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JULY, 1900

\$1.00  
A YEAR

# THE CANADIAN HORTICULTURIST.

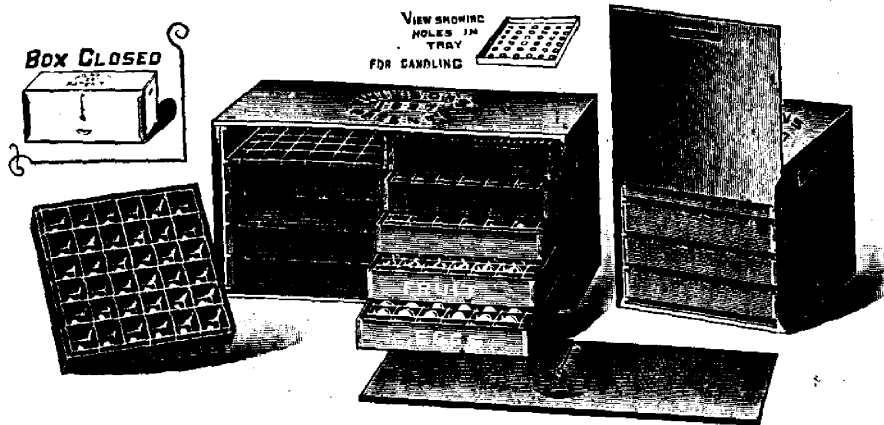


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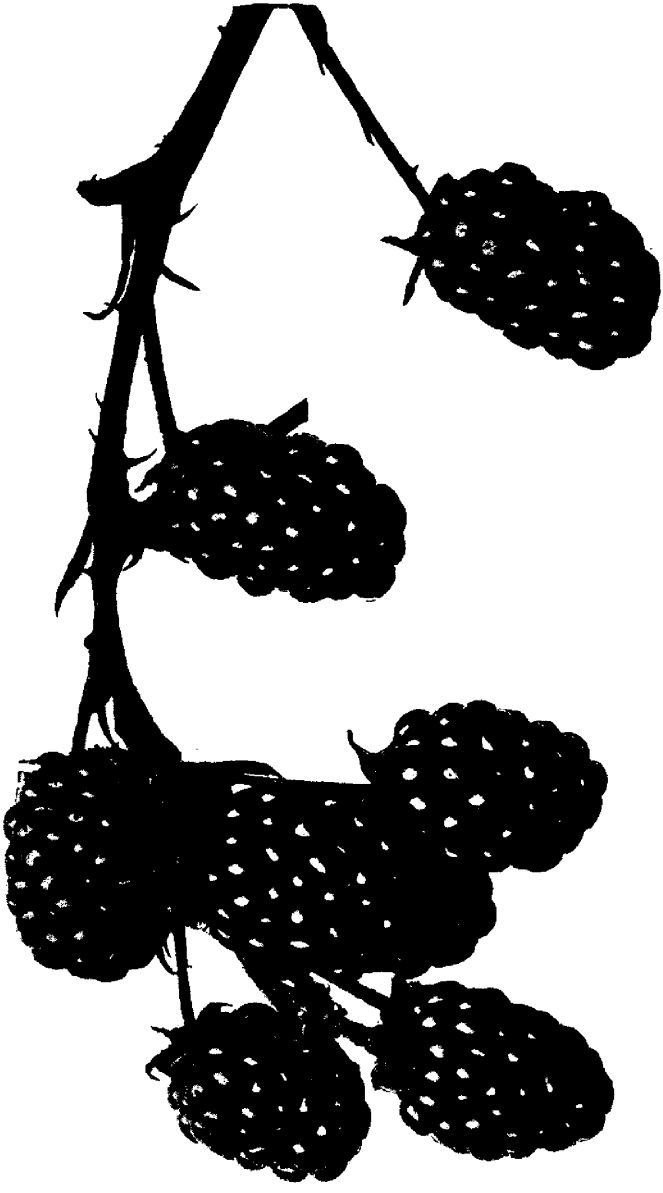
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FIG. 1836. THE KITTATINNY BLACKBERRY.

# THE CANADIAN HORTICULTURIST



\*\* JULY \*\*

## THE KITTATINNY BLACKBERRY.

**S**OON after its first introduction the writer had a plantation of Kittatinny blackberries at Grimsby, Ontario. The old Lawton had been the commercial variety there for many years, the first plantation of that variety having been made away back in the sixties by Mr. Chas. Woolverton, but it quickly gave place to this new introduction. How little we knew about blackberry cultivation in those days, when, instead of pruning the top into reasonable form, we tried a trellis to keep up the branches, and nevertheless the projecting limbs caused sore punishment to man and horse when working among them. The Lawton was a pretty good market berry, but though it turned black enough to sell on the market, its hard core never seemed to be ripe enough for eating.

It was indeed an agreeable change to grow the Kittatinny with its large shiny black berries, ripe through and through, and most excellent, either for eating fresh, or with cream and sugar at table, or in pies. It was early in the eighties when we first began shipping this variety into Toronto, where it was handled for us by Mrs. Bilton who kept a high-class fruit and game store

and who sometimes sold it as high as 23 cents a quart. Those were the palmy days of fruit growing, when grapes brought 8 to 10 cents a pound, and currants about the same, and yet no one of us seemed to think it worth while to extend our plantations. Now the blackberry brings only from 6 to 10 cents a quart, and we are planting by the acre.

• When the peach fails the blackberry is in great demand, for it is of the same season, and the thrifty fruit grower will try to be prepared for such an emergency. It is useless, however, to plant Kittatinny plants too freely outside the peach belt, for it is not very hardy. Better success will be had with the Synder, which is very hardy, enduring even the climate of Algoma, and producing wonderful crops in the Muskoka district, although it is neither so large, nor so beautiful as the Kittatinny.

The orange rust is a serious disease affecting the latter while, strange to say, we have never yet seen it upon other varieties of blackberries, no doubt because their foliage is more vigorous and more resistant to attack. This rust (*coëoma nitens*) is exceedingly difficult to destroy because it

lives through the winter on the underground stems, and while the spores may be killed with Bordeaux the vegetative portion is out of its reach. The accompanying engraving shows a section of an affected leaf, *a a* the epidermis of the lower side ruptured by it and exposing to view at *b* a mass of golden colored spores, each of which is capable of

Technically we would describe the Kittatinny for Ontario as follows :

ORIGIN—Kittatinny Mountains, N. J. ; found growing wild by a Mr. Woolverton in 1874 ; but not much disseminated until many years later.

PLANT—Very vigorous, but tender outside of the peach belt ; productive ; pro-

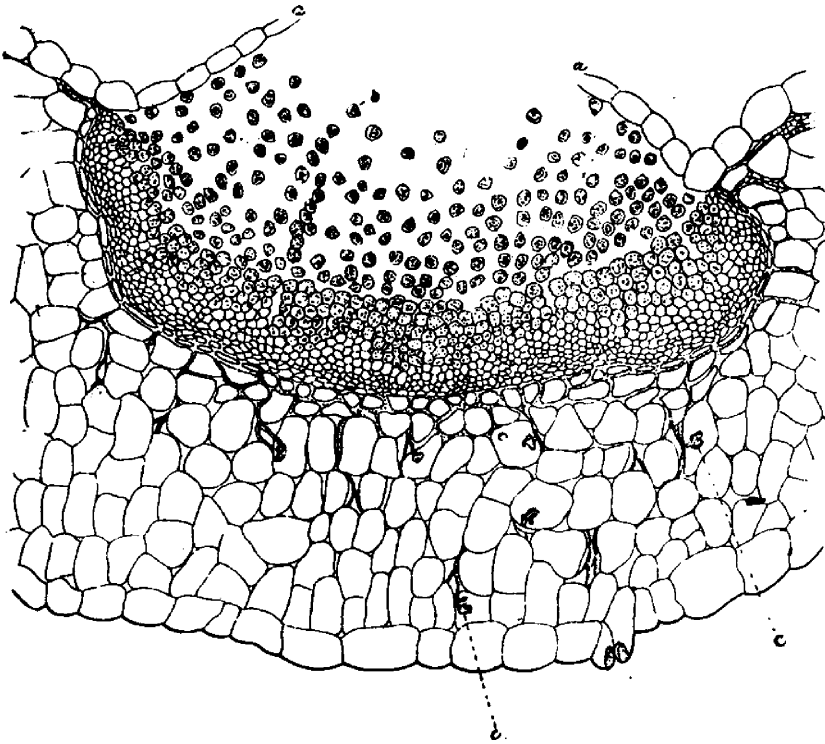


FIG. 1837. ORANGE RUST.

conveying the disease to other plants ; *c c* represents haustoria by means of which the fungus draws nourishment from the cells.

In setting blackberries the rows should be not less than eight feet apart, and the plants three feet apart in the row, though if plants are plentiful, they may be set one foot apart in the row. Every spring the last year's fruit canes should be cut back a little to permit cultivating and fruit gathering, while the new growth will grow above and shade the fruit.

pagated by suckers, and by root cuttings ; very susceptible to the Orange Rust.

BERRY—Large, averaging about  $1\frac{1}{2}$  inches in length ; oblong, slightly conical ; shiny black when ripe, becoming gradually duller after gathering ; flesh, moderately firm, sweet, rich and excellent.

SEASON—July 25th to August 25th.

QUALITY—Good for dessert ; good for cooking.

VALUE—First-class for home market.



FIG. 1838. IRIS BED AT CENTRAL EXPERIMENTAL FARM, OTTAWA.

## CENTRAL EXPERIMENTAL FARM NOTES—IX.

**T**HE weather during the latter part of May was cool and showery up to the 19th, when it became warmer, the temperature being 18°F., 82°F. and 83°F., on the 26th, 27th and 31st. Rain was beginning to be needed by June 1st, but on the 2nd about 1½ inches fell, which did much good. As the weather has continued warm since then, growth has been rapid. The warmest day so far this month was on the 6th, when the temperature was 84°F. No frosts have occurred during the past month.

The blossoming season of apples, plums, pears and cherries was very favorable this year, the weather being bright and warm, as a result of which these fruits, as a rule, set well. There were exceptions, however. Cherries only set fairly well, and there will not be a heavy crop of any of the varieties fruiting here. The severe frosts which occurred here on the 10th and 11th May probably did more injury to the apple and cherry blossoms than was at first supposed. Among the apples, several varieties growing in

sandy soil, but apparently quite healthy, did not set much fruit, although the trees bloomed freely. As records are kept of the approximate amount of blossom on each tree and records of the yields from these trees, also, we hope soon to learn the various causes of their unfruitfulness. It may be from lack of certain plant food; from some disease, not apparent; from frost, or from self-sterility, but, there being plenty of opportunity for cross-fertilization where so many varieties are growing in close proximity, the last cause suggested is not likely the true one. The trees of the Wealthy and Duchess are particularly well loaded with fruit this year. The McIntosh Red apple, which is one of the most satisfactory trees to grow in this part of the country, is an annual bearer at the Experimental Farm. It never fruits heavily, but each year there is a medium to good crop of fine apples, which are all the better on account of the tree not over-bearing. The hardiest apples have set fruit best in most cases.

The pears are making good growth this

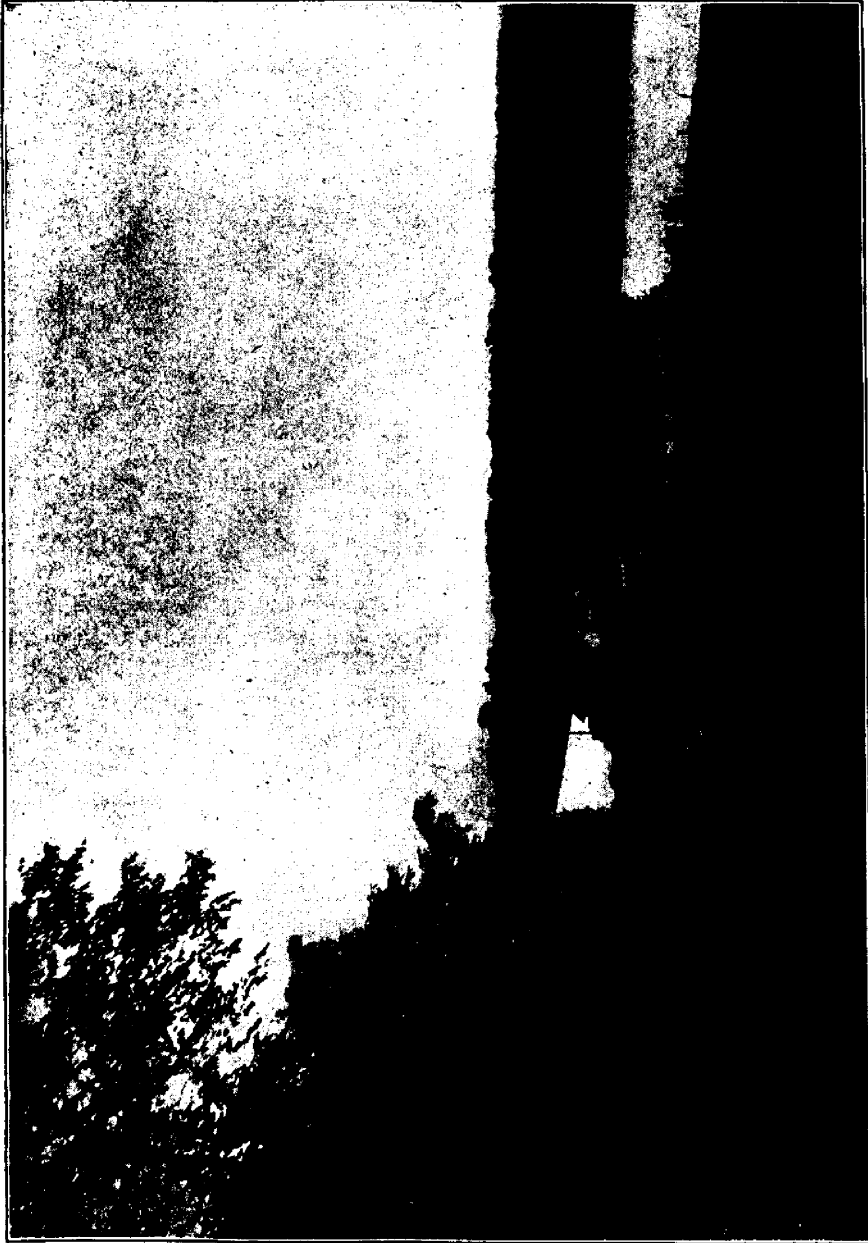


FIG. 1839. VIEW IN ARBORETUM, CENTRAL EXPERIMENTAL FARM, OVERLOOKING RIDEAU CANAL.



year, and quite a number of varieties are fruiting, though most of them are of Russian origin and inferior in quality. A tree of the Flemish Beauty, however, which has been in the orchard for ten years, is bearing this year. It bore, also, two years ago. The pear orchard has been almost free of blight for several seasons.

Plums set well, on the whole, and a good crop of the American varieties is expected. A few European sorts are also bearing this year.

