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MR. MURRAY FELL

THE
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SOME CANADIAN HORTICULTURISTS.—XVII.

MR. MURRAY PETTIT.



PROMINENT among the vineyardists of Niagara district stands Mr. Murray Pettit, director of the Ontario Fruit Growers' Association for district No. 7, which includes the counties of Wentworth, Wellington, Waterloo and Halton. To this office he was elected at the annual meeting held in the Town of Wingham in the year 1885, a position which he has held ever since.

Like Mr. A. H. Pettit he belongs to one of those old and respectable families of U. E. Loyalists, who would not stay in a country that had broken its connection with England, and, therefore, came to Canada soon after the Declaration of Independence. His grandfather, John Pettit, came to Winona, then called the Fifty Mile Creek, and received from the Crown a free grant of four hundred and sixty-eight acres of land, as a reward of his fidelity. There, on the south shore of Lake Ontario, the family has ever since resided.

Mr. Murray Pettit was born in 1843 on the old homestead. About twenty years ago, he awoke to the possibilities of his situation for the cultivation of fruit. Little by little he has extended his efforts in this direction, until now he has over fifty acres so occupied. His first venture was a peach orchard of eight acres, then considered a very large one. He reaped a few fine crops of peaches and was just beginning to feel encouraged with the prospects of excellent returns for his venture, when in the year 1879, the yellows, that scourge of peach

orchards, appeared. This was then so little known to fruit growers in Ontario, that it was not recognized as an evil, and trees, so affected, were thought to be of some earlier variety of their kind. Consequently they were not destroyed, and, being thus unchecked, the yellows soon spread over the whole orchard and utterly destroyed it.

Mr. Pettit then turned his attention to grape growing and soon proved it to be a more reliable branch of industry than peach growing. In addition to his vineyard, he planted a sample row of over one hundred varieties, by means of which he has become well acquainted with their merits and is well fitted to act as judge of grapes at our Canadian fairs. When the Niagara grape was introduced into Ontario he was one of the first to plant a vineyard, under the terms which the company imposed upon all buyers, namely, that the proceeds should be equally divided between them and the planter, until the company had received \$1.50 for each vine. The investment was a profitable one for Mr. Pettit; the three hundred vines planted in the spring of 1882 yielded him in the fall of 1885, not three years from the time of planting, an income of \$1.84 per vine, or \$553.20 for three hundred vines. The average price was about 12 cents a pound and the proceeds were at the rate of over \$800 per acre.

Mr. Pettit has always shown a public spirit with regard to the interests of fruit growers in general, throughout our country. That this spirit was appreciated by his fellow growers is evidenced by his being appointed a director of the Fruit Growers' Association at Grimsby, of which he at one time served as president. He was chosen as one of the deputation from this Association to wait upon the Local Legislature, to secure the passing of the "Yellows Act" in 1881, and he was also appointed by the township council as inspector of yellows in his township.

On the organization of the Niagara District Fruit Grower's Stock Co., he was chosen a member of the first directorate and served either as director or vice president, until his retirement from the company. For several years he was also a member of the directorate of the Central Farmers' Institute. In the township of Saltfleet he has served for five years as Reeve. His membership in the Ontario Fruit Growers' Association dates back to his first entrance upon fruit culture, twenty years ago.

It is such men as Mr. Pettit, who have long been members of the Association, and who have in various ways exerted themselves to further the interests of their fellow fruit growers, who have the first right to be noticed in these pages as prominent Canadian Horticulturists.

SAUNDERS AND WOOLVERTON STRAWBERRIES.—Woolverton is a large, productive variety, and is very firm for so large a berry, and a first-class variety to plant with large pistillate kinds. Very valuable; from Canada. Saunders is from the same source as the Woolverton, and is another valuable berry, being early, firm, of large size and productive.—*American Ex.*

THE GIBB CRAB.

SIR,—Last season I was persuaded to set out a good many Gibb crab apple trees. Can you tell me whether the Gibb has any better qualities than Hyslop, Montreal or Toronto Beauty?

G. W. BEEBEE, *Agassiz, B.C.*



HIS hybrid, or supposed hybrid, Siberian crab, was introduced into the Province of Quebec some fifteen years ago, by the late Chas. Gibb, of Abbotsford, in whose honor it was named by the originator, Mr. G. P. Peffer, of Pewaukee, Wis. Mr. Gibb says: "It is a seedling of the Siberian, fertilized by Fall Greening. The fruit is large in size, averaging two inches across by an inch in depth. I have grown specimens which were three inches in diameter. The skin is yellow, with a blush of dull red on one side. Flesh, remarkably yellow, crisp, and juicy, with a rich mingling of acidity and sweetness. Its astringency is hardly perceptible unless specially looked for. The flesh is quite firm, but breaking—though not melting—until it becomes mellow and ceases to be crisp. Its thinness of skin and sprightliness of flavor are Siberian characteristics, which make it a favorite. It has borne heavily with me for the last four years, and is my favorite canning crab. It is as yellow as a Crawford peach, and has much of the richness of a

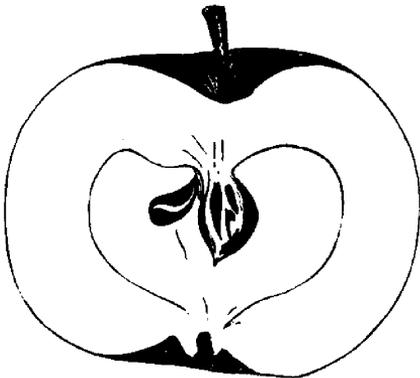


FIG. 53.—GIBB CRAB.

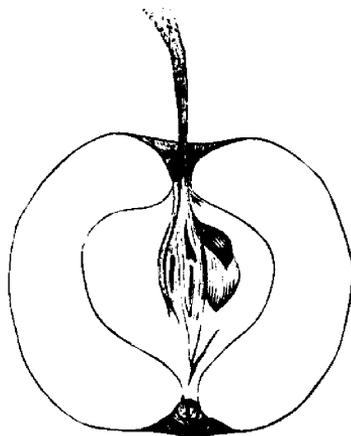


FIG. 54.—ORANGE CRAB.

plum of the Yellow Gage type, yet too sweet for constant use. Season, from September 15 to 30th." In the *Wisconsin Horticulturist* for 1884 this is classed among the "six best crabs." Wherever this has been introduced in the Province of Quebec it is highly esteemed as a canning crab. It is thinner skinned and much less astringent than either Hyslop or Montreal Beauty, in fact, less

crab-like. The tree is a slow, spreading grower, fairly hardy, and very productive. With twenty-five or thirty varieties of crabs to choose from at the Gibbland Farm, Abbotsford, this has been selected in canning for home use annually for the past ten or twelve years. Gibb and Orange (of Minnesota) are the two best canning crabs I know of. Planting for profit, I should include Gibb, Hyslop, Transcendent, and Montreal Waxen. This latter is more generally known as Montreal Beauty, but is distinct from the true Montreal Beauty as originated on the Island. Orange was introduced by Mr. Gibb from Minnesota—a yellow fruit, not sufficiently attractive as a market sort, but excellent for canning, being almost wholly free from astringency. The accompanying figures have been copied from drawings by Mr. Gibb.

JOHN CRAIG.

Experimental Farm, Ottawa.

THE PROFIT IN RASPBERRIES.—Raspberries would hardly be a profitable crop at five cents per quart, unless it was five cents net, as it costs $1\frac{1}{2}$ to $2\frac{1}{2}$ cents per quart to pick them, to say nothing of expenses of marketing, which are as much more. An average crop is about 1,000 quarts per acre for the three or four years which they bear fruit and they soon run out. They ought to bring eight cents per quart, to make it a fair business. They do best on a good garden soil, but would grow on sandy land if there was moisture enough in the summer. Well rotted yard manure should be applied every fall and worked in around the roots with a fork. As far north as Nova Scotia and Northern United States they would have to be laid down through the winter, which is neither an expensive nor long job.—*Farm and Home.*

THE PEACH ROSETTE.—This formidable disease of the peach is fully described and figured in Prof. E. F. Smith's able and copious report issued by the Department of Agriculture. It seems to occupy the ground in the South that the yellows covers through the North and in the Central States, but it is more speedy in its work of destruction. It is equally fatal to budded trees and seedlings, cultivated, uncultivated and wild. It takes the Wild Goose and other wild plums. It runs its course in about six months, and does not linger. Commonly, it first appears in early spring. The leaves form compact tufts or rosettes, turn yellow in early summer, and afterwards fall. They do not afford enough shade to hide the branches, and the tufts are conspicuous and may be seen at long distance. They drop their fruit early; it is small, green and more or less shriveled. It has occurred abundantly in Northern Georgia, but not in South and North Carolina. It differs from the yellows in the absence of prematurely-ripening fruit, and in a less tendency to develop slender shoots from the large limbs. It is virulently contagious. Extermination is of course the only remedy.

TRIMMING GRAPE VINES.



AS I promised you to say a few words upon this practical subject, I shall remark that pruning, in its essential quality, is antagonistic to nature. It is an effort to bring her in harmony to our designs and our uses, so as best to promote our advantages and to reach our ideals. Or as Shakespeare says: "This is an art that does mend nature."

