. rosea var. *nana foliis variegatis* is the variegated dwarf Weigela. It is a most beautiful shrub, with rosy-pink flowers, which are produced in the greatest profusion during the month of June. The foliage is most handsomely variegated, having a clearly defined silvery margin, which stands the sun well and places it as one of



FIG. 740.—*DIERVILLA*, OR *WEIGELA ROSEA*
NANA.—VARIEGATED-LEAVED *WEIGELA*.

the best variegated shrubs in cultivation. Fig. 740.

D. rosea var. *Kosteriana foliis variegatis*. Koster's Weigela is a very choice and rare shrub of recent introduction. It is of dwarf, compact growth, with deep rosy-pink flowers, and its foliage is most beautifully margined with golden yellow.—Vick's Magazine.

A WILD FLOWER GARDEN.

Anyone who has planted and cultivated flowers in neatly laid out beds, or carefully planned ribbon borders, is aware of the amount of labor and constant attention necessary to produce the desired effect. To those who cannot give this care, the "Wild Garden" presents a substitute, which, for its unusual and varied effects, for cheapness and the small amount of labor necessary for its construction, has no rival. "Wild Garden Seeds" are a mixture of varieties of hardy flower seeds, and can be bought at a much less price than when sold in separate packets. No one who has not seen such a bed can form an idea of its

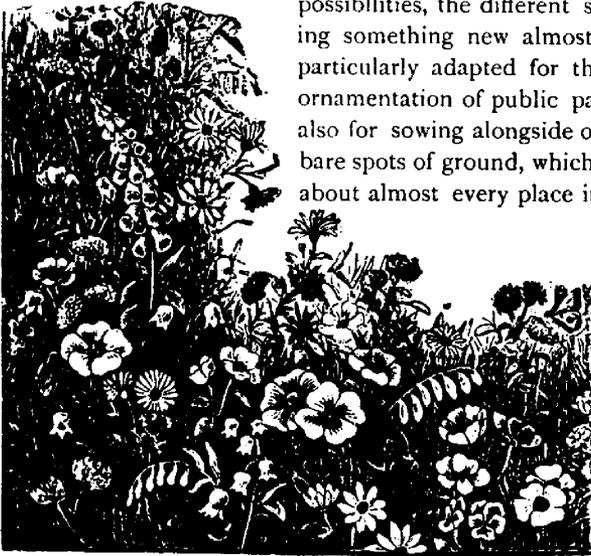


FIG. 741. —WILD FLOWER GARDEN.

possibilities, the different seasons of bloom insuring something new almost every day. They are particularly adapted for the cemetery, or for the ornamentation of public parks, church yards, etc; also for sowing alongside of fences and on untidy, bare spots of ground, which are so frequently found about almost every place in the country, which, if properly cared for and kept free from weeds, will produce more flowers during a season than are found in many of the best cultivated gardens. As there are many biennial and perennial plants among them, they will last for years with but little care. Many of the most showy varieties can be transplanted to vacant spots in the flower border, and add much to its attractiveness through the entire season. They may be sown broadcast or in drills. The drills should be one foot apart.

Toronto.

J. A. SIMMERS.





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. ✧

IRRIGATION.—On page 15 the statement is made that “in a dry season it would be desirable to apply at least one inch of water once in a week or ten days. This would require about 800 barrels of thirty gallons each.” For what area some one asks. Mr. Beall writes in reply, “for an area of one acre.”

THE NEW BOOK ON TOMATO CULTURE.—This excellent work is by S. H. Mitchell, St. Marys, a veteran market-gardener and seedsman, who has had long experience in growing tomatoes. This book is now being published in serial form by the Ontario Fruit Growers' Association in the columns of this journal, and afterward it will be published in book form. We call the especial attention of our readers to this valuable publication.

NEW AFFILIATED SOCIETIES.—Waterloo has just organized a large Society, with Mr. James Lockie president. Brampton has organized with 63 members, and so the numbers continue swelling. As all the members of these new affiliated Societies are also members of our Association, and entitled to our Journal and report, we find that we must largely increase the number of copies printed. January and February numbers of '95 have already run short, and new members henceforth will begin with March number. However, in place of the missing numbers, we beg them to accept an entire back volume of the Journal, hoping it will make up for the deficiency.