A plentiful crop of strawberries is also anticipated, the rains which we have had recently being especially favorable to that fruit. The Warfield is apparently one of the hardiest varieties of strawberries grown, and, taking everything into consideration, few varieties excel it for a shipping berry. It, however, becomes rather small if more than one crop is taken from a plantation, and being a pistillate variety requires to be fertilized by some other sort. The Glen Mary, which has succeeded well in many parts of Canada, promises to produce a good crop of berries this year. The Wm. Belt, which is an excellent strawberry in many respects, does not appear to be quite hardy enough in all locations here. Both last winter and the winter before, it suffered considerably at the Experimental Farm; its irregular shape also is against it. On the comparatively light soil here, Clyde did not make many runners last year, and the crop from it will not be as large as if it were on heavier soil.

Under the system of treating the orchard at the Central Experimental Farm, the cover crop of common red clover is now ready for cutting the first time. The crop is very heavy, the clover being from 22 to 24 inches in height and just showing flower buds. As mentioned in a previous number of the Horticulturist, the apple, pear and plum orchards have not been cultivated during the past two seasons, nor this year. Most of the soil in the orchards is a light moist sandy loam,

surface of which is easily moved by the wind. Cultivation in these orchards gives the wind an opportunity of blowing the soil, the result being that the roots of the trees are liable to be bared, or nearly so, and the trees are thus more likely to suffer both in winter and summer. Since an almost continuous cover crop has been maintained, the trees are becoming more vigorous. The following plan is adopted: Two-year-old clover is ploughed under in the spring, the land harrowed and clover re-sown without a nurse crop at the rate of 12 lbs. to the acre, after which the land is rolled. During the summer it is cut a couple of times with a field mower to prevent weeds from going to seed, and a cover crop of clover from 10 to 12 inches high is left in the autumn to hold the snow and protect the roots of the trees. The following summer, this same clover is cut from four to five times with a field mower and the crop left to rot on the ground. By cutting the clover each time before it blooms, the vigor is maintained and the fourth crop is usually still a heavy one. In 1898 when the amount of green clover cut was approximated, it was found that more than 25 tons per acre were left to rot on the ground in one season. In 1899 the crops were as good, or better than than in 1898, and this year the first crop is better than either in 1898 or 1899. As red clover is a biennial, a large proportion of the plants kill out the second winter, and on this account, partially, it is ploughed under the following spring and re-sown as previously stated. While this system is not recommended to orchardists who may have conditions which would render it unsatisfactory; for instance, where droughts are of common occurrence, or where the soil is dry, it is giving good results under the conditions at the Central Experimental Farm, and will be continued until bad effects are noticed; fertilizers to balance the food supplied by the clover being applied from time to time as deemed necessary.

The German Irises make a fine show during the month of June. A very large collection has been brought together at the Experimental Farm, and they are the delight of all who see them. There are such a large number of varieties of exquisite shades and markings that it is difficult to choose a limited number which would be suitable for a small garden. Among the best, however, are Mad. Chereau, Darius, Gisele, Mrs. H. Darwin, Coquette, Ossian, Walneri, Lord Seymour, Sappho, Prinz Frederic, Marginata, Jacquesiana.

In July and August the annuals are so plentiful that perennials often take second second place, but if one has a good collection of Pæonies, Japanese Irises, Lilies and the Hybrid Perennial Phlox, he can have a

good show of flowers. There are other good perennials, however, which bloom in July, among which being the Cashmerian Larkspur, (*Delphinium Cashmirianum*), Showy Fleabane (*Erigeron speciosus*), Infant's-breath (*Gypsophila paniculata*), Autumn flowering Sneezewort, (*Helenium autumnale*), large flowered Chinese Bellflower (*Platycodon grandiflorum*), Caucasian scabious (*Scabiosa Caucasica*), Meadow Sweet (*Spiræa Ulmaria*), Queen of the Prairie (*Spiræa Venusta*), Broad-leaved sea lavender (*Statice latifolia*), Aster, *Amellus bessarabicus*, and the fine Rudbeckia, Golden Glow, which begins to bloom about the last of the month.

W. T. MACOUN,  
Horticulturist.

Central Experimental Farm.

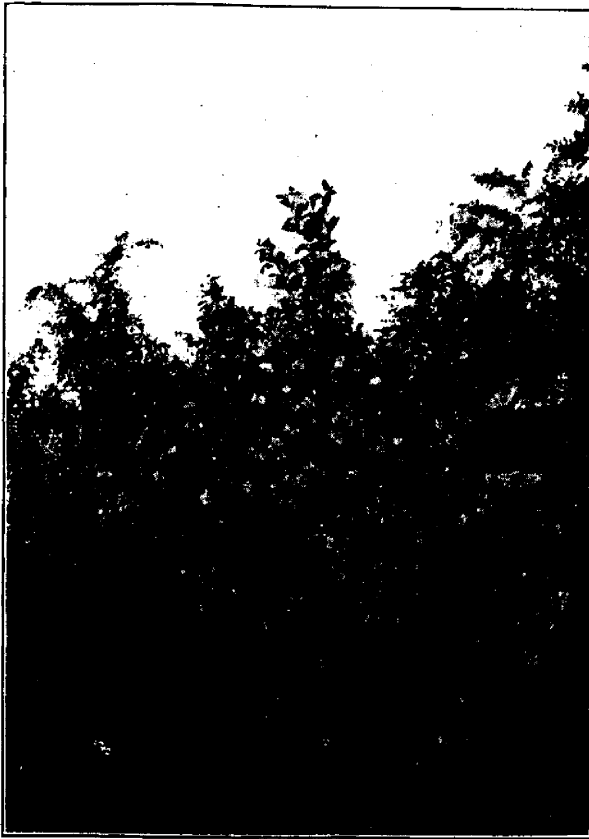


FIG. 1840. LARGE FLOWERED SYRINGA AT C. E. F., OTTAWA.

## SHADY NOOKS FOR SUMMER DAYS.

**N**OTHING which adds to one's comfort during the warm weather is welcome, and as the life in our climate during the summer months is largely an outdoor one, any bit of shade which Nature or art may provide to temper the rays of the sun is welcomed. The ideas illustrated on this page may all be carried out at slight expense.

The illustrations for crows' nests suggest places where one may retire with a favorite volume. If the climb into these retreats is too venturesome for the older members of the household, they will afford much enjoyment for the younger ones. Of course the proper trees are necessary, and as no two are alike the

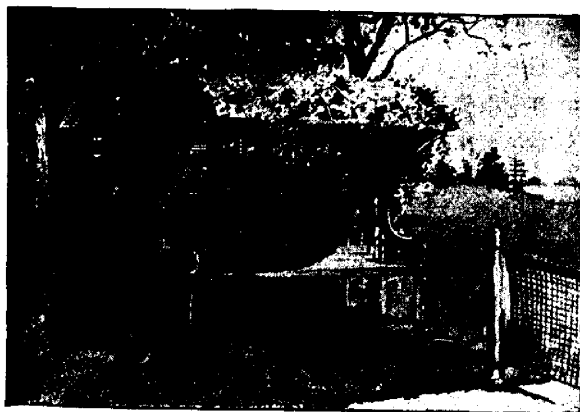


FIG. 1842. A SHADY SEAT AT THE TENNIS COURT.

carpenter will have to adapt his construction to the enforced requirements of size and growth.

In the arrangement for the shady seat at the tennis court, rough cedar posts are planted firmly about eight feet apart, three feet below and seven feet above ground, and a framework is built across at the top, and a double seat with back constructed between. The framework at the top should come forward four and a half feet from the end parts on each side, making the top nine feet over all. A series of hoops is carried along one foot apart, giving a curved top. The brackets for this top and the arms and legs of the seat may be made from rough limbs with the bark left on. The same material is used for braces. If gnarled limbs can be obtained for these all the better, but the framework is of secondary importance as it will be covered with vines by the middle of the summer.

A more simple mode of construction would be to make the top flat. For this use straight pieces instead of hoops. The effect will be less picturesque, but when covered with vines it will make but little difference. If possible face the seats north and south, as more shade will be obtained from the ends when the sun is low in the afternoon.

Often shade is needed at some special point on the lawn, and the illustration given of a summer-house with a double-domed roof and two circular seats offers suggestions for that purpose.



FIG. 1841. A LOFTY CROW'S NEST.

In the arrangement for this summer house six corner posts are planted. Of course, the size of these bowers must vary according to individual needs, but they must not rise too high above ground. They will be useless for shade if carried up more than eight feet.

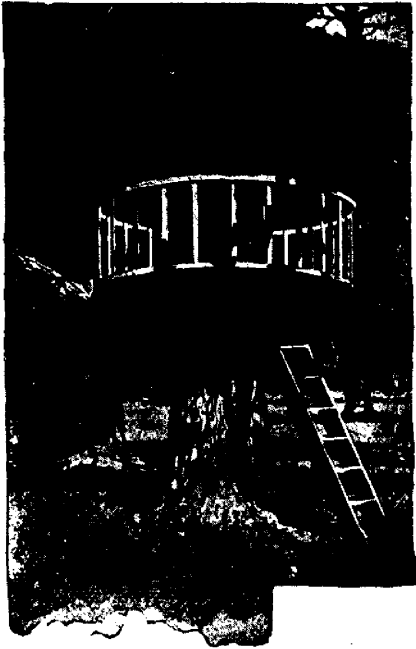


FIG. 1843. A SHADY RETREAT.

Centre posts rise to a height of eleven feet, and long hoops are carried diagonally from corner to corner. These are firmly nailed to the centre posts, on which they cross. Straight pieces are carried around horizontally from post to post; these are supported by brackets. The hoops may also be connected by light stuff. A seat is constructed around each centre post, and a light railing runs around these sides. At the base the entrance is generally left free of adornment of any sort.

Many vines which flower lovers would like to use are worthless for



FIG. 1844. A SHADED DOORWAY.

the purpose of shade. The sweet pea would be a general favorite if it grew to a sufficient height, but it does not. The morning-glory and the wild cucumber are both desirable. The former will grow to a height of twenty feet in a season. The wild cucumber also has

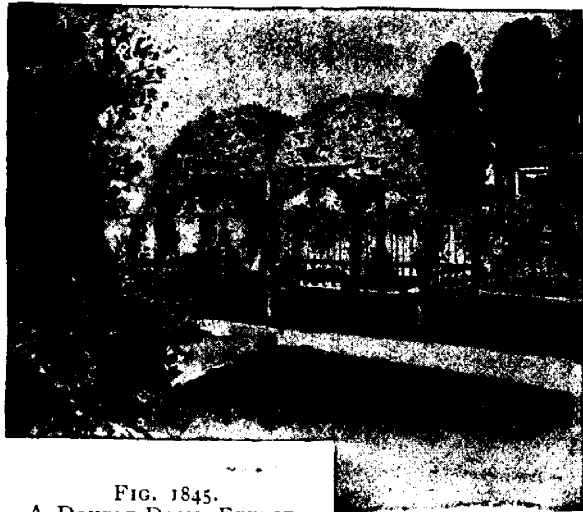


FIG. 1845.  
A DOUBLE-DOME EFFECT.

a rapid growth, and its flowers when seen in masses are very effective; it is to summer plants what the native clematis is to our perennial vines. Some of the ornamental gourds are available for covering summer houses, their large leaves overlap and afford a dense shade, which is, of course, indispensable in a summer-house. The variegated Japan hop will answer for the purpose of shade; it has a rapid growth and an attractive foliage.

An illustration which needs little description is the one in which an old sketching umbrella frame is utilized for the canopy at the top of the centre post, or constructed of a large wooden hoop supported on a wire properly bent. A pot is set on or in the post on each side, and a ladder-like framework of light sticks connects them with the canopy. If desired, wooden boxes may be built in place of the pots. In fact, it would doubtless be a wiser plan to use boxes as they may be nailed securely to the posts. The centre post must be carried up to a height of seven feet so that it may be passed beneath without chance of brushing the hat of one's tallest guest. Paint in harmony with the house. Nothing will be so pretty

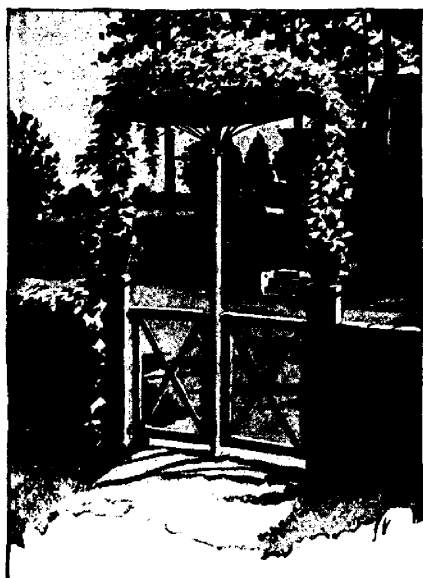


FIG. 1846. A SHADED TURNSTILE.



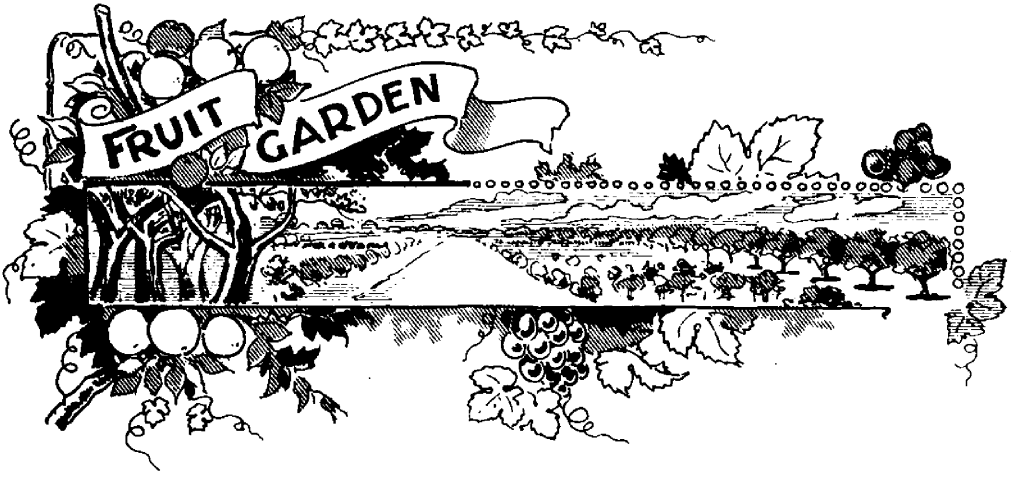
FIG. 1847.  
A  
CANOPY  
FRAME.

or so attractive to plant about this gate as nasturtiums.

Very often the entrance to a house lacks a canopy or porch, in which case the arrangement shown in illustrations show two light canopy frames, which, when covered with vines, will afford a grateful shade. A feature of one is the shelf for potted plants. Brilliant geraniums are especially effective for the purpose, their glowing blossoms fairly burning against the dark green of the grape vine's broad foliage. When constructing the simpler one bring the brackets down toward the base of the doorposts. The doorway may be flanked with cacti or other plants of a decorative character.