Further, it may be regarded as a mortal thrust at the life of the plant, and often causes it to produce and do what it would not or could not otherwise be induced to do. As, for example, to bring a fruitless plant into the state and condition of fruit bearing, and to improve the quantity and the quality of the fruit of a plant, heretofore unsatisfactory. Further, I may remark, that all pruning should be with matured and enlightened judgment, and to the least possible expenditure or loss of the vital forces in the plant. It is better if it can be made not so much a severe and bleeding slaughter process, threatening and taking the very life of the plant, but rather corrective and directive of its forces, so as to accomplish our ends and designs in its life, and to show us its beautiful fruits in highest perfection of quality and with the least possible disturbance of its vital economies. The plants most easily affected by pruning and other manipulation, are the grape vines and raspberries of all sorts. These can be made, to produce for us almost up to the demands of our will and by mild and judicious manipulations are improved by the process. The readiness and willingness of response in these directions will often astonish us and is itself a proof of the perfect subjectiveness of nature, in all its forms, to man, as the head of creation and lord of the vegetable and lower world.

The vine may be regarded as an immense reservoir of pleasing resources of force and fruitfulness, that, to be so pleasing and satisfactory and profitable to us, must be properly developed, controled and directed to our advantage, but if neglected, seem to waste itself—and actually does—in rampant, useless growth, and mere showful foliage. The philosophy of pruning, is simply to throw the vital forces of the plant where most useful, viz.: in the full and proper production of fruit in the highest perfection of form and internal quality, and to prevent loss as much as possible by useless exuberance. In the case of grapes it is very easy to tell by looking at the fruit, what the management has been, whether good or bad. The small, poorly filled bunch and meagre skinny berries filled merely with seeds and a valueless scanty liquid, is a standing comment of neglect and a severe stricture upon Canadian grape growing. The opposite of this is the exception and not the rule, for which we greatly lament, as better things might and should be said of us. Only witness the studied art in this particular as seen practically carried out in our best vine-houses under

the best trained and skilful practice? This system brought directly from older lands, commends itself to us and our attention, and is the outcome of generations of training and high culture. The effect upon the observer is at once proof conclusive of excellence, as I, myself, had the great satisfaction of inspecting one of these grape-houses near St. Catharines only a few days ago, and saw the rich, beautiful, ample and well-placed bunches, now ripe and ready for the knife on July 11th. Cannot this fine culture be utilized, at least in some of its main features, in the production of ordinary Canadian grapes out of doors? We think it can, and should. This matter as it appears to us, lies at the very bottom of all successful culture, and it appears useless to expect good results where these fundamental principles are either disregarded or ill-applied, for in reality the force of the principles in either indoor or outdoor work, are the same. It makes us impatient to be obliged to listen to objections to fundamental principles, but as these are urged by otherwise intelligent grape growers, we may be excused in attempting to reply to a few of them.

1. *It may be good, but we cannot get skilled labor to do it.* This objection if true, is simply a crying shame, either upon us or our country, or upon both, as skilled labor can be secured upon every other art or business that we are determined to do. And amid the light and knowledge of industrial and art schools and agricultural colleges, it cannot be in any respect true, and therefore not valid.

2. *It is too expensive and will not pay.* This objection is refuted by practice and patient trial. We believe that it cannot be substantiated, as it is found on trial that it does pay, and pay liberally and well, as a few days' work upon a vineyard will soon make a difference of several hundred pounds for the market.

3. *It might do very well for vine-houses, or for vineyards on a small scale, but it is impracticable on a large one.* This objection at once loses force, for what use has a man for a vineyard on a large scale, when better results can be accomplished on a much smaller one? In traversing the Grimsby area, for instance, for vine culture, we notice that every farmer almost is planting out more acres and then leaving them to the mercy of the sun, the weeds and the weather for hopeful profits. Is this not a ruinous waste of good soil, worth several hundred dollars per acre? What good can be served by such a practice, except to astonish the occasional visitor by mere dimensions? We believe a better practice must be adopted, before such grape growing can be made a success.

4. *The grape market is not as yet sufficiently discerning of methods and qualities.* This objection is simply the grandest mistake of all, and is founded upon false or imperfect observations. Take a market like that of Toronto, today, and very many others throughout Canada, and the taste and discernment in these markets is, to-day, sufficiently acute to drive out every basket of poor quality, if a sufficient number of baskets of good quality are obtainable by them, even at an advanced price per pound. Poor grapes are not of much value any-

where, but they should never be forced upon the tables of our people; but if produced and offered, should be at once consigned to the factories and wine vats. Skillful culture and good results should be and must be the motto for each and all of our Canadian vineyardists for the future. Though these remarks are largely confined to the grape vine, they may be very largely applied to the raspberry and other fruits. Should it be desirable, I shall have no objections to give, as far as possible, for the good of others, methods and processes in detail. In the meantime, I do hope for Canadian fruit-growers over this whole country, the highest distinction of the art.

Arkona, July 20th, 1892.

B. GOTT.

TREATMENT FOR BLACK KNOT.



T a recent meeting of the Massachusetts Horticultural Society Professor Maynard said that the black wart should be treated at once upon discovering its presence, by an application of the Bordeaux mixture, and followed up by another application of the same remedy every two weeks, as a new crop of the fungus spores (*Plowrightia morbosa*) will generally mature in that time, and continued until no evidence of fresh spores can be found. If applied in the spring, the eau celeste liquid will destroy these germs, but if they become established the knife will have to be used, and the wounds thus made should be covered with a coat of paste, composed of some ochre or whiting, or any other of the dry, earthy pigments, mixed thoroughly with kerosene to a consistency that can be readily spread with a brush over the exposed surface, without running beyond the limits of the wound. This would protect the surface from atmospheric action, kill the wart, and prevent the development of any fresh spores which might fall upon it. He had visited a plum orchard in Lancaster, which was literally breaking down from the development of black wart. In that case nothing could be done but cut off all the tops. Should a dressing of hen manure and ashes be applied to the land the trees would, in due time, produce new and healthy tops. Allusion was also made to the wild choke cherry as a much neglected propagator or nursery of the black wart.

Nathaniel T. Kidder called attention to Professor Maynard's remark about the wild cherry trees, which are infected with not only black wart but sundry insect pests. He wished to impress this fact upon the minds of all present, and would like to encourage a war of extermination against the wild cherry because of its availability for the multiplication of these enemies to fruit production.

Mr. Strong asked about the extent to which cutting out the black wart should be carried.

Professor Maynard said the diseased portion should be cut out clean. The rootlets (mycelium) penetrate deeply into the wood, and if not all removed the disease continues to extend; therefore a partial cutting is a waste of time.

THE CULTIVATION OF BLACKBERRIES AND RASPBERRIES.



It is not an agreeable sight, after a winter of heavy snows, to find our small-fruit gardens giving no promise of a crop for the year. Really, this is unnecessary. My raspberry canes have come through in almost perfect order; the loss from breaking is not one per cent. This is accomplished by tying the canes, in bunches of three or four, above or below a wire which extends along the row. The variety I mainly grow is Cuthbert, which does well in solid rows. These rows, before I learned to tie them, were often flattened to the ground under drifts. In the spring much labor was needed to put them in order. I adopted the plan of cutting low; but, while the breakage was less, the crop was also diminished. I now grow canes five or six feet high, and tie them with stout, coarse hop twine. Our only cultivation is in the spring, when the ground is mellowed as soon as possible, and kept mellowed until the cultivator will break the growing shoots too badly. After that nothing is done except to manure the ground in the fall.

The object of running the cultivator closely in spring is not so much to destroy weeds as to cut up the sprouting bushes and throw all the strength of the new growth into canes in the rows. If left alone the ground between rows would be absolutely filled with young shoots. In spite of the cultivator, I am obliged in the fall to dig out superfluous canes. These are heeled in till spring, and then sold. Every grower of small fruits should have his surplus bushes and vines in shape to be disposed of at some profit. Until last year I grew my raspberries even higher than at present, and the advantage was in shading the ground, as well as making it more convenient to pick; but I have changed my plan somewhat, because the tendency was to shade too heavily the young shoots and weaken canes. The wall of berries presented on solid rows of canes, tied as described, is a picture.

In growing blackberries we are compelled to take into consideration the style of growth, for some of our standard varieties send up invariably erect canes with few side shoots, while others are spreading and sprawling. Of the former kind are Snyder and Wachusett's; of the latter, Minnewaska, and between the two, Erie, Agawam and Taylor. There is a decided advantage in the upright growers if you insist on cultivating between the rows. But this, after the berries have taken full possession of the soil, I abandon. They will smother weeds and grass and no hoeing is necessary. After the second year I do nothing but cut out dead canes and shorten the tops, either in the fall or spring. The main point with blackberries is the soil. This, if possible, should be cool, loamy and rich, but I never allow any application of barn manure. Fertilize with soil, rotted chip soil, or whatever will mulch and cool the soil.

Our chief danger with blackberries is a dry spell when the berries are reaching

maturity. Of the berries now in cultivation, my choice for quality is Taylor and Agawam. Erie has not killed back this winter, as it sometimes does, but it is not with me a good cropper of fine berries. Snyder is always reliable, but of moderate quality. Wilson Jr., I see, is still spoken of by some as hardy, but here it is hopelessly a failure. It kills down always, and even in the winters when peach buds escape. Kittatinny is a noble fruit, and I get a crop from a small field by bending down the canes. Wachusett's Thornless does not differ largely from Snyder, and is entirely hardy.

Few berries are badly affected by dry weather. On the whole, the key to success is cool, moist soil, not wet. If planted on high land, either mulching must be resorted to or frequent use of the cultivator. The Lucretia Dewberry is tender, and must be laid down for winter and covered with leaves. In the spring I lift mine and tie to trellises. It will not pay to plant large fields. The demand for the dewberry is, however, unlimited, but few persons are willing to incur the labor of cultivating it. The fruit is enormously large, very rich, and two weeks earlier than the high blackberries. It will not ship to a distant market.—E. P. POWELL, in *Garden and Forest*.