A SUGGESTION to our affiliated Societies. Since we are mapping out fresh lines of work, an interchange of ideas will be useful. We suggest that the Board of each Society should meet at an early date and decide upon what

package of bulbs or plants shall be distributed by the local society. This should contain several named varieties of some one flower, as tuberous begonias, or gladioli; because they would all come in bloom about the same time. Then in blooming season an exhibition of these blooms, named, could be held in some hall, with music, and honorary awards made for best collections. An address or essay on the Cultivation of the flower exhibits, might be given, and the occasion be designated a Gladioli Exhibition, or Gladioli Exposition, etc.

If necessary, the Societies may retain the subscription fees for the expense of these bulbs, and pay their fees to our Association when their grant comes next August.

PRESIDENT BIGELOW, of the Nova Scotia Fruit Growers' Association, gave a very able and interesting annual address. Among other things, he called attention to the great importance to the Province of the fruit industry, as follows:

In reviewing the history of this Association for the past year, we have great reason for thanksgiving to Divine Providence for an abundant crop of superior fruit and a great advance in scientific fruit culture in this Province. The apple crop may be safely estimated at over three hundred thousand barrels of the best marketable fruit ever grown in Nova Scotia. We shall ship to London alone over two hundred thousand barrels and with an abundant crop of plums, small fruit and berries, the cash value of the fruit crop of 1894 in N. S. may be safely estimated at over one million dollars, and as there is no outlay for raw material or plant power or machinery in this product, the revenue is a direct gain to the fruit grower and an immense benefit to the Province.

To form some idea of the growing importance of fruit culture in N. S., I have compiled the following synopsis from the most reliable sources:

1. Annual value of fruit crop, above \$1,000,000.
2. Annual additional value to the permanent wealth of the Province by young orchards, 5,000 acres, at \$200 per acre, \$1,000,000.
3. Value of orchards now bearing, 7,500 acres, over \$500 per acre, \$3,750,000.
4. Number of men employed in fruit culture, 6,000.
5. Number of men employed in barrel and box factories, nurseries, fertilizers and other industries required by fruit culture, 3,000.
6. Freight paid for fruit to railroads, \$60,000.
7. Fruit paid steamboats, \$200,000.

HORTICULTURAL INSTITUTES are, we hope, one of the developments of the near future. Horticultural societies are being formed in affiliation with this Association, the object of whose existence, instead of being the conferring of prizes on a ring of professional exhibitors, will distribute horticultural literature, new seeds, bulbs, plants and trees, and have meetings for hearing lectures on horticulture, and discussing the same. Here is the opportunity for holding Institute meetings for the express purpose of studying about fruits and flowers. For instance, Prof. Hutt might give a lecture on House Plants, Prof. Panton, an illustrated lecture on Fungi, and various members of our directorate could give practical addresses on Fruit Culture. Possibly the Legislature would give to the O. A. C. at Guelph, or possibly to the Board of Control of Fruit Experiment Stations, or to our Association, a special grant towards carrying out such work. Something of this kind is being carried out in New York State. The New York

State Legislature last year passed what is known as the Experiment Station Bill, appropriating \$8,000 to be expended in Western New York by Cornell University for the benefit of horticulture. The fund was to be used in experiments, investigations, in publishing the results, and disseminating information by means of lectures or otherwise.

Last December Prof. Bailey conducted a four days' School of Horticulture in Chautauqua County, at which about sixty fruit growers were enrolled. The first half-day was devoted to the subject of How plants live and grow, with microscopic demonstrations; another half-day was given to the evolution of plants; one to the theory of tillage and productivity of land; another to fungi, with stereopticon views. Each session began with lessons of observation. The interest was keen, and quite a number wrote on the examination at the close.

Surely we can profit by the example of our neighbors. If the fruit industry is one of the foremost in Ontario why should it not receive every possible encouragement from our Legislature?

MEETINGS OF HORTICULTURAL SOCIETIES.