For planting a door having a canopy I would advise *Celastrus scandens* or *Ampelopsis*. The native grape may also be used. All three of the above are attractive and nearly always prove satisfactory.

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## FRUIT CULTURE.—VI.

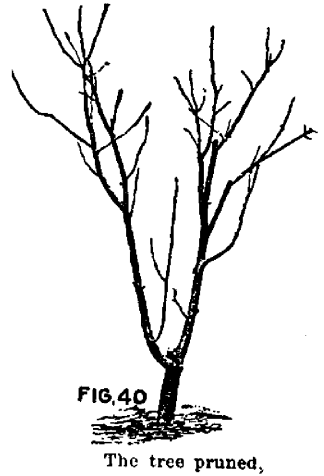
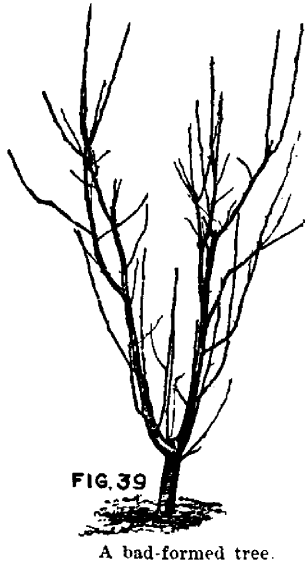
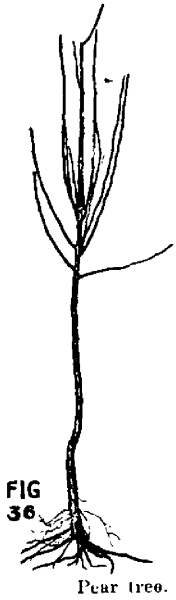
### THE PEAR.

**T**HIS excellent fruit, so generally and deservedly esteemed, should always secure a prominent place in the orchard of the commercial grower and in the amateur's garden. By a judicious selection of varieties fruit can be enjoyed from August to January. It was one of the few fruits successfully marketed in England in 1898, and a profitable trade in that direction might be built up if the right varieties are grown and the packing carefully done.

**SOIL.**—The soil conditions favorable for the apple are equally favorable for the pear. On a wet soil it will soon become diseased and sickly. As long as the subsoil is fairly porous and dry the tree will thrive and produce fruit of excellent quality on moderately heavy clay. In short, if the drainage is good and the ground tolerably rich the pear can be successfully cultivated in almost any soil from sand to clay, though a strong clay loam may be regarded as the best type of soil.

**SELECTION OF TREES, PLANTING AND PRUNING.**—There are two types of pear trees com-

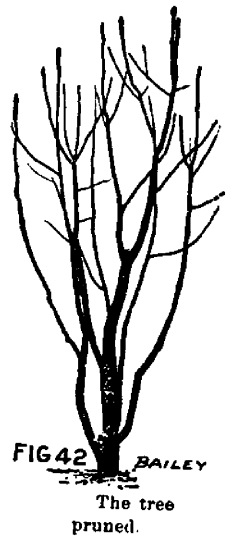
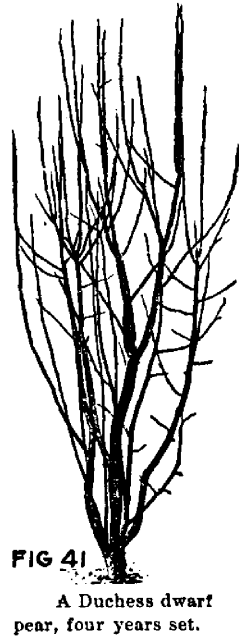
monly grown—standards and dwarfs. With the standard sorts the variety is grafted or budded on pear stock, and trees of this kind will last a life-time. To render the tree of a dwarf habit the quince stock is used. This allows of a much closer planting, twelve or fourteen feet apart, while the standards should not be nearer than twenty. The quince stock creates an early bearing habit, but the tree is comparatively short-lived. Some varieties succeed better on quince stock, even the flavor improving. The most notable are *Duchess d'Angouleme*, *Beurre Diel*, *Easter Beurre* and *Louise Bonne de Jersey*. Two-year old trees are decidedly preferable to three for planting; the root of the pear is not very fibrous at any time, and, as trees are usually dug in the nursery (see Figs. 8, 9, 10), the older the trees the less of the fibrous roots left. Planting has been fully described already. Figs. 36, 37 illustrates the manner of pruning back the newly set standard tree. As the limbs of the pear have a more upright habit of growth than those of the apple, the head may be started somewhat lower, and the shading of the

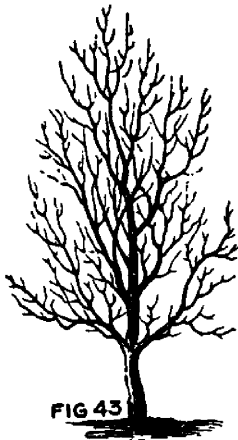
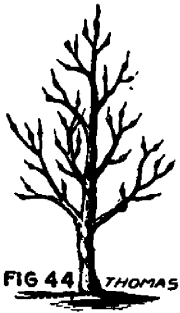


trunk will lessen the danger of sun scald. The subsequent pruning of the pear consists in thinning out the head, removing any lower sprouts and shortening any very rampant growths. In pruning back these strong twigs cut close to an outside bud, the tendency being then to grow a more spreading top. Dwarfs are grown on the pyramid system or the "inverted cone" plan, usually the latter. The head should be started lower and pruning be constant and systematic. Fig. 38 represents a tree cut back in the second year, a well branched head and no bad crotches. Fig. 39 exemplifies a poor type of dwarf pear, where sufficient care has not been given to the formation of the head. A better type is seen in Figs. 41, 42, and the requisite pruning clearly indicated.

The manuring and tillage of the pear orchard should be similar to that of the ap-

ple orchard. Cultivation should be kept up late with young trees or a rank growth is induced, especially on rich soils, in which the wood may fail to ripen, and winter killing and blight will probably result. Old trees of the "choke-pear" variety may be





profitably grafted with better kinds. Figs. 43, 44 show the process. The old top, as in the case of grafting large apple trees, must be gradually reduced and not all taken off in one year. A tree over sixty years old of this kind on the writer's farm, had about seventy grafts of Bartlett and Beurre Bosc put in some years ago. A fair proportion of the grafts took, and many baskets of fine fruit of these varieties have since been gathered.

VARIETIES.—In the choice of varieties consideration must be given to the structure of the blossom. Some varieties are almost self-sterile, and should be intermingled with varieties having an abundance of pollen. Among those more or less self-sterile are *Anjou*, *Bartlett*, *Clapp*, *Clairgeau*, *Lawrence*, *Louise Bonne*, *Sheldon* and *Winter Nelis*. Self-fertile varieties include *Duchess d'Angouleme*, *Beurre Bosc*, *Beurre Diel*, *Flemish Beauty*, *Keiffer*, *Seckel* and *Tyson*. In the coldest districts of Ontario pear culture can hardly be successful. One or two Russian varieties might be tried, and the Central Farm Horticultural Department, Ottawa, will give full information on this point. If it is desired to plant a few of the better kinds, the following are suggested for trial: *Flemish Beauty*, *Anjou*, *Keiffer*, *Clairgeau* and *Clapp*.

For sections where the sweet cherry succeeds, and the finer kinds of *Domestica* plums, the following list is suggested in order of season: *Clapp*, *Tyson*, *Bartlett*, *Flemish Beauty*, *Duchess d'Angouleme*, *Boussock*, *Beurre Bosc*, *Beurre Diel*, *Beurre d'Anjou*, *Beurre Clairgeau*, *Keiffer* and *Lawrence*. For home use, *Rostiezer*, *Sheldon* and *Seckel* must be added—three varieties of the highest quality. In a commercial orchard it is doubtfully wise to have many varieties. In southern Ontario a good short list would be *Bartlett*, *Bosc*, *Anjou*, *Clairgeau*, *Keiffer* and *Lawrence*.

In the culture of pears for the home use, it should be added that, to secure the highest flavor, the fruit should be picked when the stock parts easily from the stem on lifting the pear, and ripened indoors. The winter pears should be kept in a cool dry place until about ten days from the ripening time, at which time all pears should be placed in a room with the temperature of from 65 to 70 degrees.

DISEASES.—Blight—This bacterial disease is the most serious drawback to pear culture. The life-history of this malady has been thoroughly explored and described. The disease usually effects an entrance into the tree through the blossom or the ends of the young twigs, penetrating to the lower part of the branch, and often communicating itself to many of the larger limbs. If all affected wood is not properly cut out and burned, enough of the bacteria will survive the winter to spread the trouble broadcast next year. It has been often suggested that putting the orchard into sod will minimise the danger. The evidence is, however, very contradictory on this point, and there are manifest disadvantages attending the practice. The more sod the less fruit, as a rule, and the fruit on the cultivated ground is invariably larger. The better way is to avoid heavy manuring of non-bearing trees, and late cultivation, and choose varieties which





FIG 44  
SCAB ON FLEMISH BEAUTY  
(FROM CORNELL BULLETIN)

are more or less resistant. *Clapp's Favorite*, *Souvenir de Congress* and *Bartlett*, especially the first, are highly subject to blight, while *Keiffer*, *Seckel* and *Tyson* have rarely suffered. This is a question which the intending pear-grower would do well to study closely.

Pear-scab.—(See Fig. 44). Though distinct from the apple-scab fungus, it must be fought in the same way and by the same means.

INSECTS.—The curculio, codling moth and pear-slug are the commonest insect enemies given on p. 176 of the 1897-98 Inst. Report.

### THE PLUM.

Nothing need be said as to the claims of of this fruit on the amateur or commercial grower. The productiveness and hardiness of the tree, and the many good qualities of the fruit, speak for themselves. From the three types now cultivated, the *Domestica* or *European*, the *Japanese* and the *native American* class, can be selected varieties

that will be successful in all parts of Ontario. It will survive conditions fatal to many other fruits, but will abundantly repay careful attention and high culture. Like the pear, it may be profitably grown on all kinds of soil, but will succeed best and give the highest quality of fruit on heavy ground. Strong clay soils, properly drained, will be found perfectly suitable.

PLANTING AND PRUNING.—The planting and pruning of the first three years are much the same as with the apple. Fig. 45 indicates the manner of pruning the young trees. This, however, is a two year old tree, and with all the vigorous varieties it is far better to plant one year old trees.

Such stock is cheaper, the root will be more fibrous than in Fig. 42, the losses in planting will be less, and in a few years' time it will catch up or surpass the older tree. Fig. 46 is a picture of a block of young Burbank trees planted on a rather hard clay soil in the spring of 1897. The trees were strong one year olds, were cut back to a whip about three feet high. Not a tree was lost, and the whole block is exceptionally thrifty. The head of the young tree should be kept fairly open, and the vigorous growths may be shortened in one half. Some growers practice the shortening-in method year after year. This may be done to advantage with vigorous and erect growers like *Pond's Seedling* and *Bradshaw*, but as soon as the tree bears, these long growths will be checked naturally,



FIG 45 BAILEY  
Young  
plum stock  
well trimmed.



and after the head is once formed it is questionable if any pruning is advisable beyond the thinning out of crowding shoots, and the removal of broken or injured branches.

MANURING AND CULTIVATION should be the same as with other fruits trees. When the trees are bearing a full crop, a good dressing of cow manure and an application of wood ashes will give good returns, as the

maturing of so large a number of seeds is necessarily an exhaustive process of both tree and soil.

VARIETIES—In the coldest sections of Ontario it would be advisable to attempt the growing of many plums of the European and Japanese types. A few trees might be tried. *Glass Seedlings*, a large blue plum of only medium quality; the *English Damson*, *Yel-*

*low Egg, Lombard and Reine Claude* will be found amongst the hardiest, notably the two first. Among the native plums, *Wolf, De Soto, Hawk-eye* and *Rollingstone* may be recommended. These are very hardy, comparatively free from disease, and though small, are excellent for canning purposes. In the milder sections the following list of the European class are suggested for commercial purposes, in order of ripening; *Bradshaw*, large blue; *Imperial Gage*, greenish-yellow; *Washington*, large greenish-yellow; *Smith's Orleans*, blue; *Lombard*; *Yellow Egg*; *German or Italian Prune*, blue; *Reine Claude*, green; *Coe's Golden Drop* and *English Damson*.

For the planter's own use, *Hulings Superb* and *McLaughlin* may be added, both plums of the gage kind, and of the highest quality. Other excellent sorts are *Prince of Wales*, *Duane's Purple* and *Goliath*. *Lombard*, the most commonly grown plum, is probably over-planted. It is a vigorous grower, productive and fairly hardy. On the other hand, it comes in at a bad time—mid-season—is very subject to rot and black-knot, and is of poor quality. It needs good care and thinning to do really well. The Japanese types are proving as hardy as many of the European class, but many of them are of inferior quality. *Abundance* (see Fig. 46a), *Red June* and *Burbank*, are the ones recommended here. The *Abundance* is an upright grower with slender branches, a good and early bearer but rather subject, as is *Burbank*, to rot. Fig. 47 shows the characteristic growth. This variety should be shortened in to outside buds to encourage a spreading habit. *Burbank*, Fig. 48, runs to the opposite extreme, throwing out strong, wide-spreading limbs, and must be pruned accordingly.



DISEASES.—*Monilia*, or rot, is by far the worst thing to contend with in plum culture. It has been referred to under the peach. Thinning will tend to lessen it, as will systematic spraying with Bordeaux mixture. When the plums are ripening, all specimens showing rot should be gathered separately and destroyed. None should be left on the tree, as the shrivelled plums that pass the winter on the tree will undoubtedly carry the spores of the fungus to the next year's crop.

Black-knot is also a fungus, maturing its spores twice a year, in May or June, and again in February or March. Constant cutting out and burning of all knots will control this disease in any orchard, but it becomes a difficult matter to subdue the disease unless the whole neighborhood cooperates in the task with something like thoroughness.

*Curculio* and plant lice are the insects

most troublesome to the plum. Both are dealt with in the publications referred to previously. It may be added that the four ounces of Paris green to the barrel will by no means kill all the curculio, and in a season when this insect is plentiful an undesirable number of plums will still be de-

stroyed. Five and even six ounces can be used to forty gallons as long as plenty of lime is used to neutralize the caustic effect of the arsenic.

M. BURRELL.

St. Catharines, Ont.

## THE PEAR—PIRUS COMMUNIS.

**T**HE pear tree has been under cultivation for a period unknown. It is found wild in the British Isles, and is a native of most parts of temperate Europe, it is also found in the Himalayan region.

The pear is well worthy of the title, the "Queen of Fruits," in the Province of Ontario, where it is grown as near perfection as can be done in any country.

The pear attains to a greater height than the apple, and is more upright in growth; it also lives to a great age. There are instances known where the pear lived to over four hundred years.

Every person knows what uses the pear fruit is put to. It is first used for decorating the table, then for dessert, stewing, baking, drying and for manufacturing into perry.