ARRANGING HOME GROUNDS.



E wish here to point out the gain that in many cases would result from substituting a graceful curve for the straight walk in the front footpath to the house, which, in ninety-nine cases out of a hundred, prevails. The gain would be five-fold in nature: First, as we approach the home from the street, it is a direct relief to the eye to have the house, in which straight lines and square angles everywhere abound, set off, by way of contrast, with a gentle yet bold curve in the outline of the approach. Second, to approach a house from such a direction that a glimpse or suggestion of its side, in addition to the front, meets the eye, gives a more favorable impression than to come up from directly in front, with only one side visible; but this principle should not be applied to such an extreme as to make the walk lack directness, or to give it a strikingly serpentine course. Third, as seen by passers by, a residence of almost any style appears handsomer when observed from the front across a stretch of lawn than when seen at the end of a straight walk, directly in front of it. Fourth, the advantages that have been named will appear about equally marked in reverse order—to a person standing on the front verandah or looking from the front windows. Fifth, in the present instance the location of a bold, irregular group of flowering shrubs directly in front of the verandah gives a better effect than if the same shrubs were arranged in one or more beds on either or both sides of a straight walk, as in the original plan —*American Gardening*.

BEST TIME TO TRANSPLANT EVERGREENS.



THE impression prevails that there is more risk of loss in transplanting evergreen trees than deciduous trees. This is undoubtedly true when trees of considerable size are taken. The very name indicates that these trees are always in full leaf. Consequently there is an immediate draft upon the resources of the trees, after planting. It is essential, therefore, that there should be immediate root action, to supply the demand. It is then self-evident that the fall is not a favorable time for this work. Undoubtedly there are many instances where trees, with more or less earth, have been removed late in the fall, and have lived. But in our cold climate there is little or no root action from November until May, and hence the tax upon the tree late planted and exposed to the drying winds of winter and early spring is very great, and frequently fatal. There is a very general agreement among planters that early spring is also an objectionable time. The ground in March and April is usually wet and cold and the root action must necessarily be very sluggish and insufficient to supply the increasing demand from evaporation.

But in the month of May the ground has become warmer and all the organs of the tree are excited into activity. It has been found by uniform experience that a most suitable time for removal is just as the buds begin to swell and indications of returning life appear. There is sap enough stored in the tree to sustain it until the speedy action of the roots will continue the supply. Consequently the great bulk of this work is confined in our latitude to the month of May. It is unfortunate that this large work is confined within the narrow limit of this busy month. There is also a more serious objection that the inevitable check consequent upon removal occurs just at the time when the tree is coming into its active growth. It is, therefore, to be expected that this growth will be enfeebled and the appearance of the tree affected, for the first year. If a hot, dry spell occurs in June, the evaporation from the young growth is excessive and losses frequently occur. Still we must repeat that May is the month for removals. Is it the only month? For many years past I have advocated the month of August as a most suitable time.

An extensive experience covering a period of over twenty years leads me then to this general opinion that in cases where conifers can have quick transit it is safer to remove in August than in May. Especially is this true with large sized trees, like Spruces from eight to ten feet high, where distance does not forbid taking them in wagons. In all cases the growth of the first season after transplanting will show a marked contrast in favor of the August planted tree. If this opinion is sustained by the experience of others it will prove to be a most important advantage in extending the time of planting to more than double its usual narrow limits, and to a season when there is more leisure than in the hurry of spring time. This subject appears to me to be of such importance that I am willing to bear the brunt of sharp adverse criticism until the truth can be unstrated.—W. C. STRONG, *before Mass. Hort. Soc.*

FRUIT GROWING ABOUT ST. CATHARINES.



HAT St. Catharines has many empty shops and dwelling houses, and that real estate is offered for sale at very low prices, is no ground for supposing that it is inferior to any other part of the famous Niagara peninsula for commercial fruit growing and market gardening. To-day (July 23) the writer made a short tour about this town and out as far as Port Dalhousie, and the result is that he now has a higher estimate of that section than ever. The finest peach orchard we know of is the one we visited to-day, owned by Mr. McArdle, and in charge of Mr. Kotmeier. There are about fifteen hundred trees, three years planted, of such varieties as Alexander, Rivers, Wheatland, Crawford, etc., and every tree was loaded with fruit. Some two-year-old trees were also full of fruit. We would not be at all surprised if the yield should reach over three thousand baskets of beautiful peaches, largely Early Crawford. The foliage was healthy, and the fruit is holding on firmly. We can only explain this marvellous success in peaches by the extraordinary care which the trees are receiving. The spring tooth harrow is kept constantly moving, so that the ground can never harden or dry out. Ashes are applied liberally, as well as other commercial fertilizers, while the trees receive an annual shortening in. This instance proves how well it pays to give the best treatment possible to the fruit garden and orchard.

Mr. A. M. Smith's orchard and garden at Port Dalhousie was next visited. This is the home of the Pearl gooseberry, which has previously been fully noticed in these pages, therefore, suffice it to say, that it is bearing out its good reputation for wonderful productiveness. Besides growing plants Mr. Smith has set out two acres of the Pearl to grow the fruit for market. This year it has sold in Toronto at an average of ninety cents a basket, and the crop is so heavy that he has no trouble getting it picked at ten cents for a twelve quart basket.

Smith's Giant blackcap is one of the most interesting new things here shown us. It is a new berry which equals, if it does not surpass, the well-known Gregg in size and productiveness. The bush is certainly a more vigorous grower, and Mr. Smith states that he finds it much more hardy. This latter quality alone would be a *raison d'être*. It was surprising, the load of fruit on bushes one year from the tips.

Saunders' Black Currant is another well-tested and commendable novelty. In his large plantation of black currants were Champion, Black Naples, and Saunders, side by side. And while the Champion was a sweeter currant, the Saunders was the most heavily laden of all, and its bunches most easily gathered. This latter is truly an important characteristic of any black currant.

We concluded that our readers, who passed it by when it was on our list for plant distribution, made a serious blunder.

Like the peaches and pears elsewhere, these fruits were a small crop at Port Dalhousie. Mr. Smith has, perhaps, one-third of a crop of peaches, and Mr. Kerman possibly half a crop.

With a daily boat service across the lake to the City of Toronto, we see no reason why the country about St. Catharines should not become, in time, one vast and beautiful garden.

OUR CANADIAN FAIRS.



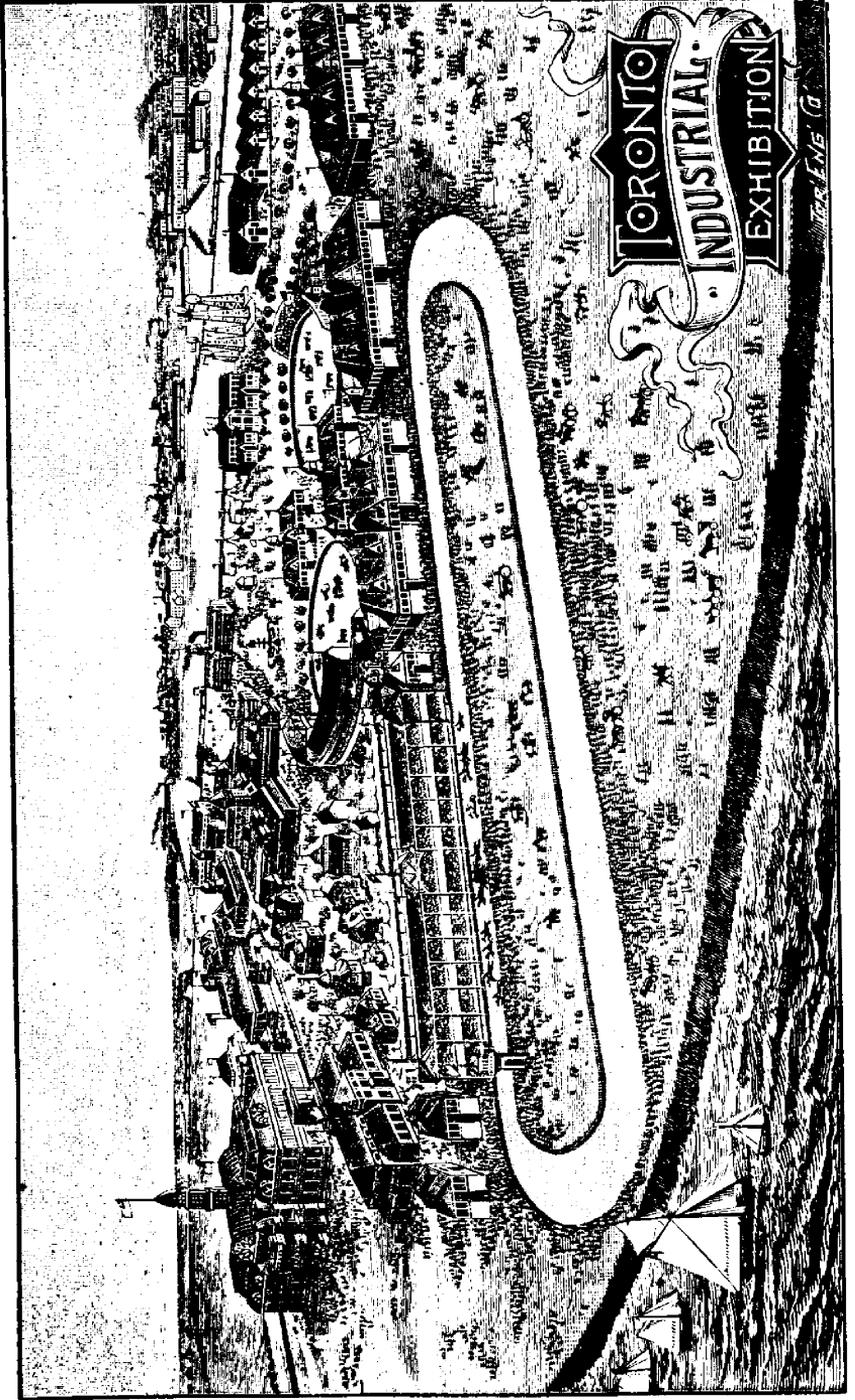
SINCE the establishment of Central Fairs, such as the Industrial at Toronto, the Western Fair at London, and the Central at Ottawa, a much greater local interest is awakened than was possible in the case of the Provincial, which, like some travelling show, came occasionally within one's reach, but was entirely managed by outside parties. The prize lists of the two former fairs have come to hand,

and are a credit to the local enterprise of the cities of Toronto and London, respectively.