Now that we have so many affiliated Horticultural Societies, any hints that will aid in making them successful will, no doubt, be widely appreciated. The following is from the American Gardening :

"As regards the lines on which the work is to proceed, regular meetings are a necessity, say once a month, with a lapse during the summer season; meetings of greater frequency we do not advocate, as attendance at them becomes irksome to a degree, and once that feeling intervenes, interest wanes and stagnation results. These meetings should be arranged for previously, at the beginning of the season, and a programme for at least six months promulgated. On each night some special subject should be placed for discussion, or a lecture secured, and in the latter case comments from the members invited afterward. Encouragement must be the motto—not display,—therefore, invite free interchange of opinion, listen to all, and ridicule none; many a promising man, with perhaps an over-sensitive nature, has forever held his peace after a first attempt, by the want of consideration shown by those who ought to have known better.

Induce the younger members to mount the rostrum and present the paper for the evening; by this means much good will be done, not perhaps so much in what is imparted, as in what has been learned in the preparation for that occasion. This is no fancy sentiment, but a fact which has been repeatedly expressed to us by members of many associations in which we have been interested. Another phase: At these monthly meetings the members could be encouraged to bring up meritorious examples of cultivation, new plants or varieties, or well-grown fruits and vegetables, and thus by comparison of results and discussion of methods, develop the art in which all are interested; This gives rise to a spirit of emulation.

❖ Question Drawer. ❖

Ashes for Fruit Trees.

696. SIR,—I have a large heap of ashes, probably fifty loads, which has been left from making potash. It has lain some thirty years, but is still so strong that grass does not grow upon it. Would it pay to haul it upon an apple orchard, and if so, what quantity per acre? Please answer through THE HORTICULTURIST.

A SUBSCRIBER, *Pickering.*

Leached ashes, such as our correspondent speaks of, has lost its most important element, namely, potash, which is one of the most important fertilizers for the fruit orchard. Still there is probably a small portion of this element yet remaining, and a certain amount of lime also, which would be of some benefit as a fertilizer. If the land is stiff upon which it is proposed to put these leached ashes, the mechanical effect will be particularly beneficial. In any case we believe it will pay our correspondent to cart these ashes and apply them to his orchard. It was a great mistake to allow them to remain thirty years without being applied to the land. Few of our Canadian gardeners seem to appreciate the excellent results which are obtained by a liberal application of wood ashes to the land for almost any crop. As to quantity, we usually advise about fifty bushels per acre of unleached ashes. Two or three times that quantity of these leached ashes would do no harm.

Irrigation.

697. SIR,—I notice that you answer questions free. I have a large garden here of light sandy soil in some parts that will continually dry up at every season in spite of all kinds of manure put upon it. I am growing a good many small fruits and am putting in waterworks and hose. Last season and this I am giving the land a heavy dressing of hardwood sawdust which was used as bedding for chickens, cow and horse, and had been kept under cover. I have also put on well-rotted manure for seven years continuously. I know that the want of water is the great difficulty. A part of the land is low and flat and is under-drained. The subsoil is white clay fifteen inches below the surface. Now I want to irrigate the sandy part where the stuff all wilts in August.

F. W. PLANTE, *Warton.*

It would be a great boon to fruit growers if a simple system of irrigation could be planned which would be efficient and not too expensive. We will be glad to receive the experience of any of our readers under this heading.

Dahlias.

698. SIR,—During the last two summers my dahlias have been very unprofitable, yielding very few blooms. The buds would turn black, die and drop off. On a dozen extra strong plants I had not twenty good blooms. Can you give the cause and suggest a remedy?

W. A. BROWNLEE, *Mount Forest, Ont.*

Reply by Webster Bros., Florists, Hamilton, Ont.

We have found that the dahlia buds fail most upon plants that are exposed

to the full action of the sun. It is better, if possible, to plant with a northern exposure, or where they will be shaded for part of the day. Use a heavy mulching, water occasionally, syringe freely in the evening during the hot time when there is little or no dew. We do not think the buds fail after the weather begins to cool, and until then dahlia buds are poor at the best.

Propagation of Carnations.

699. SIR.—Kindly tell us also how carnations are propagated from cuttings.
W. A. B., *Mount Forest.*

Reply by Webster Bros.

Carnations are propagated by cuttings inserted in a sand bench, (they will root in a pot) and kept moist. They root most quickly with a bottom heat, but it is not a necessity. November to March is the best time for the operation.

The Oyster-Shell Bark Louse.

700. SIR.—Is the sample of bark louse enclosed injurious to the tree, and if so, what is the best remedy?

R. J. BISHOP, *Round Hill, N.S.*



FIG. 742.