The pear has its insect enemies and diseases like the rest of our fruits, the worst disease being the blight. Having had considerable experience in growing fruit, and being a keen observer of their habits, I had the good fortune to overcome this disease called fire blight, and it may be that some growers would like to know my methods of checking the disease.

I learned my first lesson from the Seckel pear tree. I noticed that this variety seldom blighted, nor are the other varieties resembling the Seckel in its short-jointed wood so subject to blight as are the soft willow long-jointed growth of many other varieties.



FIG. 1838.

I noticed that the Seckel pear tree ripens its wood before the dry hot weather sets in, or in other words it ripens its wood as it is made.

My observations led me to imitate the Seckel growth by enforcing the same on all other varieties, which can only be done by pruning on the severe spur system—such as the cut herewith represents—a system, I think, not too well known in this country. This system is one of the good ones that must be imported.

To prune the pear in this way from the baby tree up tends to prolong the useful life of the same; it makes the shy bearing varieties more fruitful; it increases the size of the fruit; it gives it higher color, as well

above operation, but the older the trees get the less will become the wood growth which will be replaced by fruit buds, and that more numerous year by year as the pruning on this system goes on.

A very important factor to make the cultivation of the pear tree a success is the soil. The pear tree succeeds in any good deep loamy soil, provided the subsoil is well drained to three and a half or four feet deep so as to be free from stagnant water.

The pear will generally thrive where the apple will grow well. The pear will thrive

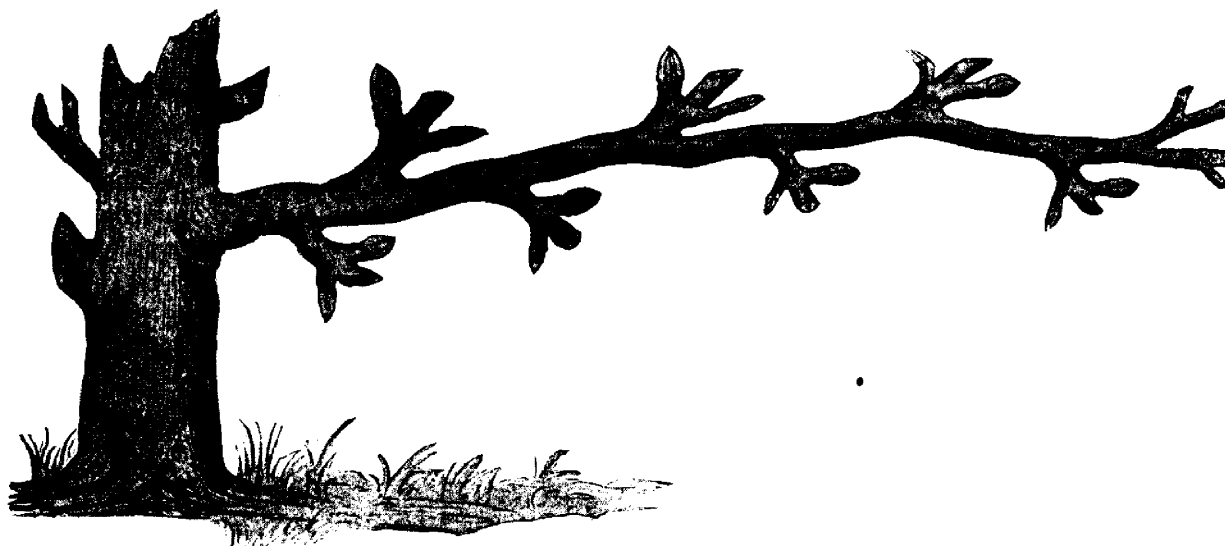


FIG. 1839. PEAR BRANCH SPUR PRUNED.

as much better flavor; it distributes and equalizes the sap throughout all the branches alike, which causes a more healthy vigor, when in turn the cultivator may expect uniform fruit of the largest size and best quality. This system is the greatest preventative of the blight known at the present time.

When pruning on the spur system is completed, which should be in the month of March, and that each year to be successful from the time the tree is planted.

The first few years of the trees' growth may appear to be rather rampant from the

well on a deep clay loam, but seldom succeeds on a stiff clay.

To complete the work necessary to the successful cultivation of the pear each tree should have a mulch of coal ashes as far as the spread of the branches in order to keep the roots cool and moist, to keep the clay soil from baking and shedding the rain or artificial water from the roots. This mulch is doubly beneficial to the dwarf pear on account of its being worked upon the quince roots which feed and spread near the surface. The quince does not like a dry hot soil to grow in, when the heat of the

sun and the drouth at the roots stop the sap from flowing into the half matured young twigs. In such conditions they have to stand still during the hottest part of the summer, and by the time the cool nights and the fall rains come, the pith in the centre of the young twigs is dried up and dead, the disease continuing downwards until the tree is dead. It will be seen then that any cool and porous material on the surface of the soil will be of great benefit as a preventive. It will also be seen that the pruning on the above system, stimulating an equal and earlier growth, will have the tendency to make the growth ripen earlier or mature earlier and evener on the young twigs. I am also a great believer in wood ashes and bone meal as a fertilizer.


I also strongly believe in using lots of lime in the soil for all tree fruits. I think there is more virtue in lime to our fruits than is known to the majority of fruit growers; it certainly warms and sweetens the soil and there are few insects that like lime.

Slacked lime is as good as sulphur to prevent mildew on the grape vine; it helps to prevent the rot in the plum fruit; it will partly check the curl leaf in the peach tree; it will kill the slug that eats the coating of the cherry tree leaves; it will check the ravages of the caterpillars on the gooseberries and currants; the black fly does not like it on cabbage, or turnips, or radishes, and it will help check the scab on apples and pears. Whitewash the trunks and branches of all trees with a wash of lime, soft soap and clay to thicken as a paint; scrape first the trunks and branches of all their rough bark; if the trees are stunted and hide-bound run a strong jack-knife lengthwise through the outer bark along the trunk and branches, but never cut across the trunk or branches, then apply the whitewash, and, I think you will be agreeably surprised at the results derived from the operation.

R. CAMERON.

Read before the Niagara Falls South Horticultural Society 9th April, 1900.

## WORMY APPLES.

 HERE is nothing new about wormy apples except the way to avoid having them. There are several species of grubs or worms which work in apples, but the one which does nearly all the damage is the core worm. The core worm is the offspring of the codling moth, and this is the insect which a man wants to fight in his apple trees.

The best general remedy for the core worm, or codling moth, according to information furnished by the Vermont experimental station, is Paris green. Some apple growers use London purple; others use white arsenic; but they amount to the same thing. They all poison the core worms. Other insecticides like hellebore, kerosene or sulphur, are not effective in this case.

In the hands of the average man Paris

green is the best medicine for the codling moth. The poison should be thoroughly mixed with water at the rate of a quarter of a pound to the barrel—that is about one pound of paris green to 160-200 gallons of water. About a pound of lime ought to be added to each barrel of water, which will prevent scalding of the foliage. It should be applied with a spray pump and fine nozzle. In case Bordeaux mixture is used on the trees the Paris green may be added directly to that solution at the rate already recommended.

The first spraying for the codling moth should be made as soon as the blossoms fall, or within a week afterward. It is very important to do this before the little apples begin to hang down their heads, as after that time they do not catch and hold the poison.—*Vermont Experimental Station.*

## CULTIVATION OF AN ORCHARD.

**I**N The Farming World of June 12th, W. J. P. says that simple mechanical cultivation of the soil may be detrimental, whereas the seeding down of an orchard is most economic and scientific. In a previous sentence he says that fruit specialists do not give reasons for their views in favor of tillage. Does it not occur to W. J. P. that he has omitted giving reasons for his views? He gives an example of a large fruit grower in eastern Ontario who always keeps his orchard in grass, and has good results, but an example is not a proof, for conditions are so various. The writer has an apple orchard on moist, deep sandy loam, that has not been plowed for fifty years, and yet produces excellent crops; and our friend, Mr. E. C. Beman, of Newcastle, has a pear orchard of similar soil, which he never plows, but allows the grass year by year to remain and decay. But these examples are not for every one to follow, for on a dry or heavy soil, with blue grass sod, for example, an apple or a pear orchard would soon become stunted in growth and barren of fruit.

It is in years of drouth, to which we are often subject in Ontario, that the greatest injury is done to our apple orchards by lack of tillage. The wood and fruit buds do not fully develop, and the crop for the succeeding season will be of small size, and scant in quantity. This is of course an assertion only, but it can easily be proven, both by example and by theory. Now of what use is tillage any way? We grant W. J. P. that it cannot put fertility into the soil, but we do

assert that it makes available to the tree roots the fertility which would otherwise remain locked up. So important do we consider this that we always hesitate to apply manure to any part of the orchard that is not under cultivation, thus exposing the particles of the soil to the action of the oxygen: the air has a chemical action which the study of agricultural chemistry shows will (1) set free plant food, (2) promotes nitrification, (3) decompose vegetable matter.

Tillage also exerts a great mechanical benefit, increasing soil depth, and breaking it up into fine particles, easier penetrated by the rootlets of the trees; but the most important benefit is the conservation of moisture. When untilled the moisture is constantly being brought to the surface by what is known as capillary attraction, while cultivation fines the soil and breaks up this action, thus preventing the rapid escape of moisture.

These are a few of the reasons why tillage of orchards is so strongly advocated by specialists in fruit culture, but they might easily be amplified. The writer started out thirty years ago with the same view as that expressed by W. J. P., even planting a heavy clay field to an apple orchard with the fond hope of thus avoiding the hard work of plowing that field; but that fond hope was doomed to sad disappointment, and every succeeding year converts him more and more to a sense of chargin that he should ever expect any good results without labor.



## RELATION OF CULTIVATION TO THE GROWTH AND DEVELOPMENT OF APPLE TREES.

**W**HITTEN, of Missouri, has been making some useful experiments on the effect of tillage on the growth and vigor of apple trees. These conditions have long been considered by us at Maplehurst and by many of our best growers, who once thought that an orchard needed no tillage. Almost all have now become convinced of the necessity of giving their orchards the very best cultivation if an abundance of fine fruit is to be harvested.

The following are some of Whitten's points as given in Bulletin 49, University of Missouri, Columbia :

The greatest growth has been made by those orchards that have been cultivated most. Cultivated trees are uniformly healthier, more vigorous, and produce larger fruit than those not cultivated.

Cultivated trees make more uniform growth than do those not cultivated. The more cultivation the less they are effected

by drouth. The principal height growth of trees is made early in the season, when moisture supply is ample, so that a drouth later in the season does not affect the height growth of the current season ; its effect is, however, noticeable in the imperfect development of the fruit, and failure to properly mature and ripen the wood and buds for another season. The evil effects, therefore, will be more noticeable in the year succeeding a drouth than in the same year, when in the case of uncultivated orchards a generally devitalized condition may be looked for.

It is commonly thought that cultivation should always cease about August 1st, and no doubt for a wet season this would be wise in order to check the wood growth and allow it to be ripened in good time before winter ; but in a dry summer and autumn the orchard soil should be kept in good tilth until the crop matures, or at least until rains come.

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### FRUITS, OLD AND NEW.

SIR,—I would like to express through the columns of the Canadian Horticulturist, my admiration of the very valuable information and the many pointers contained in that column relating to Horticulture and Arboriculture, especially during the last few years. Having spent nearly 60 years in this country, and being familiarly acquainted with nearly all the counties from Kingston to Goderich north and south, for the last 25 years, I am fully persuaded that we, as Canadians, are not as far advanced in the art of Horticulture as we might be nor as we ought to be. If you take a drive, as I had the opportunity of doing last week, to the county east of us,

viz., Durham, and also west of us, viz., York, and through our own county, you would be not only surprised but disgusted at the number of nests of tent caterpillars to be seen on the route, and I assume that it is largely due to the neglect of spraying the orchards with the proper mixtures at the proper time, and I am sure it is not for the want of timely warning. As our Ontario Government has given practical lessons and advice which, if carried out, would rid the province in a few years of one of the worst enemies the orchardist has to contend with. I am pleased to be able to note the rapid advance made in the last few years in the way

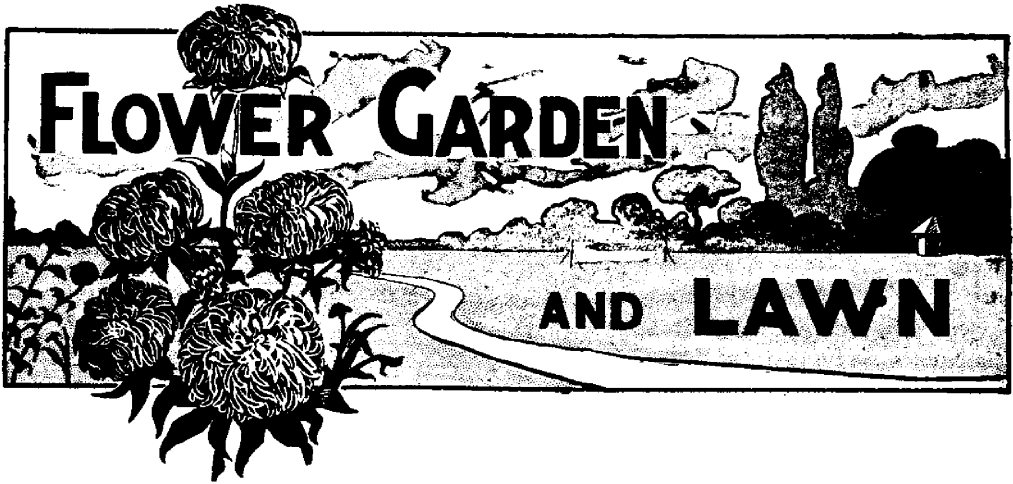


of opening up new markets for our surplus fruits and the prices obtained for the same when properly put on the foreign markets, and just as soon as our people find out that it is more money in their pockets to grow one pound of choice Canadian fruit than to grow and handle two pounds of mixed or inferior stuff, more spraying, thinning, sorting and packing will be attended to, and certainly no shipper will attempt to forward to the European markets inferior fruit and expect the importers to make it O. K. unless the goods are as represented, and then we may look for a rise in the price when the purchaser knows before hand what he is getting. As a fruit grower, I think our system of selling not the right system. I believe our fruit ought to be handled more profitably if handled the same as grain or wool or other farm commodities, that is, for every one or two men in a municipality for instance, to receive all fruits subject to inspection, that grows in their district, forward it and sell it and pay the patrons what the goods are sold for. Our present system here is usually to sell to exporters and take what they give, which sometimes amounts to very little, but I anticipate considerable difficulty next season in getting the inspectors to pass the fruit unless more care is taken by shippers in having their fruit more properly graded and packed than formerly. Our fruit in this district appears at present to be the largest on record, beating the crop of '96. The apple, pear and cherry orchards has been from about the 20th ult. to the present time, one magnificent display of bloom, and the air was laden with the perfumes of the flowers. I notice, too, that the fruit on the apple, pear and cherry trees are very abundant, and unless thinning is resorted to a large proportion of the fruit will be below the standard sizes. In plums there was no bloom consequently we will have no fruit. In small fruits the crop will likely be above the average, in other words, a full crop. There are not many strawberries grown here for

export, but what are growing are looking very fine. Grapes have made a vigorous growth and are setting their fruit well. Currants will be a good average and raspberries a full crop. Nearly all our planting of 1896 and '97 are or have been in bloom and I expect to add largely to our exhibits of new varieties, especially in pears. Quite a number planted in '97 have fruit on them, some are not 3 ft. high. Take all in all the fruit prospects in this district are very favorable, and bid fair to eclipse any former year. The timely rain last night was of immense benefit to the growing crops of this county ; it was much needed. Tent caterpillars are very plentiful where spraying has not been attended to, but the careless will reap the result. Regarding newer varieties that I have tested and find very satisfactory, are the Salome, Shackleford, Gideon and Stark; they are all good growers, early bearers, good keepers and good color. The Stark is the fastest grower of any apple in the orchard, the Gideon coming a good second. The Salome is the longest keeper that I have ; the Shackleford is a beautiful apple, but rather small if allowed to over bear. I have a large number more new varieties that had a few apples last year, a detailed account of which I propose to give you later on, as most of the trees planted in '96 have set their fruit this year and many will require severe thinning. In pears, the Dempsey takes the lead in growing and is also loaded with young fruit. Winter Nelis, Doyenne 'd Ete, Beurre Easter, Bartlett, Seckel (a most delicious pear), Petite Marguerite and some others fruited last season and are again loaded this season ; I would just say that according to present prospects the apples and pears will be a record breaker this year. Cherries are well set and will be a good crop, but plums will hardly be found in this district. The weather is delightful and all sprayed orchards are looking fine at present.