The Secretary of the Industrial, Mr. H. J. Hill, has kindly sent us a cut of the grounds, and it is so well executed, and so truthful, that we give place for it in our columns with pleasure. On the Committee in charge of the Horticultural Department, we notice the two representatives of our Association, Mr. W. E. Wellington, who is Chairman, and Mr. Joseph Jackes. The Superintendent is Mr. Robert Murray, of Toronto.

Attention has frequently been called in these columns to the want of some more legible system of naming all fruits and flowers on exhibition. These names should be printed in heavy type, and attached in some conspicuous manner, so that visitors could have more satisfaction in viewing the exhibits.

HOUSE PLANTS.—Neglect will bring on insects. Aid plant-health by proper watering, cleansing the foliage, removing dead leaves and faded flowers, and re-potting as needed. If a few insects appear, notwithstanding this treatment, pick them off by hand. Watering cannot be neglected without serious consequences. In summer, the best time to water is towards night. Coolness and moisture will then surround the plants until morning. Winter-flowering plants, such as begonias, chrysanthemums, carnations, poinsettias, heliotropes, roses, etc., should now grow rapidly. Pinch them back every few weeks to promote stocky, shapely forms. Shift the potted plants into pots one size larger as soon as the roots begin to mat in their old quarters. Stake fuchsias, cobæas, and other plants promptly, as needed.—*American Gardening.*



THE BORER OF THE CURRANT BUSH.



THE parent of the now common and widely distributed currant bush borer is a small, slender, dark-blue moth, with transparent wings, but rarely seen except by entomologists who know where to look for such insects, or breed them from the larvæ found in the stalks of currant bushes. These moths usually appear in July, and the females deposit their eggs singly at the axils of the leaves and on the vigorous young shoots. When the eggs hatch, the minute grubs bore directly into the stalk until they reach the soft, succulent pith, following this and feeding upon it until they arrive at maturity the following season. This destruction of the pith of the cane so weakens it that it is very likely to be either broken off by winds or it dies the next season before the fruit comes to maturity. But sometimes the cane is not killed the first season, especially if the grub bores its way from some lateral twig into an old cane, and the latter may live a year or two after its pith has been completely bored out; usually, however, the presence of the borers may be detected by the feeble growth of the young canes, and their pale-green or yellowish leaves late in the summer. By carefully examining the bushes in August and September, or very early in the spring, the infested canes can be found, and these should be cut out back enough to reach the sound pith, and the part removed and burned, in order to destroy the grubs within them. No other effectual way of getting rid of this pest has been discovered, but this is not at all difficult or expensive, and it should be repeated annually so long as a grub is to be found in the bushes.—ANDREW S. FULLER, in *N. Y. Tribune*.

GRAFT EARLY.—The reason why many fail in getting a good stand of cherry grafts is that they undertake the work too late. The buds should be inserted just before the trees burst into leaf. They must be cut early in winter and placed in sand in a cool place to keep them dormant. If the buds start previous to grafting, the union will not be rapid enough to supply them with sap.

PASTURING THE ORCHARD.—This question was fully discussed at the last meeting of the Central Illinois Horticultural Society. One member spoke of turning goats into orchards, but others warned orchardists against them. Mr. Winn says he once turned Angora goats into his orchard but they began to feed upon the trees' foliage at once. Hogs are the only animals that can be pastured in orchards. They will pick up the apples and eat the worms. But perhaps it would be preferable to cultivate rather than to pasture the orchards. The only proper method of pasturing is to drive in the hogs, let them stay in the orchard long enough to pick up the apples, and then turn them out again. "Pig-power" cultivation for orchards was not universally approved. Professor Morrow said that whatever harm the hog may do to the orchard, the orchard certainly will do much good to the hog.

The Garden and Lawn.

THE PICOTEE.



P to the year 1850 carnations were among the most popular flowers of the garden, but, since that time and until very recently, they have given place to other flowers in obedience to the dictates of fashion. Of late they are again being restored to their place, and surely no flower is more worthy of a prominent place in our garden than the various members of the pink family.

There are three principal varieties of the genus *Dianthus*, viz. : Carnations, Picotees and Pinks. The first two differ only in the marking of the flowers, the petals of the carnations are either flecked or barred, while those of the picotee (see Fig. 57) have a ground color bordered with a second color, and the variations in this latter are used to separate it into sub-varieties. They are more beautiful than the carnations proper, especially when grown under glass but they will succeed very well grown in the open air under similar treatment.



FIG. 57.—THE PICOTEE.

The pink is smaller, more compact, and more mottled than striped. It is hardier than the others and is very seldom injured in winter when left in the open ground, but in sheltered locations all will endure our winters. The most suitable way of planting is in beds, separate from other flowers. The soil may be improved by the addition of soot, and otherwise it should be well enriched. The plants should be set one foot apart and should receive good cultivation. As the buds develop, they may be treated with liquid manure. If the buds are very numerous, some may be pinched off, in order that those remaining may be finer. The young plants may be kept up by making layers in midsummer. Mr. Vick thus described the method.

“The layering is simply cutting a slit in a young shoot to obstruct the flow of sap, and thus aid in the formation of roots. First cut half way through the shoot, then make a slit lengthwise about an inch. Remove the earth a few inches in depth and press down the branch, so that this slip will open, and then cover with the soil. Roots will form where the cut was made, and thus new plants will form which can be removed either in the autumn or spring.”

GROWING ROSES IN CITIES.



WHEN I began to grow roses in the city I was told by a number of men, clever in gardening, that success in my undertaking was out of the question because of smoke, dust, gases, foul air, etc. I paid no attention to their warnings or advice, well knowing that if the roses received six to eight hours of sunshine each day, and care such as is given by skilled men in the country, my chances for success were as good as theirs. I have grown pretty good roses of the leading monthly varieties in the City of Brooklyn for the last seven years.

Every year, about the first week in July, I set young rose plants in fresh soil. The cuttings from which they are grown are taken from healthy plants the preceding December, and placed in the propagating bed; they root in from 21 to 28 days. When nicely rooted, I prick them off in flat boxes, setting the plants $2\frac{1}{2}$ or 3 inches apart, and grow them on until they are large enough to be placed in 4 or 5-inch pots. Great care must be taken that the roots of young rose plants are not broken when removing them from flats to pots. From the 4-inch pots my plants are shifted into larger ones before planting in those that are to hold them while blooming.

Buds must be kept pinched out until the young rose bushes are strong enough to bloom; with proper care they ought to be in good condition for this by September 30. The house in my charge has a span-roof east and west, and is heated by hot water. I use for roses elevated benches 5 inches deep, with the bottom boards left wide enough apart to allow free drainage. I put a light layer of shavings over them to keep the soil from going through these openings. The benches are from 4 to 6 feet from the glass, and I use galvanized wire to keep the roses in place.

To keep down the greenfly, fresh tobacco stems are moistened and strewn on the hot water pipes; and the evaporating pans are filled with a liquid prepared by steeping tobacco stems in water. My roses are seldom troubled with mildew, but in such cases I dust sulphur lightly over all diseased plants; this is a sure remedy for mildew. The ventilators of the house are left open night and day until the evenings get chilly in September, after which I close the ventilators on the sides and shut down the top, leaving a little opening until obliged by cold weather to close tight. Night heat through the winter should range from 50° to 55° ; day heat should be 60° in dull weather, allowing the temperature to rise 15° or 20° more with sun heat. I syringe the roses every bright day, heavily or lightly, as the occasion requires.—*American Gardening.*

ROSE CULTURE.



YOU can succeed with roses as with other shrubs, giving but little time to their care, but that care must be in the line of the needs of the plant. Three "plenties" are absolutely essential to success in growing roses—plenty of sunshine, plenty of water, and plenty of manure. They will not flourish in gravelly soil, nor in its opposite, clayey soil. Good loam is the thing. If the soil be already poor, spade in barn manure about it, then cover a place as large round as a wash tub, with the manure three or four inches deep about each rose bush; a half wheelbarrow load to a bush is none too much. This mulching is better done in the fall than spring, but it will do good now. In dry seasons, the bush must be watered freely; wash water is good. Except with yellow roses, it is the new growth that blossoms, so cut your bushes back to within a foot of the ground, that will give the new growth a better chance. Rose bushes should set where the sun can cast his rays freely upon them. Persian insect powder, used with a little blower, such as are sold at the stores, and blown over and under the leaves, will kill the white lice; white hellebore, such as is used on currant bushes, will kill the slugs (worms). Three or four applications in the season usually suffices. Your eyes and heart will be delighted with the result.—*Connecticut Farmer.*

BUDEDDED ROSES—SOME GOOD KINDS.