The pieces of bark enclosed are covered with scales of the Oyster-shell bark louse, something like the picture, shown in the margin. The insect is by no means rare in Ontario, indeed some large orchards almost ruined with it. So small is the insect, that the owner is often perfectly unconscious of its presence until his trees cease to grow, and begin to show limbs besmeared with the scales. These remain where they are during the winter months, but, about the 1st of June, the young lice hatch out and begin hunting about for tender portions of bark, where they can insert their beaks and begin sucking the juices. Since these increase nearly one-hundred-fold yearly, it is plain that they soon become a serious pest.

In Fig. 742, 2 represents one of the young lice as shown under the microscope, 3 one after remaining in one place for a few days, 4 a still farther change, while 5 and 6 show the louse as it approaches maturity; 7 shows the scaly covering secreted toward the end of the season, under which it lives and matures. By the middle of August this female louse is little else than a bundle of eggs. To destroy them, the bark of the trees may be scraped in winter; but the most effective remedy is a thorough spraying with kerosene emulsion, about the 1st of June. The scraping will expose the trees more fully to the action of the spraying liquid. In the absence of spraying apparatus, the trees may be scrubbed with the emulsion, or with a strong solution of washing soda and water.

Apple Trees and Dwarf Pears.

701. SIR,—In planting an apple orchard, would it pay to fill in between the standards with dwarf apple trees?

R. J. B., *Round Hill, N.S.*

No, we would not advise such planting, unless you are crowded for space. Dwarf apple trees live a long time and would soon interfere with the standards.

Pruning Plum Trees.

702. SIR,—When is the best time for pruning a young plum orchard?

R. J. B., *Round Hill, N.S.*

A young plum orchard should be pruned during the first mild weather of spring, before the buds begin to push. Summer pruning, to induce fruitfulness is sometimes resorted to in cases of an older orchard.

Fertilizing Fruit Trees.

703. SIR,—Would it be a good plan to use a small quantity of bone meal in each hole at the time of planting young fruit trees?

R. J. B., *Round Hill, N.S.*

This manner of fertilizing would be of little or no use. The little tiny rootlets, as they grow outward and into the soil, are the ones that take up nourishment in tiny particles, not in bulk. The best way, therefore, of fertilizing, is to carefully incorporate the fertilizers with the soil, and the little rootlets will search after it.

Sowing Seeds of Fruit Trees.

704. SIR,—Will you kindly inform me, through the HORTICULTURIST, when is the best time to plant apple, pear, plum and peach seed?

ALBERT MORDEN, *Vernon, B.C.*

Apple and pear seeds may be sown in the fall, when fresh and plump from the cider mill. Many persons simply sow the pomace thickly in wide drills in the fall, and cover with about half an inch to an inch of earth. Most of the seeds will grow the following spring, and are transplanted at the age of one or two years into regular rows. The seeds may also be kept in sand until the following spring, and then sown. It is usual to splice-graft yearling apple and pear seedlings. They are pulled in the fall, kept in green sawdust, and grafted in the winter season.

Peach and plum pits should not be allowed to become very dry. The

usual plan is to dig them thickly in a bed of earth in the fall—so that the freezing may assist in cracking the shells. Then in spring-time they are dug up and the cracking completed, one by one, with a hammer and block. The seeds are then sown in prepared ground about the time of planting Indian corn, or somewhat earlier.

Ashes for Strawberries.

705. SIR,—Would you please tell me, in the *HORTICULTURIST*, if ashes is a good fertilizer for strawberries?

G. S. SPAFFORD, *Warkworth.*

Yes, especially on sandy soil. The potash of wood ashes is an excellent fertilizer for all fruit trees and fruit plants.

Kentish Fillbasket.

706. SIR,—Could you tell me anything about the Kentish Fillbasket? What are its good points?

ISAAC GRAHAM, *Talbotville, Elgin Co.*

This is an old English fall apple, of great size, and considerable value for cooking purposes. It is a good market apple, and the tree is fairly productive. We do not think, however, it is generally considered as valuable as Gravenstein or Blenheim Orange, of about the same season. In our reports of apples adapted to the various sections of Ontario, no one seems to recommend this apple for the commercial orchard. We should be glad to hear the opinions of our readers upon its merits.