Whitby.

R. L. HUGGARD.



## TIMELY TOPICS FOR THE AMATEUR—V.

**T**HE hot weather usually prevailing during the month of July brings a period of comparative rest and relaxation in garden work that is most acceptable after the busy time experienced during the spring and early summer.

Although routine work may not press so heavily as earlier in the season, sufficient can still be found to occupy all the spare time that one usually feels inclined to devote to the garden during the hot sultry weather; especially when, perhaps, other, and apparently more attractive sources of recreation present themselves to lure the plant lover away from his favorites. The garden, however, must not be entirely neglected as insect pests and weeds will still require constant attention to keep them under control. Fruit picking will be an acceptable relief to the usual routine of work in the garden.

Watering lawns and plants will also occupy considerable time and attention.

Extra care will be necessary in watering greenhouse plants, as many of these plants should now be enjoying a period of comparative rest that comes naturally to them when growing wild in their native haunts. This dormant, or semi-dormant, period in

plant life, requires to be of a much more decided character in some classes or germs of plants than in others, and, unless the plant grower has some knowledge of the requirements of the plants under his care, partial, or, perhaps, total, failure in their culture must of necessity be the result. Careless and indiscriminate watering of plants is responsible for many failures in plant culture at all seasons of the year.

**THE GREENHOUSE.**—The management of the greenhouse or conservatory during the hot months of summer, when most of its customary habitants are out of doors in their summer quarters, depends entirely on the class of plants that are still occupants of its benches. If Exotic ferns, fancy Caladiums, Anthuriums, Diffenbachias or similar plants that require great heat and moisture, are the principal occupants, the greenhouse must be kept well shaded and top ventilation almost entirely used in the day time, as these plants dislike anything like a draught. Very little ventilation, if any, must be given at night. Keep the floors well dampened and close the house an hour or two before the sun is off. This will keep down red spider. If the floors are kept well moistened very little spraying, if any, will be required.

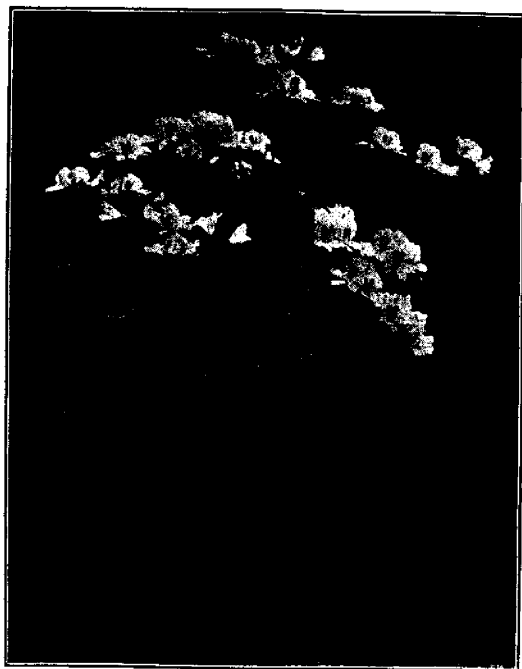


FIG. 1840. PELARGONIUM.

Tobacco stems sprinkled under the benches, dampened occasionally and renewed every two or three weeks, will keep down thrip—an insect to be as much dreaded as red spider amongst a collection of these plants. If summer flowering Tuberous, or Rex Begonias, or Gloxinias are occupants of the greenhouse, ventilation may be given more freely, leaving the top ventilation open all night. Oftentimes there is little else but a climbing rose, planted out in a box or border, that has of necessity to be left in greenhouse during summer, or, perhaps, some other climbing plant that requires to be kept dormant so as to ripen its wood to produce a supply of flowers in the winter. In this case the house should be only partially shaded, the top and bottom ventilators should be kept open day and night, and only sufficient water used to keep the roots of the plant from drying out completely.

The beautiful climbing Allamandas that are sometimes seen in greenhouses, and

that give their wealth of large golden flowers so profusely during summer and early autumn, require plenty of shade, heat and moisture to produce the best results possible.

Most varieties of winter flowering Begonias succeed best, stood or plunged, out of doors in partial shade during the hot weather.

Fancy Caladiums may, perhaps, need re-potting into larger pots; care must be taken not to disturb the roots during the operation.

Chrysanthemums will require plenty of water at the roots, and syringing once a day in very dry weather. Tobacco stems spread around near these plants will help keep down the black aphid or fly.

Fuchias require plenty of shade and water; a little weak liquid manure will help them to continue flowering.

Old leaves of Rex Begonias or Gloxinias will strike readily in sand in the cutting bed. In cutting these for striking leave about half of the stem attached to the leaf, insert the stem and a small portion of the leaf into the sand. Keep the sand moist, but not saturated with water. About half of the outside of the Begonia leaf should be cut away before inserting in the sand. Pot into light sandy soil in small pots when rooted.

Early sown Cinerarias and Calceolarias will require to be potted into small pots, or transplanted into shallow boxes, as soon as they are large enough to handle. A sowing of both of these for later flowering may be made now. A sash and frame in a cool, shaded position out of doors is the best place to start the seeds, also, to grow the young plants, until they are taken into the greenhouse in the autumn.

Roses should be planted out on the benches toward the end of the month if any are grown in this way, but I do not consider bench roses profitable in a small greenhouse where a general collection of plants is grown.

The Niphetos Rose, budded on a lamarque or cloth of gold rose stock, will give good results in a small conservatory or greenhouse. Pot roses, for fall and winter flowering should be stood outside in partial shade, and given only sufficient water to keep the roots from drying out. Pelargoniums and Fuchsias that have done flowering can be treated in a similar way; as withholding water partially from these and similar spring and early summer flowering plants induces a period of rest and helps to harden the wood necessary to produce flowering results next season.

Any repairs required to the greenhouse should be done now when most of the plants are out of doors. Give the sashes and woodwork a good scrubbing and cleaning with whale oil soap and water.

WINDOW PLANTS.—Watering and keeping free from insects are the principal features in window gardening just now. If any old plants of Geraniums are required for next winter's flowering they should be cut back to the old wood, and, as soon as the young buds appear, shake the roots partially out from the soil, cut off a portion of the roots and repot into a size smaller pot if possible; water very sparingly until well rooted. These will do best stood or plunged out of doors in the open ground. Fuchsias and many other plants required for winter flowering will succeed best stood out of doors in partial shade and not watered too heavily for a few weeks.

FLOWER GARDEN.—Watering and keeping down the weeds will be the heaviest work probably in this department, as the lawn will require very little attention during the dry season so far as cutting the grass is concerned.

Most of the perennials will be past their flowering season, Gaillardia Grandiflora, Rudbeckia (Golden Glow) and a few others may still give a few flowers. Early sown Asters, Zinnias, etc., will soon be coming into flower.

Dahlias will require plenty of water at the roots, syringing the foliage liberally in the evening will materially assist the growth of these autumn favorites. Some of the Cactus and single-flowered Dahlias are very pretty, and better suited for decorative purposes as cut flowers than the more massive blooms of the show varieties.

The double Rudbeckia (Golden Glow) is indispensable in the flower garden, its wealth of golden blossoms being produced in great profusion during the hottest weather, and it often gives quite a sprinkling of flowers until quite late in the fall. It requires very little care and seems to flourish in almost any kind of soil.

The herbaceous Hibiscus (Crimson Eye) makes a showy decorative plant for the lawn or border. Its large funnel-shaped flowers, produced in July, or early in August, when flowers are scarce, make it a conspicuous object when in flower. Being herbaceous in character it can be easily protected by a heavy mulching in winter, although, it has proved quite hardy in this section without any protection.

FRUIT GARDEN.—Currants, gooseberries, raspberries and late cherries should claim quite a share of the time that can be devoted to the fruit garden during July.

Plums, pears and peaches if too thickly set may be thinned to advantage. Green peaches make a splendid pickle if pickled just before the pit hardens. These should be treated the same as for walnuts in the pickling process. Plums when green can be used for stewing, but they make tremendous inroads on the contents of the sugar bowl.

Grape vines must be gone over occasionally and useless and lateral growth removed. For prevention and cure of mildew on grapes a good composition can be made by putting one pound of lime and half a pound of sulphur into three gallons of water, and boil slowly until reduced nearly one half. Allow the liquid to stand and cool, skim and

strain carefully. A teacupful of the liquid may be used once or twice a week, diluted in four gallons of water. If the liquid is strained carefully it will not spot or discolor the fruit when the vines are syringed with it. The liquid can be kept for a long time corked up in bottles or jars.

VEGETABLE GARDEN.—There should be a good supply of fresh vegetables ready for use now in this department that will be most acceptable, as potatoes, beans, peas and early planted cabbage and cauliflower should now be giving returns for labor and care bestowed on them earlier in the season.

A row or two of beans may be planted, if the weather is suitable they will furnish a supply of this useful vegetable until the first pinch of frosty weather touches them.

Late cabbages should be planted at once if not already done; these can be planted where crops of early peas or potatoes have been taken off. Dig and manure the ground well before planting them.

A row or two of beets may be sown, these are much more tender eating during fall and winter than those sown early in spring. Sow a few rows of spinach seed, it may come in nicely for use in early autumn.

Plant celery in shallow, well-manured trenches. Celery requires plenty of water during dry weather. The end of July will be early enough to plant celery for winter use.

White turnips may be sown if you have a spare piece of ground; mix a few Chinese rose or white radish seeds with the turnip seed before sowing. Light, rich soil suits white turnips best.

Spray or sprinkle potatoes with Bordeaux mixture; a little more Paris green may be used than is usual in this mixture to keep down the potato bug.

Keep the hoe busy, surface stirring the soil helps to keep it moist and cool as well as to destroy the weeds.

HORTUS, Hamilton.

## TRADESCANTIA.



FIG. 1841. TRADESCANTIA.

TRADESCANTIA, or WANDERING JEW, is such a favorite with all amateurs being so easily grown and withal so pretty that our readers will be interested in the following note from *Vick's Magazine* concerning the florist whose name it bears: Its botanical name is associated with a celebrated florist, John Tradescant, gardener to that unfortunate monarch, Charles I. Tradescant was a

Dutchman, and was called Tradescin by his associates. He established a botanic garden in Lambeth, England, as early as 1629, which was then a rare thing. He also collected a botanical museum, of which Flatman, the painter-poet, said

Thus John Tradescin starves our wandering eyes  
By buying up his new-born rarities.

He bequeathed this museum to his friend Elias Ashmole. His wife contested the will, but failing in her suit, and not willing to be resigned to the loss of the museum, she foolishly drowned herself; this tragedy so affected Ashmole that he did not care to keep it in his possession, and he presented the museum to the University of Oxford in 1677.



FIG. 1842. AZALEAS GROWN BY S. AYLETT, HAMILTON.

AZALEA CULTURE.



**AZALEA INDICA** is one of our most popular winter and spring flowering evergreen plants. With a good collection, the Azalea may be had in flower from Christmas to May, if kept in a cool house and a few plants brought into a higher temperature as the buds advance.

SOIL.

The best soil for the Azalea is a compost of two parts good leaf-mould, one of light fibrous loam, and a little well-rotted manure.

DRAINAGE.

Thorough drainage of the pots is most essential. Pot firmly, and do not use too large sized pots. Be sure the ball of roots is thoroughly soaked before potting. Large plants do not need repotting very often, but should be given a little weak manure water occasionally. The best time to repot the Azalea is soon after it has done flowering.

After potting they should be kept in a close atmosphere for a few days, and freely syringed. About the end of May they should be plunged outside in partial shade, and kept well syringed and watered every day during the hot months to encourage new growth and the forming of new flower buds. They should be taken inside before the first frost and given less water until they begin to flower, when they again require a free supply.

The Azalea as a house plant has not hitherto been a success. The atmosphere of an ordinary dwelling is too dry, thus encouraging red spider and thrip, which soon destroy the foliage. If the plants are syringed with water every day they will be greatly benefited, and by this means some have managed to grow them successfully for at least three successive seasons.

Hamilton.

SAMUEL AYLETT.

A NOVEL TRELLIS.

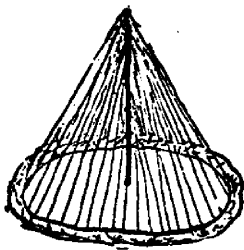


FIG. 1843.

A NOVEL TRELLIS for morningglory is thus described in Park's Floral Magazine: I make a trench four inches wide, in a circle

eight feet in diameter. After the soil has been enriched by rotted manure, and well pulverized, plant the seeds. The plants grow quickly and in a few weeks they will be large enough to string. Put a pole eight feet high in the centre of the circle; insert one end in the ground, and in the other drive a nail; put the strings four inches apart at the bottom, carrying around the nail in the top of pole and down again. If a door is made in one side it makes a novel tent for the little folks, besides being beautiful.



## PALMS.

**H**ERE are a great many varieties of palms grown for decorative purposes, some of the most popular, in the order in which they are most favorably known, are the following :

*Kentia Balmoriana*. This is probably the best house palm grown, and is increasing in favor every year. It is not a rapid grower, but in a light place in a warm room and with sufficient water, the leaves being kept sponged off and clean, it makes an ideal house plant and improves from year to year. I have seen several of these house-grown palms better than any coming from green-houses.