At a recent meeting of the Massachusetts Horticultural Society, President Spooner said that he is a strong advocate for budded roses, if they are budded in the right place and properly grown. They should be planted so as to have the stock three or four inches beneath the surface, and the bark should be raised a little on each side to enable them to emit roots more readily; you will then get a better plant in one year than in three or four years if they are on their own roots. The Manetti stock is the best for light soils; the brier sends up too many suckers. All the best roses that come to our shows are from budded stocks. He does not want to wait four or five years to get a strong plant.

Among the best summer roses are La France, and, for later, Fisher Holmes or Prince Arthur (the last named a seedling from General Jacqueminot), Heinrich Schultheis, and Lady Helen Stewart. For white, Merveille de Lyon and Mabel Morrison. Gloire de Lyonnaise throws up fine shoots. Madame Victor Verdier is a grand garden rose. Alfred Colomb is of globular form and high scented. Mme. Isaac Pereire, a Hybrid Bourbon, is a good climbing variety. Earl Dufferin has a full flower and is destined to be one of the best. Marshal P. Wilder is too much like Alfred Colomb. Mme. Montet is a free flowering variety, and of very fine color. Mme. Gabriel Luizet is very desirable for this purpose. Mrs. John Laing is almost as free flowering as General Jacqueminot.

FLOWERS AT FAIRS.

The Maine State Pomological Society issued a circular encouraging the exhibit of plants at their State fair to be held next September in Lewiston. The special object is to encourage the young to cultivate flowers; and a free ticket to the State Fair is given every child who exhibits even a single plant. This circular was issued on the 8th of June and, although a little late, the directions there given, with reference to preparing plants for exhibition, may be interesting to many of our readers. The following are the chief points:

SOIL.—Many plants need to be re-potted. The best soil for this purpose is rich garden loam, to which add one-third well rotted stable manure.

POTS.—The best pots are the unglazed kind with saucers; those painted or glazed, are not so desirable for flowering plants. Great care should be used to secure good drainage. Before filling the pot with soil, a little charcoal and some broken bones will be very acceptable to the plants. They will very soon cover the bones with a tiny network of roots.

TREATMENT.—Plants are often injured by too frequent waterings. A safe rule is to apply the water only when the surface of the soil is dry, then do it thoroughly. Sometimes they may need water every day, at other times they may do for several days. Careful attention is all that is needed. Frequent sprinkling is useful for keeping off insects from the leaves and makes the plants hardy. Have the pot clean, trim the plants often, take off all dead leaves, and you may be sure of beautiful window plants.

TREATMENT OF EASTER LILIES.—After bloom, ripen the growth thoroughly by standing the pots out-doors after the hardest frosts are past. Later on, plant the balls of earth from the pots in the garden. The same bulbs are not good for forcing a second time. After several years the young bulbs around the parent bulb will, in good sort, have developed sufficiently to answer for forcing.—*American Gardening.*

HARDY ROSES.—Hardy roses, including hybrid perpetual, June, and yellow roses, do best in deep, cool, rich soil, in beds exposed to light and air, but not to sweeping winds. The soil should be made fine and mellow to a depth of 20 inches before planting them. The rose-beds should be dressed annually with some good compost—half decayed grass sods and half well decayed fertilizers, or bone-meal with sods, is good. Autumn is the best time for applying the compost. Hybrid perpetual roses should be pruned every year, either in autumn or spring. Remove weak and dead wood, and cut back last year's shoots to 3 or 4 eyes. Tobacco stems scattered under the plants is a good remedy for thrips, and fir-tree oil is sometimes used. Mix one-fourth of a pint of oil with 2½ gallons of water, stir it well and syringe the plants with it.—*American Gardening.*

✻ The Kitchen Garden. ✻

PREPARATION FOR NEXT SEASON'S RADISHES.

RADISHES, grown for market, give more profit than any other garden crop, except, perhaps, lettuce. The culture is simple, for the crop has but few enemies. Still, to make it profitable, it must be early, tender and crisp. To secure all of these characteristics I had last year's hotbed spaded over occasionally during the summer and fall to thoroughly mix the top soil with the manure, and get it as ripe as possible. After getting sufficiently moist a good cover was put over it. On March 5 this was all thrown out and fresh manure was put at the bottom, about a foot deep, and trampled firm. This compost was then put on the manure some six inches deep. As soon as the bed was ready seed was sown in rows five inches apart. These were made by placing a plank five inches wide, with straight edges, across the bed to stand on, the short way. A line drawn with the finger was made and the seed sown. Then the plank was turned over and the operation repeated. Standing on this plank gives the bed the necessary firmness. Each line was covered with half an inch of soil as soon as sown. This bed was 6 by 12 feet and covered with ordinary tobacco bed canvas, and when the weather was especially cold boards placed on top. A bed of this size takes just two squares of canvas and all the radishes can be gathered without getting on the bed. The manure, seed and labor of this bed cost \$1.50. From it I sold 160 dozen radishes at five cents per dozen, with enough left for the family. This season I shall treat the bed the same way, except it will be fifty feet long with one-third sown to lettuce. The Dark Scarlet turnip radish is my favorite, it being tender and of good quality.—T. D. BAIRD, Muhlenberg County, Ky.

SURE DEATH TO THISTLES.—I had a piece of land that was badly infested with the Canada thistle, and after putting on all the fresh stable manure I had I plowed it the first time about June 25, a year ago, with a plow which cut off everything as wide as I turned the furrow. I rolled and harrowed it down and as soon as a few of the thistles made their appearance, which was about three or four weeks after plowing, I again plowed it with the same plow about 4 in. deep, and by several harrowings kept the surface mellow until about Aug. 20, when I plowed it deep and sowed it to fall wheat. At the time of this plowing there was not a thistle to be seen on the fallow and now after having cut the wheat, which was a very fine crop, the field is perfectly clean and not a sign of a thistle or other weed is to be seen. By thoroughly summer fallowing Canada thistles can be killed in a year.—*Farm and Home.*

HOW TO GROW ONIONS.

Onions delight in a rich sandy loam, not too light but porous and friable and free from stones. The preparation of an onion field should begin in the fall. Put on a good dressing of stable manure and plow it under, and leave it until next spring. How much stable dung to be used cannot be defined here. It depends on the nature and quality of the land. It is well enough to say let the application be liberal, yet there is a limit, where an excess of it may do no harm, neither will the crop be benefited thereby. The following spring, as soon as the ground can be worked, plow again, but shallow. Broadcast some special fertilizer (Mapes is mostly used here) about 1500 hundred pounds to the acre. Mix it well with the surface by harrowing thoroughly and finish with a smoothing harrow to make it as even as a board. If the land be stony, the stones must be raked off by hand. If it is intended to follow onion growing as a special crop, it will be well to buy a regular table seed drill, one that will sow two rows at a time. The one I have reference to sows the rows twelve inches apart. The seed cups are placed between two wheels, which are six inches from the centre of the cups, the wheels thus serving as markers. After sowing roll down the seed. As soon as the seeds are sufficiently up to show the rows go through them, either with a shuffle hoe or wheel hoe. I prefer the former. When plants are large enough to handle, thin out to one or two inches. It is not necessary for me to say to keep down weeds, which is best done by going through them with the hoe after every rain.

If sown early enough the onions should be ready to pull in the fore part of August. Should they not ripen fast enough, hasten them by breaking down with the back of a wooden rake. When you are satisfied that the onions have stopped growing, do not delay to pull them, which is best done during a dry spell. Lay them in long rows and leave in the field until perfectly dry. Give them an occasional stirring, and house as soon as dry enough.—*Farm and Home.*

ABOUT SHIPPING PEACHES.—In picking peaches always look at the blossom end; when the green shade turns white, pick it. For long shipments I use the quart berry box, never over sixteen in a crate, and it is best to wrap with a paper, and be sure they are in the crate tight, that they do not shake about. Put up so the expressman can throw them end on end, which he must do. He can't help it. For a near market I use the four-basket crate, four quarts to a basket. The baskets fit closely in, and are one tier only, with a tight cover nailed down. Never put up soft fruit of any kind in a crate that has any aroma from the wood—say pine or cypress. There are a few points we must keep in sight: Don't pick green fruit, and don't ship any specimens that are soft, and don't expect to sell the poor fruit for good prices because it is in the bottom of the box. Better keep it at home. And don't expect me, as many do, to write you or tell you to ship your peaches to the same man I am sending mine to.—JAMES MOTT, in *Florida Agriculturist.*



The Canadian Horticulturist

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NOTES AND COMMENTS.

ERRATA.—On page 135, for “gargens,” read gardens; “prunus Armeniaca,” add, variety nigra; “who lives in China,” read Chiva; “measured at China,” read Chiva. On page 165 and 211, for “Bubach,” read Buhach. On pages 193 and 194, transpose figures 46 and 47, the latter being the section of the healthy leaf, the former the one affected with the curl.

ENLARGEMENT OF OUR JOURNAL.—This subject was carefully discussed at the meeting of our Directors at Grimsby Park, last July. Very frequently the editor finds it necessary to carry over several pages of useful matter from one month to another. The journal is too small for the needs of Ontario fruit growers. Our aim is to make it first-class in every particular, and we are desirous of receiving from Canadian growers more frequent communications concerning their work. The experience of one fruit grower is always useful to others. It was decided, providing sufficient encouragement was given, to add eight pages to the present size. By this means we will be able to include in our publication a larger number of illustrations, and to publish more fully the experience of our readers in their work.