Time of Pruning Maples.

707. SIR,—Your Journal should be in the hands of every fruit grower—for to grow fruit properly we need all the information we can get. When is the best time to prune sugar maples? I propose to do it when the buds are bursting, and then paint the wounds with hot coal-tar.

W. L. SEARLE, *Clinton.*

Probably a better plan would be to prune soon after the fall of the leaf in autumn. The cut surface would then dry up before spring, so that little if any bleeding would follow. A coat of paint should be applied to all large wounds.

Care of Fruit Spurs.

708. SIR,—I notice apples are often gathered before they are ripe, and the fruit spurs for another year, broken off with them. In such a case how can the fruit grower expect a full crop till new fruit spurs have grown?

W. L. S.

There is no doubt that most fruit growers are very thoughtless in this respect, and many do not even observe that the spurs along the branches have fruit-bearing buds for next year, and they often destroy them by careless pruning.

Salt as Top Dressing.

709. SIR,—Please inform me what benefit is salt sowed upon the land in the spring, and which soil is most benefited by it, gray sand, black sand, or clay. What quantity should be used per acre, and what time in the spring should it be applied? Would you sow it on wheat and oats, and timothy and clover meadows? Would it be better to mix it with land plaster for the meadow?

THOMAS E. QUICK, *Leamington*.

It has long been a puzzle as to the reason of the evident good effects which often result from top dressing of salt along with wheat and other crops, because it is not an element entering into the composition of the vegetable structures of plants or their products. Besides, when applied too liberally it destroys vegetable growth. It has been found, however, that salt acts indirectly, affecting the decomposition of substances already present in the soil, and setting free some things which are needed by the plants. Common salt, says Storer, displaces lime first of all, then magnesia and potash. It must be applied sparingly, when there are no young sprouts at hand to be injured. As to quantity, from one to two hundred pounds per acre has been found to give the best results with the wheat crop. We shall be pleased to hear the experience of any reader with salt as a fertilizer.

The Windsor Bean.

710. SIR,—Could you give me some hints as to the growing of the "broad" or "Windsor" bean, as we have not been successful with it?

DEOFLA, *Hamilton*.

The English or Broad bean is hardy and may be sowed as early in spring as the ground can be got in good condition. In England a common plan of sowing is in double rows 9 inches apart, and a space of 30 inches between; but the common American plan is in drills 4 feet apart. The seed is sown 2 inches deep and 4 inches apart.

Unproductive Trees.

711. SIR.—I have in my orchard some fine looking, healthy, F. B. Pears, Spy apples, and large blue plums (don't know name), which have been planted 16 or 17 years and yet produce no fruit, though they blossom profusely every year. They have been fairly well pruned, and mulched with chip dirt, manure, and occasionally some wood ashes put about them. The pears appear to blight, a sort of rust fungus attacks the fruit while young and causes them to crack open and fall off, the leaves are also affected in the same way. The plums, as soon as they are nicely formed, fall off; and the Spys, though they don't appear to blight, yet they do not bear fruit? Now, sir, if you could give me a cause and a remedy for all this, I am sure I would be very glad indeed.

B. F. QUANTZ, *Stroud (near Barrie)*.

Probably the fungi which cause rust and blight are at fault for the unfruitfulness of these apple, pear and plum trees. We would advise our correspondent to give a faithful trial to the fungicides given in Prof. Craig's table, which we publish in this number.

Pruning.

712. SIR.—When is the proper time to prune, and do pears require much pruning, and do they require iron filings about them?
B. F. Q.

Pruning of the apple and pear may be best done during any of the mild days between the fall of the leaf in autumn and the swelling of the buds in spring. Iron filings about a tree are not *necessary* in any case, but as the air acts upon them, causing rust or oxide of iron, a useful fertilizer is provided.

How to Prevent the Ravages of the Onion Fly.

Reply to question 684.

After twenty-eight years' experience, and trying about as many remedies for the Onion Maggot, I have found the following the most effective, in fact, I have never known it to fail when properly applied :

Procure some perfectly dry, fine soot, sow sufficient of this broadcast to thoroughly dust the plants. Apply very early in the morning before the dew is gone, or immediately after a rain, so that the soot will stick to the plant, thus preventing the fly from depositing its eggs in the young growth, as it seems to have an abhorrence of the soot and will not come near it. The first application to be made when the young onions are about three inches high ; four applications in four weeks, one each week, I have always found ample. In very showery weather, apply oftener.