Next in order comes *Kentia Fosteriana*, a fine palm, but generally a stronger grower than the preceding. Some of this variety shown last fall prove what can be done in the house with it. The fine *Kentia Canterburyana* is rather expensive. The hardy and very graceful *Cocos Weddelliana* is fine for a warm house, but is not so long-lived as the Kentias; it stands the wear and tear of the house very well for one season.

The *Phœnix Rupicola* is one of the most graceful palms grown, and like nearly all of the Phœnix tribe stands the house treatment well. It is a slow grower and rather expensive, but with a little care will last many years—which may be said of several other varieties of the Phœnix, viz., *Canariensis*, *Tennissima*, *Sanderiana*, *Dactylifera*, etc.

*Latania Borbonica* is a favorite house plant in places where it can have considerable room to spread. But a much finer variety, with something of the same character, is *Levistonina rotundifolia*, of a more compact growth than Borbonica, and quite as hardy and useful.

*Rhapis flabelliformis* is rather a slow grower, but one of the best hardy decorative palms we have. *Rhapis humilis* is quite as

hardy and is more graceful and of a brighter green, but is scarce and expensive, and so it is seldom seen here.

The very graceful *Areca lutescens* is much in use in the United States, but has not proved a good house plant here, seldom lasting more than one season, even with careful treatment.

*Chamærops fortunii* will stand much ill-treatment, but grows slowly and looks stiff, while *Geonoma Gracilis* is pretty, but tender and scarce. *Areca Verschaffeltia*, a good, hardy variety for a warm house, has a distinct appearance, but is rather expensive.

Several varieties of *Caryotas* are known to growers as pretty plants, but are seldom seen outside of private collections in this country. The same may be said of varieties of *Calamus*, several fine specimens of which are in the collection at Exhibition Park.

There are a great many plants called palms that are not really palms, such as the *Cycads* and several varieties of *Pandanus*. Very many more varieties of the palm beside those above mentioned, are well known to florists. The edges and tops of the leaves turn brown from various causes—from want of water, from getting too much water; sometimes furnace gas is the cause, or the air becoming too hot through radiators, stove pipes, etc. Palms do not want large pots unless they are growing very freely, and even then it is best, in repotting them, to give them a pot only one size larger than the one they have been growing in.

The soil I like best for palms is made up of one-half sandy loam and one-half well-rotted manure. The soil should be worked evenly down around the sides of the pot and pounded tight with a potting stick. Before repotting the plant should be well watered, and also after the potting is done, so that all the soil may be equally moist.



A great mistake is often made by amateurs in potting up plants that are not doing well. Many fancy that when a plant looks sickly it should be repotted. Perhaps it is in an eight-inch pot; they procure a pail, some nicely sifted soil, and carefully transfer their plant, putting the soil in as lightly as possible and never pressing it down for fear of hurting the roots. The plant soon dies,

while the owner thinks he has given it the best of care. A plant never needs a larger pot unless the pot it is in is full of healthy roots. A sick plant with few roots may want repotting, but it is into new, sweet soil, and a smaller pot, the soil without much manure and the plant firmly set.

By MR. THOS. MANTON, of Manton Bros., Florists, Eglinton.  
Read before the Toronto Horticultural Society.

LAWNS AND WALKS.—These, if kept trim and neat, as they should be, add to the appearance of and contribute greatly to the enjoyment of a place by its proprietor and friends. The lawns should be mown and the edges cut at least once a week, and if there are any "bents" or flower stalks of weeds or grasses which the machine will not cut, these should be cut with a scythe. Where the grass is thin the collecting box may with advantage be left off the mowing machine. Gravel walks should not be hoed, but all coarse weeds are best pulled up, and if there are many small weeds appearing,

one of the simplest methods of getting rid of them is to dress the walks with rough salt obtained from manure dealers. This should be applied during hot, sunny weather, and in sufficient quantities to just whiten the surface. Crude carbolic acid used at the rate of one ounce to a gallon of water and liberally applied with a rose watering-pot, is both a cheap and effective remedy. Whatever destructive agent be employed, care must be taken not to let it touch either the roots and tops of box or other edgings, nor the lawn grass.—*Garden Work.*

WINDOW BOXES.—A charming arrangement was noticed recently. The plants employed were nasturtiums only, and the entire cost could not have exceeded fifty cents. The box was of rough boards evidently, strongly joined, and set upon a pair of iron brackets. The box was covered with floor oilcloth, tacked on, and the design was such that it looked like tile work. The colors were cream and brown. A pine frame the width of the window, and six inches across, was nailed to the top of the window for attaching the strings on which the vines were supported. The nasturtiums were of both the dwarf and climbing sorts. A drapery

of trailing nasturtiums fell over the edge of the box, and dwarf nasturtiums filled the centre, and all were of the deepest, richest colors known to this flower. The nasturtiums that were trained up the supports were of lighter colors, lemon and orange, and cream. The middle strings had been loosened and the vines had been drawn back from the centre to each side by strong strings; the whole appearance being a diamond-shaped aperture surrounded by a drapery of living green. The effect was equally charming from within and without.—*Vick's Magazine.*



## The Canadian Horticulturist

COPY for journal should reach the editor as early in the month as possible, never later than the 15th.

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 or Post-Office Order are at our risk. Receipts will be acknowledged upon the Address Label.

ADVERTISING RATES quoted on application. Circulation, 5,500 copies per month. Copy received up to 20th.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events or doings of Horticultural Societies likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of Horticulturists.

ILLUSTRATIONS.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, etc.; but he cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

DISCONTINUANCES.—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrearages must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post-Office address is given. Societies should send in their revised lists in January, if possible, otherwise we take it for granted that all will continue members.

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### NOTES AND COMMENTS.

THE NOVA SCOTIA School of Horticulture had 69 students last year. The expenses of the school were \$1,843.47.

CHERRY CURCULIO.—This insect is often very injurious to the cherry crop, and must be fought persistently with Paris green. Three ounces to forty gallons of water is the usual amount, and two or three times that quantity of lime should be added to prevent injury to the foliage, and help to hold the Paris green to the same.

THE CANKER WORM has been exceedingly troublesome in many of our apple orchards this spring, especially on Spy trees. The infested trees should be early sprayed with Paris green, 4 to 6 ounces with the same of lime to 50 gallons of water. The lime should be reduced to milky consistency and run through a wire sieve to avoid clogging the nozzles. When the worm is well grown

Paris green is said to be less effective, and Bowker's arsenic lead, 3 ounces to 50 gallons of water, is an effective remedy. The Ohio Experimental Station says this mixture does not injure the foliage. It is milky white in appearance, as thin as water, and adheres for weeks. It may be procured from the Bowker Chemical Works, Boston.

KEEPING WINTER APPLES IN WAXED PAPER—Youngers, of the Nebraska H. S., has reported on his experiments under this head. In fall of 1897, about November 1st, all available varieties were put in cold storage, each apple wrapped first in a sheet of waxed paper—9x12 inches for the smaller and 12x12 for the larger ones. Another cover of newspaper was added, and then all packed tightly in barrels and put in cold storage with temperature at 36°. A few were stored in barrels without wrapping. On June 1st, 1898, the first examination was made, and

of those not wrapped 70 per cent. were decayed, of some wrapped in newspaper only, about 30 per cent. were decayed, while those with the double wrapping of waxed sheets and common paper remained in almost perfect condition as late as November 1st.

RUSSIAN APPLES have been very much decried in some quarters to the south of us as of little benefit to America. On the other hand we claim that much has been gained by the Budd-Gibb and other importations. Here is a list of valuable varieties which we owe to that country, viz.: Duchess, Tetofsky, Yellow Transparent, Longfield, Hibernial, Anisim, Charlemoff, Yellow Sweet, Regal.

BANDS FOR TRAPPING CODLING MOTH.—The following is a copy of an Order-in-Council approved by His Honour the Lieutenant-Governor, the 24th day of May, A. D. 1900.

Upon the recommendation of the Honourable the Minister of Agriculture, the Committee of Council advise that pursuant to the provisions of "The Noxious Insects Act" '63 Victoria, Cap. 47) the following regulations be made for the prevention and destruction of the Codling Moth:

1. It shall be the duty of every occupier of a lot within the municipality, or if the land be unoccupied, it shall be the duty of the owner of such lot, within one week after receiving notice as provided for in the Act, to place bands (as hereinafter described) upon the orchard trees located upon said lot, as follows: Upon all bearing apple trees and pear trees, and upon all orchard trees of bearing age within forty feet of such bearing trees.

2. The bands shall be made of "burlap" or "sacking," or similar suitable material, and shall not be less than four inches in width and of three thicknesses, and shall be securely fastened at a convenient point between the crotch of the tree and the ground.

3. The occupant or owner shall have these bands removed and inspected, all larvae therein destroyed, and the bands replaced at intervals of not more than two weeks during the months of June, July and August.

Certified, J. LONSDALE CAPREOL,  
Asst. Clerk, Executive Council.

An attempt is being made to put these regulations in force in the Township of

Saltfleet, in Wentworth County, and we shall look with great interest for the results attained.

APPLE RAISING FOR PROFIT is the subject of an address lately given by Mr. J. H. Hale before the Massachusetts Horticultural Society. In his address he said:

"New England, as regards soil and climate, is better suited to the apple than other sections of the country. We can grow apples of finer color, flavor and texture in New England than anywhere else. The first thing necessary beyond soil and climate is to have good trees with perfect foliage from the beginning to the end of the season. Frequent and thorough tillage is necessary. Trees must have room enough for air and sunlight. Next they must have intelligent feeding. They need potash and phosphoric acid, with a moderate amount of nitrogen. Fungous growth will attack even the best cared for trees to some extent, so that spraying is essential.

"Let us first consider our old orchards. What can we do with them? Old trees should be pruned, and this should be done by a man of experience. Cut out all dead wood and some small branches. Don't try to do it all in one year; take two or three. If you do not want to plough your orchard, put on a top dressing and harrow. But if your orchard is to be devoted to apples alone, plough it and put on fertilizers. Scrape off all old, rough bark, and spray with a potash wash while the trees are dormant. Carry on the ordinary summer spraying for the codling moth, etc. If your land is rocky or rough, it may be mulched with any old material that is available—anything that will kill out the sod—but ploughing is better. You may pasture swine or sheep in your orchard, if you wish. I know of a man who has used an orchard of eight acres as a pasture for hens, and he is 50 per cent. ahead of the former owner, who made the same

orchard a hayfield. After cultivating a year or two, it will be necessary to thin out the fruit.

"You cannot have good fruit without thinning. If a young tree attempts to bear ten apples, pick off eight and leave only two to come to perfection, and you will have two fine specimens. The talk of an "off year" is nonsense. There should be no "off year." When the climatic conditions are such that the crop is ruined, the next year the trees will be so full that the fruit cannot ripen and at the same time form buds for the following year. By thinning off 75 to 80 per cent. every year you can bring the tree into the habit of annual bearing. Watch your trees closely and as soon as the apples are ripe pick them, even if it be August or September. Pack them at once in the barrels or boxes in which they are to be shipped, and place where there will be a good, even temperature. Grade according to size and pack honestly from top to bottom."

GILLETT'S LYE has been used at Maplehurst on rose bushes, both for aphid and rose hopper with marked benefit. We used one ten cent package to five gallons of water, which, in a few cases slightly burned the foliage, but wholly routed the enemy. We also used it with success to destroy the aphid on the cherry trees, applying it with Mitchell's atomizer, but it injured the foliage considerably.

KEROSENE is also used for destroying the insects above mentioned. The 10 per cent. solution is the proper strength in summer, made in the proportion of one gallon kerosene to ten gallons of water.

WHALE OIL SOAP used in the summer time where the foliage is out, should be used at the rate of one pound to five or more gallons of water. This will destroy the young of the San Jose Scale and Aphid.

IRRIGATION in fruit growing is the title of Bulletin No. 116, U. S. Department of Horticulture. After showing that the trees of the Citrus family require more water than our deciduous trees, he attributes three evils to insufficiency of moisture, viz.: Poor growth, poor fruit and intermittent bearing. Summer irrigation before fruit ripening of three acre-inches per acre after the early ripening fruits have reached good size and just before they begin the final swell, is claimed to reach the circulation of the tree in time to materially aid in the attainment of satisfactory size. More than this it also helps the tree to hold its foliage and growth the balance of the season. A large portion of the bulletin is taken up in explaining the various methods of utilizing irrigation water which we cannot enter upon here; for these details we refer our readers to the bulletin referred to.

FERTILIZING SELF-STERILE GRAPES is the title of Bulletin No. 169, by Prof. S. A. Beach, Geneva, N. Y., who has for several seasons been testing the self fertility of the grape. Many of our cultivated American grapes will not produce perfect bunches unless cross pollinated by some more fertile variety, and Mr. Beach has been seeking to find out the best varieties to use for this purpose. Detailed statements of the results are given with quite a number of varieties upon which experiments were made, and of these we give the instance of the Brighton, a self-sterile variety, fertilized by different varieties, the first five more or less self-sterile also, and the others more or less self-fertile. The illustration speaks so fully for itself that nothing more is necessary to prove the necessity of planting self-fertile varieties in our vineyards instead of large acreages of one variety, and in any degree of a self-sterile kind, such as Lindley, Salem, Barry, Merrimac, etc.



FIG. 1844.—BRIGHTON FERTILIZED BY DIFFERENT VARIETIES.

1. BY SALEM. 2. BY CREVELING. 3. BY LINDLEY. 4. BY BRIGHTON. 5. SELF-POLLINATED. 6. BY NECTAR. 7. BY JEFFERSON. 8. BY NIAGARA. 9. BY WORDEN. 10. BY VERGENNES. 11. BY ROCHESTER.

## PROMINENT CANADIAN HORTICULTURISTS.



FIG. 1845. G. C. CASTON, CRAIGHURST.

It has always been the policy of our Association to search out the foremost fruit grower in each agricultural district as director for that district. By this means we have tried to secure as officers the best representatives of our industry.

No mistake was made when Mr. G. C. Caston was elected for Division No. 13. His excellent common sense; his long experience in growing and handling fruits, and his regular attendance upon our meetings have combined to make him one of our most valued members, whose judgment is always sought when important questions arise.

Mr. Caston was born in the village of Craighurst where he now resides. He began his Public School education at six years of age, and at fourteen was as far advanced as the teachers of those days. Having to make his own way in the world and not being able to get the benefit of a course at the High School, he worked at farming for several years. Having a liking for machinery he worked for several years at the milling business, but, finding his

health failing, he turned back to the farm. With an inborn love for horticulture he resolved to turn his village lot of five acres into an orchard, and soon planted it with trees. About this time he became a member of the Ontario Fruit Growers' Association, and he regards this as one of the most important steps in his life. Always a voracious reader and possessed of a retentive memory, he read all the horticultural literature he could get. The annual reports of the association had, for him, an absorbing interest, and he will always remember with warm feelings of gratitude Prof. Saunders, the late P. C. Dempsey, A. M. Smith and others, who were leading members of the Board at that time, and who contributed so much valuable information to the reports.