We hope also to open up some other departments. It was suggested that a department under the head of “Bee Keeping” would interest a large number of our readers, and extend its circulation and usefulness. We would be glad to know the views of our readers on this subject.

Of course, the price of the publication will still remain the same. If this enlargement takes place, it will go into effect on the first of October next. We believe that all those who have so kindly aided us in the past in our work, will give us their support and sympathy in this undertaking. We want to double the subscription list during the coming year, and this can easily be done if every member will exert himself a little in advancing the interests of our Association in his locality.

THE MEETING AT THE PARK.—The great farmers' pic-nic, which was so widely advertised through all our papers to be held at Grimsby Park on the 7th and 8th of July, was not so fully attended as was expected. The entertainment was certainly very creditable to the Directors of the Central Farmer's Institute and the Fruit Growers' Association, who combined in bringing special talent for the occasion. The Heintzman's Band, of Toronto, contributed most delightful music, and the addresses were all first class. The speakers were the Hon. John Dryden, Minister of Agriculture, Professor Mills, of the Ontario Agricultural College, Mr. J. S. Woodward, of New York State, and Prof. Dean, of the Agricultural College, Guelph.

The address by Mr. Woodward was of special interest to fruit growers. The subject was "Sheep as Assistants to the Fruit Grower." He spoke from experience, and showed that by keeping one hundred sheep in every ten acres of orchard, and feeding them about fifty quarts of meal per day, the sheep would consume every fallen apple, would keep the grass closely shaven and keep down all the sprouts around the tree, and, in a word, keep the orchard in excellent condition. Not a worm would escape from a fallen apple before the sheep would devour it. He condemned very decidedly the common method of converting the orchard into a moving lot. He considered it slovenly and lazy. The cost of supplying the mixture of bran and linseed meal for the hundred sheep, at the rate indicated, was \$2.63 a week. It would cost \$3 a week to hire pasture for the one hundred sheep, and, therefore, there would be an actual saving of 37 cents a week over hiring pasture, and the orchardist would thus reap a double profit from the industry. A fuller report of this paper will be given our readers in the next Annual Report.

The Directors of our Association were called to meet at the Park during the pic-nic, on account of the low rates of return passage at this time. A visit was made to the office of the President in order to see the work which is now in progress, of putting up the various fruits of the season in beautiful glass jars, for the Ontario fruit exhibit at the World's Fair. Our President and his assistant, Mr. James Brodie, are working with untiring zeal in order to make the display a success. The strawberries are very difficult to preserve, but kerosene seems to be the most satisfactory fluid for them. Cherries are being put up in boric acid and in salicylic acid, and in other fluids, and most of them, thus far, appear unchanged.

The Directors expressed their willingness to co-operate with Mr. Pettit in his arduous undertaking, by contributing from their various districts such fruits in their season as seem of particular merit. It is satisfactory to Mr. Pettit, the Superintendent of this exhibit, that parties all over the country have sufficient patriotism to contribute samples of fruit, in a liberal spirit, without asking any compensation. Every Canadian must feel that it is to his interest to uphold the credit of his country among the nations, and thus draw the attention of the world to Canada as a fruit-producing country.

THE FRUIT CROP.

It is very important to the fruit grower to have some idea of the general state of the crop in his country a good while in advance of the harvest. Such information will enable him to better judge of the value of his fruit and place him in a better position to dispose of it to advantage.

Last month we gave the result of our first enquiries, and these showed an unfavorable state of our prospects at that time. Fuller inquiries, just made, prove that estimate of the unfortunate state of the crop was below rather than above the mark. Were the quality proportionately superior, we might hope that the prices would rule high enough to more than counterbalance the shortage in quantity, but it is not. Scab was never so prevalent upon both apples and pears, while rot and mildew threaten to sadly diminish the plum and grape crops.

THE APPLE CROP is possibly one-third of the average in the Niagara Peninsula and all along the south shores of lakes Erie and Ontario. It will consist chiefly of Baldwins, with a sprinkling of some other varieties. A fairly good crop is reported in some localities in Central Ontario, as, for instance, the counties of Waterloo, Simcoe, Perth and Victoria, and in some favored spots near the mountain in the County of Lincoln. The finest prospects in Canada are reported from Nova Scotia. In the United States the best reports come from the State of Maine. New York State, one of the foremost apple-growing sections in the Union, is quite as unfortunate as Southern Ontario.

PEARS are reported poor quality in all parts, owing to the scab, and the crop itself is also very short. The Bartlett will be the most prominent pear, but even that variety is badly blemished in most places.

THE PEACH CROP is almost a total failure about Grimsby and Niagara, but, strange to say, in the higher elevation just about St. Catharines, there is a fair crop. These should prove a fortune to the growers in that part, as reports state that there is scarcely half a crop in the great peach orchards of Delaware, while in New York and other nearer States, the peach crop is almost as bare as it is in Ontario.

THE GRAPE CROP is a very full one, and, in spite of the mildew, will give a very large yield in Ontario. The prices should rule high, owing to the shortness of other fruits. Indeed, where the quality is at all good, all kinds of fruit should bring a high price this season, and so help to make up the growers' losses in quantity.

Below are some of the statements of our correspondents with regard to the prospects :

CARLETON Co.—*Sir*,—Apples blossomed and set heavy, afterwards dropped very considerably, and the crop will not be above medium in quantity, and will be of poor quality, with the exception of summer varieties, which are fairly free from spot. The twig blight has been destructive; even Wealthy and some of the Russian apples and pears have suffered.
—JOHN CRAIG, Experimental Farm, Ottawa, Ont.

HURON Co.—*Sir*,—Plums are scarcely half a crop. Pears good. Apples varied; Duchess and Ontario best, Baldwins fair. Upon the whole, apples will not be over half a crop, with sample not up to the average. Grapes a good crop.—A. McD. ALLAN, Goderich, Ont.

NORFOLK Co.—*Sir*,—Apples a poor crop, will be less than one-half the average. Both fruit and foliage is badly affected by fungus. J. K. McMICHAEL, Waterford, Ont.

KENT Co.—*Sir*,—Apples do not seem to be more than one-half a crop. Winter apples are producing the best. The trees are looking rather dried in foliage. Pears are a medium crop. Of pears, the Kieffer seems to be the most productive.—F. W. WILSON, Chatham, Ont.

FRONTENAC Co.—*Sir*,—After having made several inquiries, I have concluded that there will be no more than half a crop of apples here. The trees look healthier than usual, and the fruit is fairly free from fungus.—D. NICHOL, Cataragui, Ont.

HALTON Co.—*Sir*,—Pears are a fair crop here. Flemish Beauty is well loaded, but, unfortunately, the trees are badly blighted. Apples very light, Duchess fair. The only late apple with a good crop is the Ribston Pippin. Every other kind is very thin. I find that the Ribston bears every year, and always brings a far better price than any other apple, yet I do not believe that one per cent. of the orchards are planted with this variety.—GEO. BUNBURY, Oakville, Ont.

YORK Co.—*Sir*,—The fruit in this district is light. Apples, pears and plums not more than one-quarter of a crop. A man in the central part of York county writes that the American Golden Russet, Cooper's Market and Baldwin are the best in his neighborhood, and that the crop will not average more than one-third.—W. E. WELLINGTON, Toronto, Ont.

SIMCOE Co.—*Sir*,—The apple crop here will be above the average, although some varieties are scabby. Plums fair, not up to the average. Pears, good crop, but Flemish Beauty badly spotted. The prospect is for the best crop of grapes we have had for some years.—G. C. CASTON, Craighurst, Ont.

VICTORIA Co.—*Sir*,—The apple and pear crop will be good. There will be a full average in this locality. Pears are spotted, but apples are clean.—THOS. BEAL, Lindsay, Ont.

WATERLOO Co.—*Sir*,—The apple crop in this vicinity is a good deal better than last season and of superior quality; the fruit is comparatively free from scab. Pears a failure, and, what is worse, the trees are badly blighted.—SIMON ROY, Berlin, Ont.

PERTH Co.—*Sir*,—I have just returned from a trip north. In North Perth, North Wellington, and on northward as far as Walkerton, the apple crop promises heavy. Throughout this county and part of Middlesex, it will be a fair average. Pears are a fair crop here and northward. Plums poor.—T. H. RACE, Mitchell, Ont.

PERTH Co.—*Sir*,—From extended inquiries, I conclude that there will be a fair average crop of apples and pears. Farther north, I am led to understand that the fruit crops are decidedly more favorable. Plums dropped badly and consequently are a short crop.—J. D. STEWART, Russeldale, Ont.

LINCOLN Co.—*Sir*,—The cherry crop has been most disappointing, but currants have been a good crop; raspberries are very fine, indeed in this locality quite free from insect pests; gooseberries have also been first-class. The English varieties are so often said to be always liable to mildew. I had the privilege, only a few days ago, of visiting the fine garden of James Wilds, of Hamilton, and there received a large addition to the Ontario fruit exhibit, for the Chicago Exposition, in a very fine collection of gooseberries, many of them English varieties, and I failed to find one specimen affected with the mildew. With regard to the prospects for our crops, from my observations after visiting various parts of the county, arranging our collection of choice fruits for the Chicago Exposition, I would say that in pears, Bartlett's will form about one-half of the crop, the quality being very ordinary, owing to the imperfections of form. Other varieties will be light. Peach crop exceedingly scant. Now and then an orchard shows a fairly good crop, but these are the exception. Plums variable, in some instances a fair show, but in others a failure. Grapes promise abundantly, the bunches are setting well and the vines are vigorous and strong. The mildew has made its appearance, but a free use of sulphur will no doubt check it. The apple crop, which is the staple fruit crop of our country, both for home market and the export trade, is a short one this season. Some fear that fruit growing in some lines, as for example the apple, will be overdone, but I do not think that the time for that has yet arrived. There will always be room for first-class fruit, *properly inspected and graded* as to quality.—A. H. PETTIT, Grimsby, Ont.