"Inglewood," Hamilton.

W. HUNT.

* Open Letters. *

Experience in 1894.

SIR,—The frost and drouth of last spring and summer reduced the strawberry and raspberry crops to about one-quarter the amount we had the preceding year. We would have lost all our strawberries had we not thrown straw over the rows when the plants were in blossom, thus saving them from the last two heavy frosts. Our apple crop promised to be very heavy, but the fruit dropped off until very few apples were left, but they were of good quality considering the unfavorable season. Our cherry crop was good and there was no black knot upon the trees. Our young strawberry plantation did well, considering the drouth. We kept the weeds out and the ground well pulverized on the top, and we even took the trouble to cover the runners as they grew. Had we not done this, our chance of a crop next year would be poor. When the fall rains came, those plants just pushed ahead and went into winter quarters well rooted, although the tops were not large. In November we gave them a top-dressing of ashes and lime. The object of the latter was to sweeten the land, because we believed it somewhat soured on account of the presence of a great deal of sorrel. Then we mulched them with long coarse manure. The Smith's Giant raspberry and Michel's Early sttawberry came to hand from the Fruit Growers'

Association in first-class condition, and I will have seventy-five young plants to set next spring. I got one hundred Woolverton strawberry plants from Mr. Little last spring. They are good growers, but shy runners. I intend planting them in check rows. I have planted a good many Williams, but they have not done well as yet. Yours truly,

ELLEN FEAR, *Elmira.*

A Peculiar Calla.

SIR,—When calling on Miss Kingston, of Port Colborne, recently, that lady drew my attention to a Calla Lily in her drawing-room, having a peculiar flower growth. The plant was in a very healthy condition. On observing it at a distance of a few feet, there appeared to be two spathes from the same stem, fronting each other. Upon a closer examination, one of the formations was seen to be less perfect in form and more irregular in outline, rather longer from base to point and having a small part of its extremity quite green. As the spadix was entirely absent, it must, I suppose, have been a leaf, although it had the exact color and velvety appearance of a spathe.

J. B., *Lindsay.*

A New Tool.

SIR,—With me the Fay's currant is only a moderate bearer, but is a luxuriant grower. The wood is too weak, and I have not yet been able to form the bushes into a handsome shape. Last year I allowed no shoots to grow more than five or six inches long, and pruned them, as well as the other currant and gooseberry bushes, three times, giving the last pruning immediately after the fruit was picked. As it was the first time I have pruned so often and so closely, I am awaiting the results. I am an amateur gardener, and only a twelfth hour amateur at that, for I am a retired tradesman, "who has seen his winter's sun twice forty times return." I have used a hoe—I call it a weeder—for nine or ten years, which anticipated what is now called the Crescent hoe. It is made out of two pieces of an old scythe blade wanting the back, two ends of which are rivetted together at an angle of a little more than 90°, thus (Fig. 743): A small piece of round iron, one-half inch in diameter, is rivetted to it and receives the handle (Fig. 743). I find it very useful among bushes of every kind, as well as in the strawberry plantation. I run it under about an inch below the surface. My soil is varying loam, and I do not know how it would answer in heavy soil. I find that a common garden rake is improved by fixing the head on a hinge, so that the teeth can move back and forth about 60°. The rakes now have the teeth about square off the back of handle, and made their best work when they are pushed from you at an angle of about 30°, behind a perpendicular line, and the hinge, when the rake is turned toward you, allows it to go as far on the other side of the line. Thus it grinds down lumps without raising them, while, if you wish to rake the refuse off the surface, a few minutes' work alters it to a stiff rake.

R. STEED, *Sarnia, Ont.*

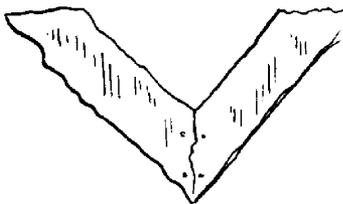


FIG. 743.—BLADE OF HOE.



FIG. 744—ATTACHMENT OF HANDLE.