For several years, while his orchard was young, he grew small fruits between the trees. After a time he purchased the adjoining farm, and has now quite a large area planted to apples, pears, plums, cherries and small fruits, and which he is gradually enlarging every year.

In '94, at the request of the Board, he accepted the management of the Experimental Fruit Station for Simcoe County, his special-being hardy apples and hardy cherries.

On the retirement of Mr. Chas. Hickling from the Board of the Association Mr. Caston was elected Director for Division 13. This position he has held up to last year when he was elected Vice-President of the Association. -

Mr. Caston has also been Secretary of the local Farmers' Institute since its organization, and has served as Secretary and Director of local Agricultural Societies, and his services as judge of fruit at the fall fairs is much in demand. He has a strong faith in the future of the fruit growing industry in Ontario as one of the most important industries of the Province.

## QUESTION DRAWER.

### The Bud Worm.

1163. SIR.—Would you please give me the name of enclosed grub found on the apple leaf, and what is best to destroy it?

Oakville.

C. W. MARTIN.

The larva sent to us by our correspondent is the well known Bud Worm (*Tmetocera ocellana*). Early in spring, when the buds begin to open, it eats out the centres of the buds and later webs together the leaves for self protection. The best remedy is to spray the infested trees with Paris green.

### Apple Aphis.

1164. SIR.—What is best to do for a tree having lice on the bark of the limbs?

Oakville.

C. W. MARTIN.

The apple aphis, cherry aphis, rose aphis, etc., can be easily destroyed by spraying with whale oil soap, Gillett's lye, or kerosene emulsion early in the season, before the leaves begin to curl. It is best to make one strong application just before the buds open out.

### Hybridizing of Cucurbits.

1165. SIR.—Will you please to answer the following questions in an early issue of your valuable monthly. Will the following hybridize or in any way lose flavor by being planted near each other, and, if so, how far apart should they be planted, viz.: Watermelons and citrons, watermelons and muskmelons, watermelons and cucumbers, muskmelons and cucumbers, muskmelons and pumpkins, muskmelons and squash, squash and pumpkins, different kinds of muskmelons? Also, if they do mix will the change be perceptible the same year or from the seed of that in the next year's fruit? When one has only a square plot and wishes to cultivate a variety it is well to know. Thanking you for past favors, I am yours truly,

Iroquois, Ont.

A. B. CAMERON.

The question of crossing and hybridizing of cucurbits is one about which there is a good deal of misunderstanding. The most systematic experiments along this line have been conducted at the Cornell Experiment

Station by Prof. Bailey, and results attained show that hybridizing is not nearly so frequent as is supposed.

Different varieties of the same species, such as one variety of muskmelon with another, or one variety of cucumber with another cross readily, but hybridizing, or the crossing of distantly related species, such as muskmelons with pumpkins, very rarely, if ever, occurs, although in more closely related species like the watermelon with the citron it is not unfrequent.

The effect of the cross, however, is not apparent the first year and shows itself only in the product of the seeds of the crossed specimens. In practice, therefore, all of these cucurbits may be grown side by side without injury or loss to quality in any of them. The seed from specimens grown in a mixed plantation should not be saved for future planting.

Guelph.

H. L. HUTT, O. A. C.

### Wild Ginger.

1166. Will you kindly let me know through your magazine if the enclosed leaf belongs to the much valued ginseng root?

Fergus.

F. TOBIN.

The leaf which you send is that of the wild ginger (*Asarum Canadense*), a plant in no way related to the ginseng, which belongs to the Aralia family. Ginseng may be easily known by the following characters: The plant bears only one stem each year, on the summit of which are three leaves on long petioles, each leaf consisting of five petioled leaflets. From the point where the three leaves are borne at the summit of the stem, a small umbel of greenish white flowers is thrown up. Late in the season these flowers are followed by bright scarlet berries.

C. E. F., Ottawa.

J. FLETCHER.

**Budding and Raising Cherries.**

1167. SIR.—Please give instructions for propagating and growing cherries.

A SUBSCRIBER.

The growing of fruit trees is a comparatively simple matter, and many a farmer who desires to plant a large orchard and can with difficulty afford the expense of buying the trees, might raise a few hundred for himself.

Cherry trees are usually raised from the seed. The pits may be sown soon after being gathered, or if stored until spring they need to be mixed with earth and kept in a cool place. Every precaution must be taken to prevent the pits becoming hard and dry before they are planted, or they will not germinate. The second summer after sowing, the seedlings may be budded in the same manner as peaches, except that it must be done earlier, just when the bark lifts easily.

Usually the pits of the Common Black Mazzard are used as seeds, especially for raising stocks for the sweet varieties. For the Kentish and Morello varieties, and sometimes for the sweet, the Mahaleb is often used, a common variety from Southern Europe which is imported for sale. It is a slower grower than the Mazzard and has a tendency to dwarf the variety budded upon it.

The cherry may be also propagated by grafting, but as a rule this method is not employed by nurserymen for raising young trees.

Sweet cherry trees for orchard cultivation should be planted twenty feet apart each way, on dry sandy soil, well enriched and cultivated. Some people say that they need no cultivation and think the only place for them is in neglected fence corners, but this is an exploded notion. Three years of cultivation of a cherry orchard at Maplehurst has brought the trees into great vigor, size and productiveness, much sooner than trees of the same age in sod. The pruning knife needs to be applied with caution, for

the cherry tree seems to resent much cutting; but heavy pruning may always be avoided by the frequent and regular use of the knife or grape pruning shears. Limbs that cross should be removed, and long limbs should be shortened to encourage branching.

It is not well to plant too heavily of one variety unless plenty of pickers can be relied upon, for such small sized fruit requires many hands to gather it. One might cover the season for over a month with such a list as the following:

*Sweet*—Early Purple, Knight's Early Black, Governor Wood, Elton, Napoleon, Spanish, Tartarian, Elkhorn and Windsor.

*Sour*—Early Richmond, Montmorency.

*Morello*—Wragg and English Morello, Koslov Morello.

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**Gillett's Lye.**

1168. SIR.—Please state in your next issue if the above article is any good, and oblige

AN AMATEUR.

This is simply an excellent brand of condensed lye, and a convenient form in which to purchase and handle the same. It is very strong and effective for destroying aphid and other soft bodied insects by contact with their bodies, which are burned up thereby. Before the foliage appears the trunk and limbs may be washed with a strong solution, and the result will be to cleanse the wood of both insect and fungi, and make it vigorous and healthy, a result similar to that obtained by the application of whale oil soap.

We have been applying Gillett's lye to our rose bushes in May and June for the destruction of aphid and rose hopper. We used a ten cent package to five gallons of water, and the result was quite satisfactory, although some of the leaves were slightly burned. It is very convenient of application with one of Mitchell's hand sprayers.



**Kerosene Emulsion.**

1169. SIR,—Please give a receipt for making Kerosene Emulsion. I have several, but cannot understand them, neither can I find any one around here who can. How many gallons, not parts of water, should I add to half a pound of soap, two gallons of kerosene and one gallon of water. When would you recommend spraying with this?

J. H. HELM, Port Hope.

In making Kerosene Emulsion we would advise using soft water for dilution. The formula referred to by our correspondent is Cook's, and is as follows:— $\frac{1}{2}$  lb. hard soap, 1 gallon boiling water, makes strong soap subs, and add two gallons kerosene while boiling, stir well and an excellent emulsion will be formed. From this stock solution a little may be taken at a time and diluted with soft water whenever required for use. In diluting it is usual to make the kerosene about 1-15th of the whole; so that if the whole of the stock solution were needed at once, thirty gallons of water should be added.

But different strengths are used according to the tenderness of the foliage, and to every quart of the three gallons of stock solution which you take out for use, you may add from 4 quarts to 25 quarts of water; the latter of course being a very weak solution.

This is very effective for aphid if used pretty strong. It may be applied at any time in the season, but for aphid it should be applied before the leaves are fully expanded and begin curling up, and for oyster shell book louse the best time is the first part of June, when the young lice are most easily destroyed.

**Cranberry Culture.**

1170. SIR,—I write to you to know if you can give me any information on growing cranberries. I have a swampy place which has deep muck, would that be the right kind of soil to grow them? Will you please let me know through your next journal the kind of soil, how to prepare it, how to get the plants, how long before they would bear fruit and if you would think it a profitable business. You will please let me know everything in connection

with the growing of them, as I know nothing about it myself. The place I have is covered over with grass and shrubs; water lies on it, but the muck always seems to be wet.

Orangeville,

WM. FOLEY.

Cranberry growing is not always a success. A large bog was made artificially at Walkerville, at very great expense, and has so far proved a failure. But where natural conditions are favorable, so as to reduce the great expense of establishing the plantation, they are usually profitable, for after the bog is once completed and the vines in bearing condition, the culture is simple and inexpensive. The *New England Farmer* gives the following instructions for preparing and planting a patch: A piece of low, swampy territory is selected to begin with. From this all the trees, bushes, or whatever growth may exist, are thoroughly cleaned out and the roots eradicated. Then the turf or dirt is taken off and the bog ditched and leveled. The old fashioned way of getting the level by the water and straight edge can not be improved upon for accuracy where the bog is well ditched. The level place is then covered with some four inches of coarse sand—some put on five—and the coarser the sand the better, if it will not interfere too much with the growth of the vines. The bog is then ready for the planting of the vines. The only fertilizer employed is to sometimes put a trifle of guano on the top of the plant, which works down through the sand to the roots of the vine. Three years must usually pass before the vines bear fruit, and they are generally not in bearing condition until the fourth year after planting. Some bogs on the Cape are still in good bearing condition that have yielded fruit for more than thirty years. Sometimes the vines are mowed down closely, but they come up again and bear more vigorously for cutting. The chief attention required is to keep down the weeds and rushes, which are usually not troublesome if not neglected, and to watch the enemies of the vines, the principal of which is what is popularly known as the fire worm. If they get in unobserved, a promising lot will be completely ruined in a few days, and they do their work so rapidly that they are well named the fire worm. Of late years they have been quite destructive. The remedy for them is a tobacco wash and it generally proves very efficacious if applied in time. The cost of producing a barrel of Cranberries all ready for market varies from three to four dollars a barrel of 100 quarts. It is safe to put down the average market value at \$7.00 per barrel.

## Open Letters.

### Grapes in Nova Scotia.

Grapes do not grow very rapidly. I have two varieties, the Early Amber and the Green Mountain, set two years. They have made a very poor growth. We have a great deal of fog during the summer. The soil is very shallow here, not more than ten or twelve inches, and is very heavy; holds water. The ground at present in our fields is about as soft as when frost first left the ground. Have had a great quantity of rain. Very little seeding done as yet; some have not any seed in ground. Have a lot of gooseberry and raspberry bushes. They seem to do well, with the exception of gooseberries, which break down badly in growing season, owing to rapid growth and being wet.—Yours truly,

ARTHUR C. SABEAN.

Rossway, Digby Co., N. S.

### Fall Planting.

(SEE QUESTION 1156.)

SIR,—I have just received the June number of "Horticulturist," and wish to congratulate you on the constant improvement taking place in your valuable journal. This is certainly a very good number.

I, however, notice one great mistake, which I think would not be made if a little thought were given.

A gentleman writes, asking whether it would be best to buy his trees in the Fall, and bury, or wait until Spring. You simply say that it means extra work to get them in the Fall, and he should buy in the Spring. No nurseryman would give such advice, and we believe a nurseryman's advice on this point is better than the average planter's.

If it were possible to get trees just the moment you were ready for them, in the Spring, then it would be all right, but such is not the case with any nursery doing business of any amount. Especially is this the case with such seasons as the last. Frost held in the ground until nearly the middle of April, then it came very hot, buds were forced, and it was almost impossible to get stock out in good condition. Even working a big force from daylight until sundown, it will take at least three weeks to dig, pack and ship orders from any responsible nursery concern doing a good business. Then another week is sometimes added before stock

can reach destination, varying of course according to distance. This brought, this year, the delivery of trees in May instead of April.

Trees obtained in the Fall, as I know, when properly handled, either when buried or planted out permanently, were almost in full leaf before trees ordered for the Spring could possibly be delivered.

Even if a little extra work is necessary, if a man has his trees on hand in the Fall, he can plant just as early as the season will admit in the Spring, and he certainly has an advantage over the man who orders stock in the Spring, as a rule.

Then another point regarding the buying of stock in the Fall. Very few nurseries run out of varieties in the Fall, as the bulk of the business is done in the Spring. Those who buy in the Fall can always be sure of obtaining the varieties they desire, whereas in the Spring we are obliged to stop the sale of many varieties because they are sold out. It is impossible, always, to tell what varieties will be in demand. You cannot plant so as to always have the required number of each variety on stock, consequently if there is any shortage it comes on Spring sales.

I have watched this matter carefully for twenty years, and I find that getting stock in the Fall is more satisfactory to everyone in the long run.

There is less stock lost in the Fall, according to the number planted, than there is with Spring-planted stock.

There has been an unreasonable prejudice by many against getting stock in the Fall, mainly, no doubt, because they have to pay for the stock a few months before it begins to grow, but there are advantages that will certainly over-balance any objections that can be raised against buying stock in the Fall.

I believe, in most sections, stock can be planted out in the Fall, a little extra care being given to plant deeply and bank the trees six inches to a foot in height. This banking can be drawn away in the Spring as soon as the frost is out.

Very few people will take the pains to mulch in the Spring, and unless Spring-planted stock is heavily mulched there is much loss, especially when we get a dry season, as we have had this Spring. Trees will start, but the ground soon gets so dry that the young fibres cannot obtain nourishment and the trees go back.

The grumbler's rule is: "If trees fail in the Fall, blame the Winter; if they fail in the Spring, blame the nurseryman." The very opposite should be the case, if failure is ascribed to these causes.

In the Fall the nurseryman can send out stock in a perfectly dormant condition, and if it is at all properly handled I will guarantee that there is 50% less loss obtaining stock in the Fall than there is buying it in the Spring.

As nurserymen, we try our best to get the stock out at the earliest possible moment in the Spring. We are anxious to do this for several reasons, one of which is, we have our own plant-

ings to attend to, and that cannot be done until we have shipped stock to our customers.

Then again, we are anxious to get the business over and collections made, and there are other reasons which urge nurserymen to use all expedition, but in spite of all our efforts, it is impossible in all cases to get stock out as early as it ought to be, in the Spring, for successful planting.

I believe, too, that stock handled in the Fall will stand fumigation better than in the Spring. I am satisfied, at certain advanced stages, the fumigation is injurious to nursery stock.

Everything being considered, I think your view a mistaken one regarding obtaining trees in the Fall.—Yours truly,

Toronto.