❖ Question Drawer. ❖

BOOK ON GARDENING.

No. 477.

SIR,—Could you tell me where I could obtain a book on the cultivation of flowers. It must, as nearly as possible, comply with the following conditions, viz.: Give the botanical and ordinary name of each plant. Why so called. Its origin. State whether it is a house plant or an outdoor plant. Soil in which the best results will be given. Watering. Flowering and resting periods. How propagated. Sunshine or shade, etc.

D. J. MCCARTHY, *Norwood, Ont.*

The only book we know of which fully answers the needs of our correspondent, is the "Illustrated Dictionary of Gardening," which gives information about all the flowering and foliage plants for the open garden, ferns, palms, orchids, cacti, and other succulents; green-house and stove-plants, bulbs, trees, shrubs, fruits, herbs, vegetables, etc. No pains nor expense have been spared in preparing this work which is an authority on horticulture. It is published complete in four volumes, cloth, gilt edges, with colored plates, for \$20.00.

Mr. E. E. Rexford, a well-known American florist, has published a smaller treatise on floriculture, which is exceedingly valuable as a practical guide. The title is "Home Floriculture," and the price is \$1.50 post paid. Any of these books may be ordered through this office.

GRAPE VINE BARK LOUSE.

No. 478.

SIR,—I enclose a cutting from my grape vines to which my attention was drawn on account of the large number of ants frequenting it and also by the yellow color of the leaves. A large part of the vine is covered with black excrescences, and I would like to know what they are, also the cause, the remedy, and the result if not attended to. If you can do this in the next number of the CANADIAN HORTICULTURIST, others besides myself would be glad.

GEO. HALLEN, *Oakville, Ont.*

The excrescences referred to by our correspondent have very little appearance of life, and yet they are really the shell of an old mother louse, protecting a large number of its eggs. Fig. 58 represents them very clearly; the whitish, cottony substance which protrudes from them protects the eggs, from which, early in July, there issues numerous young, yellowish-white lice. These distribute themselves over the branches of the grape vines, and soon attach themselves to it, and remain in one spot for the rest of their lives, sucking the juices. They are not usually found in any great abundance. They should be scraped off with a knife and destroyed. Scrubbing the young wood with a cloth or brush charged with kerosene emulsion, would perhaps be a still better remedy.



FIG. 58.

BOOK ON WINE MAKING.

No. 479.

SIR,—I would like to have a book as a practical guide in manufacturing wine, with recipes. Could you supply me with one, and at what price?

O. GAGNON, *Montreal, Que.*

One of the best works on this subject is "Grape Growing and Wine Making," by Prof. Geo. Husmann, who is a recognized authority in the United States on this subject. The price of the book is \$1.50.

SUMMER PRUNING OF THE GRAPE.

No. 480.

SIR,—My grape vines are growing so profusely that I do not know when, or how much, to prune them. A few lines from you would very much oblige me. Please instruct me.

W.M. McMURRAY, *The Rectory, Niagara, Ont.*

Summer pruning of the grape receives less attention in Canada than it deserves. The reason is found in this, that the fruit growers all have too much work on their hands, in the summer time, to attend to this important operation. As we prosper more and understand our business better, we shall, no doubt, do better work. If we knew fully what is meant by summer pruning, and appreciated its benefits more fully, we would, no doubt, find ways, even in the busy season, of getting the work done. Most growers think it means thinning out of the wood and foliage, at any time during the summer; but this is wide of the mark. Perhaps a better term for the operation would be "summer pinching," which more properly describes it. Summer pruning, if indulged in too freely and too late in the season, will seriously weaken the tree or vine, while pinching is simply directing the young wood where it is most wanted. Severe pruning of the young vineyards in July and August would be more injurious than beneficial. The mischief brought about by neglect, early in the season, is accomplished, the growth has taken place just where it is least wanted; and now it is better to leave the vineyard untouched, excepting, of course, such tying as is necessary, until after fruiting season, allowing the vines to have the full benefit of the young leaves, which they have spent so much energy in producing.

Pinching off the young wood growth, just as it extends two or three joints beyond the last bunch of grapes, is very important. The energy of the vine is thereby directed to strengthen the fruit stalk and to increase the size of the fruit. If the buds at the axis of the leaves are thereby started into growth, they also should be pinched several times in the season, if necessary. In this way the sap is concentrated about that part where we most want it, namely, in the vicinity of the fruit.

Many people say they see no use at all in summer pruning, and, indeed, this appears to be the general opinion in the commercial vineyards in Southern

Ontario. If practised in July or August, no wonder that this notion should prevail. Vineyards have been almost ruined for the season's crop by such injudicious treatment.

We would advise our correspondent to wait now until the fruit is off, then he may give his vineyard a thorough pruning and next June begin early to keep them in proper bounds, by pinching.

"Practice what you preach," many will say to the editor. "Your own vineyard was not pinched back last June." Pardon, dear critic! While you ask, consider whether you did all you ought, last June. Were you not much of the time confined to the house or barn, by constant rains, anxiously waiting a dry day, in which to do many of the things you should have done.

STOCK FOR BUDDED ROSES.

No. 481.

SIR,—My hobby is hybrid and tea roses for out-door planting. Anything upon roses will especially interest me. I would be glad to have your opinion as to the best kind of budding stock for our climate, whether Dog rose, Briar or Manetti; and your reasons therefor.

Geo. O. GOODHUE, Danville, Que.

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

Replying to your enquiry as to rose stocks: The Manetti is the most desirable stock upon which to bud all hardy varieties of the rose. The Dog rose is but little used for that purpose now, the Manetti having almost entirely displaced it. The Briar is desirable as a stock only for standard or half standard roses, but neither of those forms are suited to our Canadian climate. Roses budded on the Manetti stock are worked as low as possible, and when planted where they are to bloom are set with the bud three or four inches below the surface, thus rendering protection in winter an easy matter. We doubt, however, if budded roses will ever become as popular in America as they are in Great Britain and the Continent.

APPLES AND PEARS STUNG BY CURCULIO.

No. 482.

SIR,—I do not find from my reading that the curculio attacks apples. I send you some samples that have very plainly been stung by it. A neighboring orchard could furnish many more affected samples.

G. M. AYLESWORTH, Collingwood, Ont.

We have long recognized the injury done apples and pears by the curculio, which is responsible for so many knotty and ill-shapen specimens. On page 219 of our journal for 1889, is a reference to the knotty specimens of Bartlett pears,

caused by work of curculio ; and the writer's experience in spraying with Paris green, and its good results in preventing such injury.

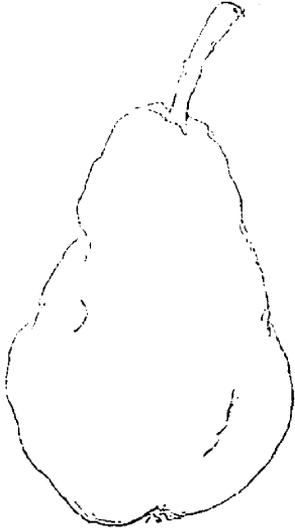


FIG. 59.

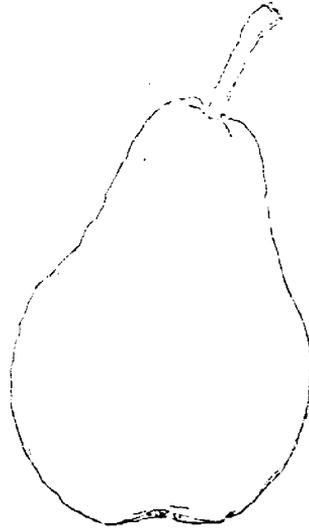


FIG. 60.

The accompanying illustrations (figs. 59 and 60) clearly show the benefits of spraying the Bartlett pear. We notice some varieties of apples are quite subject to curculio stings—for example, the Duchess—when not treated with Paris green.

BUDDING ROSES.

No. 483.

SIR,—Will you give me the art of budding roses, also the names of some of the best varieties of hardy roses. I find spraying (with force) from the garden hose the best way of ridding the rose bushes of lice. I spray mine once or twice a week, and it gives great satisfaction.

Geo. W. ROACH, *Hamilton, Ont.*

In answer to this question, we give the following extract from "Parsons on the Rose," an excellent treatise regarding the cultivation of the rose :

In budding, there are two requisites—a well-established and thriftily-growing plant, and a well-matured eye or bud. The operation can be performed at any season when these requisites can be obtained. In the open ground, the wood from which the buds are cut is generally not mature until after the first summer bloom.

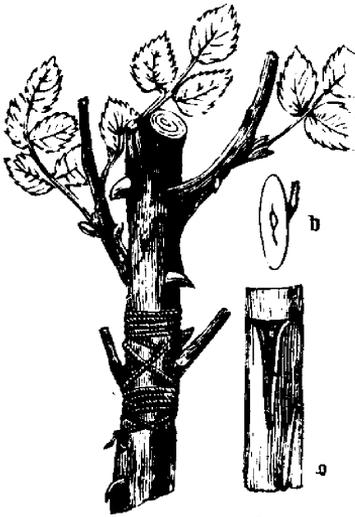


FIG. 61.

Having ascertained, by running a knife under the bark, that the stock will peel easily, and having some perfectly ripe young shoots with buds upon them, the operation can be performed with a sharp knife that is round and very thin at the point. Make, in the bark of the stock, a longitudinal incision of three-quarters of an inch, and another short one across the top, as in *a*, Fig. 61; run the knife under the bark and loosen it from the wood, then cut from off the young shoots of the desired variety, a bud, as in *b*, placing the knife a quarter to three-eighths of an inch above the eye or bud, and cutting out about the same distance below it, cutting sufficiently near the bud to take with it a very thin scale of the wood. English gardeners

will always peel off this thin scale, but in our hot climate it should always be left on, as it assists to keep the bud moist, and does not at all prevent the access of the sap from the stock to the bud. The bud being thus prepared, take it, by the portion of leaf-stalk attached, between the thumb and finger in the left hand, and, with the knife in the right, open the incision in the bark sufficiently to allow the bud to be slipped in as far as it will go, when the bark will close over and retain it. Then take a mat-string, or a piece of yarn, and firmly bind it around the bud, leaving only the petiole and bud exposed, as in *c*, Fig. 61. The string should be allowed to remain for about two weeks, or until the bud is united to the stock. If allowed to remain longer, it will sometimes cut into the bark of the rapidly growing stock, but is productive of no other injury. It is the practice with many cultivators to cut off the top of the stock above the bud immediately after inoculation. A limited acquaintance with vegetable physiology would convince the cultivator of the injurious results of this practice, and that the total excision of the branches of the stock while in full vegetation must be destructive to a large portion of the roots, and highly detrimental to the prosperity of the plant. A much better mode is to bend down the top, and tie its extremity to the lower part of the stock. Several days after this is done, the bud can be inserted just below the sharpest bend of the arch.

PRUNING RASPBERRIES AND CURRANTS.

No. 484.

SIR,—Would some one give, through your Journal, the best plan of pruning and trellising grapes and raspberries?

W. C. ADAMS, *Toronto.*

Elsewhere in this number we have treated of summer pruning of the grape. The same caution needs to be observed in raspberries and blackberries as in grapes, viz., that it is unwise to remove very much foliage in the summer season, as this is a serious check upon the growth. All such work should be done by pinching, and thus simply stopping the young growth at the proper place. We give an extract from *American Gardening* on trellising these fruits, which seems to us to be interesting.

TRELLISES FOR GRAPES AND RASPBERRIES.

Notwithstanding the warning given me six or seven years ago—that grapes could not be grown successfully on the shores of Cayuga Lake—I made the experiment, and am satisfied that there is no better grape-land in the state than can be found on the west shore in Seneca county. So far, my vineyard has escaped the late frosts in spring and early frosts in fall, and the grapes are of the very best quality.

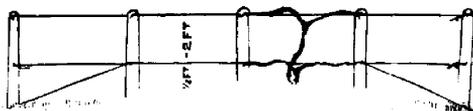


FIG. 62.—GRAPE-TRELLIS.

Our soil is a sand and gravel loam with shale subsoil. The plants are set 9 x 9 feet, trained on the Kniffin system, and trimmed on the renewal plan. The first wire is $3\frac{1}{2}$ feet from the ground, and the second 2 feet above the first. The lower arms are started first; then I start a cane as near 18 inches from the ground as I can get it and carry this to the second wire. By this plan I get a much more even distribution of fruit than by the old method. This is my method of putting on the lower wire: First the wire is made fast to bottom of end posts, and staples are driven in all the other posts except the second from the end. Here we use a wire-spike, driving it at an angle of 45 degrees. When the wire has been tightened, we lift it over the head of spike. This brings the strain, or pull, on the bottom of the end posts, and does away with braces. When you wish to slacken the wires in the fall, lift them from the spikes and you have them as slack as you want them. This leaves a space without wire between the first and second posts at both ends. You can use short pieces to fill in these spaces—No. 9 wire should be used. I send herewith a rough sketch (fig. 62) of the wire when in position, holding a vine as I trim and train it. I find four or five buds to an arm are enough.

I have visited a great many vineyards in this and other states, and have tried several ways of trimming and training, but have adopted this one as the

best for many reasons : It is the cheapest ; the grapes are up from the ground ; never have muddy fruit ; have a free circulation of air under vines, and less mildew than by any other system ; the fruit is more easily clipped from the vines ; and I can grow more pounds per acre.

I also send you sketch of post and cross-piece (fig. 63) I use for holding up red raspberries. I cut my posts 5 feet long, sharpen them and drive them 16 feet apart in the row. I nail a piece of lath 13 inches long just 3 feet from the ground and saw a notch, as shown, at each end of the cross-piece. When the wires are made fast and moderately tight, then I lift them into the notches. This trellis is simple, cheap, and will hold the canes without tying.—*American Gardening.*

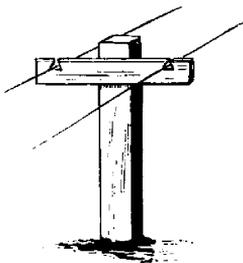


FIG. 63.—RASPBERRY-TRELLIS.

A DEPARTMENT OF BEE KEEPING.

No. 485.

SIR,—Would it not be wise to open a department of bee keeping in the CANADIAN HORTICULTURIST? The two occupations are quite in line with each other, as the bees are friends of the fruit grower, helping to fertilize the fruit by carrying about the pollen.

AGRICOLA, *Grimby.*

Replies from Bee Keepers.

There would be nothing inconsistent in adding a bee keeping department to the journal. Bee keeping and horticulture are allied industries. I believe it is a common practice among the floral and horticultural journals in the Old Country to set apart a portion of their papers for the discussion of subjects pertaining to apiculture. Whether you could maintain such a department in the HORTICULTURIST is a question. I apprehend the necessary "copy" would be uncertain in supply, as good articles are eagerly sought after by the journal devoted exclusively to bee keeping.

R. MCKNIGHT, *Owen Sound.*

SIR,—On my return home your letter was handed me. It would be wise to call the attention of fruit growers to the great benefits they would derive from keeping a few bees. Where bees are kept largely much better crops of fruit are secured, as fertilization is absolutely necessary in order to secure good yields. There are many localities where bees are kept exclusively for fertilization. Of course they may take honey from them as well ; but some of our best fruit growers have found that bee keeping, in connection therewith, has enabled them to reap a double benefit. We do not think that it would injure any bee periodical, but, on the other hand, that it would be a benefit to the *Canadian Bee Journal* to have a department in the HORTICULTURIST, and in the same way we may say that we have frequently thought that it would be wise to occasionally have a little horticulture in the *Canadian Bee Journal*, and we have no doubt it would be beneficial to your most valuable journal.

D. A. JONES.

PRUNING HEDGES.

No. 486.

SIR,—Will you give, in next number, some advice as to pruning cedar and spruce hedges ; time of year, etc. ?

ROBT. MCINTOSH, *Newcastle, Ont.*

Since evergreen trees are always in foliage, there is less reason for choosing a special season, than for deciduous trees. A good time is in summer, just as the current season's growth begins to turn hard, because it will check the growth without injuring the plants.

* Open Letters. *

CANNA SEEDS NOT GERMINATING.

SIR,—Seedsmen say that they are continually tormented about Canna seeds not germinating. Now, if they will take a pair of flat-pointed pincers to hold them with, and cut a hole through their hard shell, they will find in ten days they will be all started. This is nothing new, but from complaints heard it will be none the worse of being repeated. I have tried many suggestions for this, but I must say this is the only one I have found sure.

N. ROBERTSON, *Government Grounds, Ottawa.*

THE JESSIE STRAWBERRY.

SIR,—I thought I should let you know how the Jessie strawberry has succeeded with me. I have now a good-sized bed from the two plants I got from you; they are a great success. There is a heavy crop of very large berries, several measuring five inches around, and all the berries are much larger than any grown in this neighborhood.

Yours truly,

THOS. R. HUGHES, *Cote des Neiges, Montreal.*

THE RASPBERRY CANE BORER.

DEAR SIR,—I was on the point of writing you about what I now conclude, since reading your July number (p. 214), on the "Raspberry Cane Borer," that it is the same insect that has troubled my plants this spring. I made an examination of some old canes that I had thrown away on the garden heap, and also of the tops of new ones which were withering, and found how he worked.

I would ask you to tell me in the next number how to manage with a Weeping Mountain Ash as to the destruction of the insect which feeds on its leaves; also, as to what is the best soil for raspberries, and if they are better in a partial shade or where they will have the whole day's sun. Mine are planted on a rich loamy soil, partly shaded, but I wish to take my currants up from a made gravelly soil and transplant them to where the raspberries now are. Would the exchange be beneficial to both?

I remain, etc.,

M. O. HART, *Covansville, Que.*

NOTE BY EDITOR.—Currants usually do better on a clay loam than on light sand, if well cultivated. Partial shade does not appear to injure them. Raspberries appear to delight in sandy loam, or, indeed, in a light sand, providing it is a little moist.

Question Budget

Our readers will please make free use of this corner. We invite all to send in replies to questions asked, or to ask questions for others to answer. It will be a suggestive column, showing what the public want most to know about.

- (1) How should grape vines be pruned?
- (2) Please explain best method of pruning the ornamental trees and shrubs.
- (3) How should currants and gooseberries be pruned?