W. E. WELLINGTON.

#### A Line From Mr. Burbank.

SIR,—Your esteemed note of March 8th and Report of Fruit Experiment Stations received. I *very highly appreciate the report*. It is an extremely valuable guide, and especially useful to me in guiding my experiments in the production of *hardier* fruits, which I have been pursuing for the past eight years as a specialty. I have no trace of scale in my grounds anywhere. It has wholly disappeared several years ago, and is now forgotten as a thing of the past. No doubt the *Vedalia Cardinalis* and other insect enemies have exterminated it *completely*. I shall be greatly pleased to have my new fruits grown there. Climate is one of the most promising for hardiness. Shiro and Sugar prune next; probably Sultan, also, may prove hardy. These fruits are a very great improvement on the ones first sent out, and will amaze fruit growers if they thrive there. My Paradox Walnut will not be hardy; Royal will be wherever the American Black is. I have no fresh stratified nuts of either now. Again thanking you for the extremely valuable report, I remain, faithfully yours,

Santa Rosa, Cal.

LUTHER BURBANK.

#### Fruit in New York Market.

SIR,—A few days ago I called at a first-class fruit store at the corner of Broadway and 28th street in this city and enquired the retail price of prime fruits. Easter Beurres pears were 18 cents each, or \$2.00 per dozen. They were as hard as stones, but soon ripen in a warm room. Size very large, and perfect in appearance; quality A1. Winter Nelis, prime every way, 15 cents each, or \$1.50 per dozen. Patrick Barry, large and very handsome, rich orange russett, same price. I have one to ripen weighing nearly a pound, without a blemish, price 15 cents. Apricots, 50 cents per dozen. Prime grape fruit, 60 cents each. Black cherries from California, best best 60 cents per pound; second quality, 30 cents. Best navel oranges, 10 cents each, or \$1.00 per dozen. Strawberries of best quality, 35 cents per quart. There were fine hot house grapes at \$2.00 per pound. Colossal asparagus, 50 cents per bunch; last year it was 90 cents. Long English cucumbers, grown under glass, 25 cents

each. There is no surplus of prime stock at these prices.

In some sections of California all boxes of oranges are the same size. The best contain 84 oranges. These retail at 10 cents, or \$8.40 per box. Next quality, 96 in box; 3rd quality, 120; 4th quality, 144. These retail at 2 for 5 cents and bring, as you will see, \$3.60 per box. The tree that bears the best fruit is not over-loaded and is kept healthy.

The lowest grade comes from bad care, poor soil and over-loading. The market is glutted with this quality, but never with the best. Farmers fatten cattle by good care and feeding. Good fruit must have the same treatment. You cannot cheat a milch cow of food and care without loss of milk; nor a hill of corn; neither can you cheat a fruit tree. The largest profit is in the best quality, and the demand is unlimited.

Some prime Northern Spy, such as I have had at Oshawa, would retail at 5 and 10 cents each.

New York.

FRANCIS WAYLAND GLEN.

#### A Correction.

SIR,—In the April issue of the "Horticulturist" appears a letter over my signature in which I make certain charges against David Cantelon, apple dealer, of Clinton. I find that the statements I there made use of prove to be wholly untrue and unfounded. I now beg to withdraw and contradict them and to apologise to Mr. Cantelon for having made use of them. I believe Mr. Cantelon to be an honorable and fair-dealing business man. I had no desire to misrepresent or injure him, and my only excuse for making use of the statements I did is that I am very deaf and misunderstood what was told to me.

I desire to make what reparation I can, and you will oblige me by giving this communication the same publicity as you gave to my said letter published in April.—Yours truly,

Witness, W. Proudfoot. WALTER HICK.

Goderich, May 31, 1900.

#### Crop Prospects.

SIR,—In looking through the orchards, I find there is a very good show of blossom on the cherry and plum trees. Pears very fair of bloom, some trees not much. Apples generally very good; some trees are very full, others have scarce any blossom. On the whole there is likely to be a very fair yield. The season has been very favorable both winter and spring.

Goderich.

WALTER HICK.

#### Pears for Market.

The varieties I would advise all growers to grow for home or foreign markets are as follows: Bartlett, Beurres Bosc, Beurres Clairgeau, Doyenne de Comice, Sheldon, and Beurres d'Anjou, if first worked upon, the Keiffer, to make them bear more prolific, as they are shy bearers. The Duchess d'Angouleme may also be added to this list as a dwarf tree, and Doyenne Boussock as a standard; also, Lawrence for winter.

R. CAMERON.

## IMPORTANT TO WINE MAKERS—HOW TO MAKE CURRANT AND OTHER WINES.



HE currants should be perfectly ripe when gathered; they should be stemmed and washed before pressing, which must be done as thoroughly as possible with a 12-inch cider press. Ascertain the amount of juice thus obtained, and then add that amount of water to the same pumice and incorporate the water and pumice well together; let it stand a few hours and press it again. By this process an additional quantity of juice, though not so strong, is obtained; then mix the first pressing with the second and weigh a gallon of it, and whatever it falls short of 10 pounds to the gallon, add enough of good Havana sugar to make it weigh 10 pounds, and so on with the rest. I would here remark that an additional amount of sugar added to the above will make a sweeter wine, and perhaps more suitable to the taste of many. It would be rather an expensive business to those who have but few berries to make currant wine from the first pressing of the currant alone, as it requires one bushel of currants to produce a little over three gallons of pure juice. The red currant pure juice weighs  $3\frac{1}{2}$  pounds to the gallon. The white currant pure juice comes almost within the winemaker's rule, weighing  $9\frac{1}{4}$  pounds to the gallon. The way in which I make currant wine is to use the pure juice alone, or without much water, and I find that I can readily command \$3 per gallon for it, whereas the other would be dear at \$1 per gallon, and not much of a wine at that. Elderberry wine is made in the same way as first stated, adding about half water in the way of repressing the pumice, etc., as if it is made without the addition of too much sugar it resembles claret very closely. Black currant wine is made in the same way as the

elderberry, only the berries should be scalded before pressing, and if carefully managed in the fermentation will resemble the Rhine wines. When the juice, sugar and water are well incorporated by stirring together until the sugar is dissolved, it is then placed in an open tub in a temperature of about 60° F., there to stand a few days until the froth and impurities rise to the surface, which must be removed as often as it accumulates, and when the liquid becomes limpid and somewhat transparent, then it is placed in a clean barrel to within 5 or 8 inches of the bung. A rubber tube passed through a cork which fits the bung-hole, and kept air tight with wax, is then inserted into the bung about two inches, the other end passing into a pail of water to the depth of 3 or 4 inches. This is done to prevent the oxygen of the air penetrating the fermenting mass, and also to retain much of the finer aromatic essences which are so essential to fine flavored wines

A great advantage is also gained thereby in rendering it less necessary to keep watch over the fermentation as pursued by some in keeping the barrel bung full by replenishing with some of the same standing near at hand, which becomes pricked before fermentation has ended, rendering it in the end little more than sweetened vinegar. No admixture should be attempted after fermentation has commenced, and if the temperature of fermentation is kept at about 60° or 65° F., for about six weeks or two months, it will be ready to remove the tube and fill the barrel bung full of the same, made in a separate vessel for that purpose. Then put the bung in moderately tight for a few days, and after that drive the bung in tight until about December, when it must be racked off

from the lees, the barrel rinsed with hot and cold water, and when drained quite dry insert into the bunghole a small cup, suspended by a wire, containing one ounce of spirits of wine or alcohol, ignited, and kept there until the barrel is well fumigated; the bung must not be closed. Then return the wine again and keep it there for three months, when the same process is repeated. If it is done a third time it will be all the better. It is now finished, and can be kept any length of time either in bottles or wood, slowly improving by age.

Grapes may be made into wine in the same way as first mentioned above, with this difference—that when the pumice is to be repressed, that sugar dissolved with grape juice (by heat) must be added to the water that is mixed with the pumice, and to stand a few hours before the second pressing. It must contain the same proportion of sugar and water as is found in the natural juice of the first pressing, all of which is mixed well together and fermented as above. But if

the grapes are left on the vine until they are quite ripe, say until they have received the effects of a white frost, and carefully selected, the good from the bad, and thoroughly pressed and fermented as above, without the addition of either sugar or water, you will have wine that *is* wine. It is true we cannot have so great a quantity of juice, but what there is, is good.

P. S.—The object of the fumigating process is to prevent undue fermentation. The same effect is obtained in putting a 1,000th part of powdered mustard into the wine; but how it acts is unknown.

This article would be incomplete if I omitted to give your numerous readers Pasteur's method of preserving wine indefinitely by heating it to so many degrees; it then possesses all the virtues of old wine. But as this article is lengthy, I will defer it for a future number of *The Horticulturist*.

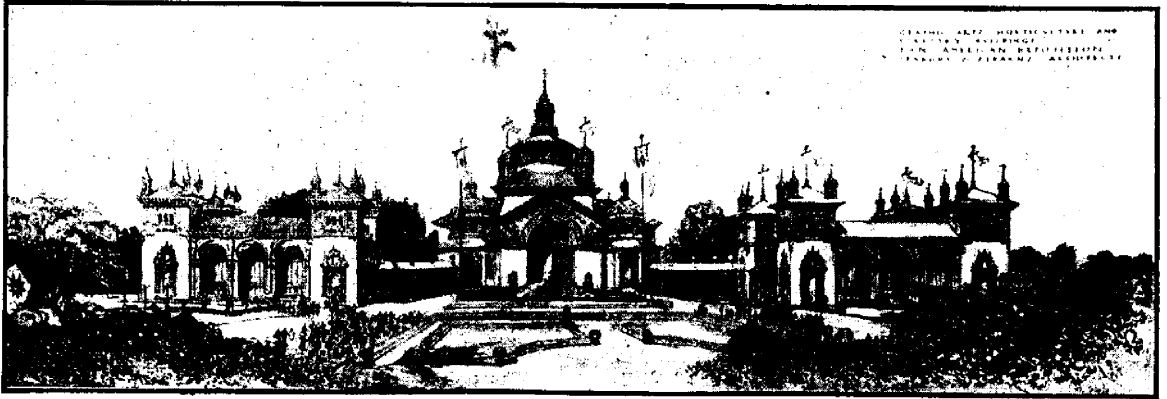
F. W. PORTER.

Mt. Forest, Ont.

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A STANDARD APPLE BARREL.—Believing as we do that the barrel as a package for apples, potatoes, etc., will never pass away, it is most important that the Dominion should settle upon a uniform size—a size that would be acceptable for the whole continent. The present legal apple barrel in Canada is of the following dimensions: Staves, from croe to croe, 27 inches, or about 30 inches long; head, 16½ to 17 inches, as nearly cylindrical as may be. A recent proposed statute to come in force July 1st, 1900, calls for a barrel of nearly the same dimensions, viz: Staves, croe to croe, 27; head, 17; bilge, inside measure, 19. Since this statute was framed the American Apple Shippers' Association have agreed to buy and sell apples in barrels of

which the measurements are as follows: Staves, 28½ inches long; head, 17¼ inches; circumference, or bilge, 64 inches. This barrel will hold only 96.51 imperial quarts, dry measure; while the barrel proposed to be adopted July 1st contains 103 imperial quarts. The United States quarts are smaller than ours, so the former barrel would contain an even hundred of them, and is known there as the one-hundred-quart barrel. The same barrel would hold 174 pounds of potatoes, an important product of Nova Scotia, which that Province would desire to export to the United States. For these and other reasons the Nova Scotians are most anxious for the adoption by the Dominion of the 100-quart barrel.



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## PAN-AMERICAN EXPOSITION, 1901.

**H**ORTICULTURISTS have abundant reason to feel a lively interest in the great Pan-American Exposition to be held in Buffalo in 1901. In the embellishment of the grounds the architects have planned to use trees and shrubs, foliage and flowering plants in quantity to dazzle the lovers of fine horticultural displays. The extensive area of the Exposition grounds affords abundant room for the elaborate pageantry of color that is here contemplated. There are nearly 350 acres in the Exposition site, of which about one-third are the improved lands of Buffalo's beautiful Delaware Park. Upon the park lands many thousands of dollars have been expended from year to year in the past in maintaining and improving the variety and display of rare shrubs and trees. This portion of the landscape includes a park lake of irregular shape. It is charmingly picturesque when the shores are clad in their summer garb of foliage. This part of the park will receive special attention in preparation for the coming Exposition.

Lying directly north of the park lands and upon a higher elevation is the remainder of the Exposition plot. Included in the plan for the arrangement of the buildings is a magnificent court 3,000 feet long, with a

transverse court 1,700 feet from east to west, besides subordinate courts. All of these open spaces are to be beautified with palms and other tropical plants in tubs and vases, placed near the surrounding buildings and beside the fountains and pools. To these will be added sunken gardens of elaborate arrangement, and formal flower beds wherever their presence will enhance the beauty of the courts. The various buildings of the Exposition are to have red-tiled roofs, and the walls are to be tinted in a variety of colors so that the brilliancy of the architectural works will vie with the blossoming beds to fascinate the lovers of fine color effects. Among the flowers and foliage plants will be many sparkling fountains to enliven the beauteous scene. The water features of the Exposition include a grand canal more than one mile in length, which completely encircles the main group of buildings. Lagoons with sodded banks and shaded with a variety of trees shoot off from the main canal at various points and add their beauty to the landscape effect. The entire outer wall of the Exposition grounds is to be a bank of solid foliage. Many thousands of trees, shrubs and cuttings have already been planted in preparation for the elaborate horticultural features. Large trees, which fortunately

were already upon the Exposition site, have been preserved by transference to places where their stately shafts of green would heighten the color effect in contrast with the brighter hues of the buildings.

The building to be devoted to the Department of Horticulture, of which Mr. F. W. Taylor is chief, is 220 feet square. It has two arcaded wings sweeping from the north and south facades to the eastward and connecting with other buildings to form a semi-circular court. West of these arcades are the conservatories, in which will be displayed the palms and other plants of tropical origin. The arcades leading from the main building will be kept gay the entire season with flowering and ornamental plants. The large building will be used for the display of fruits and various other exhibits pertaining to horticulture. It is expected that the state of New York will spend at least \$10,000 in aiding the horticultural societies of the state to extend and replenish their exhibits during the season of the Exposition. The Horticultural Building will be one of the most picturesque of the entire group of large Exposition buildings. The loggias which form the eastern entrance will be richly adorned with frescoes. Two of these compositions will represent Ceres, the goddess of the harvest, bearing in her arms a sheaf of wheat, her chariot drawn by three lions led by Flora and Primavera.

The exhibits to be made by the leading florists of the United States will be situated south of the Horticultural Building. To these displays some six or seven acres of land will be devoted. William Scott, of Buffalo, a prominent florist and well-known contributor to literature upon flowers, will have charge of the floral exhibits. Several prominent horticulturists have already entered for the competition of 1901. In these displays there will be over 500 beds, in which will be shown every popular flower known, from the low-growing verbena to the stately

dahlia and hollyhock. There will be large exhibits of hardy perennial plants, such as Delphinium and Helianthus, Phlox, Tritoma and other leading hardy flowers. Of the hardy annuals there will be many examples of choice varieties that do so well in our summer months. There will be numerous specimens of the summer climbers, conspicuous among which will be the new varieties of the gorgeous Clematis. The water gardens, of which there will be a number in various parts of the grounds, will be important and attractive features which will include in their displays besides the mammoth Victorian Regia of the Amazon and the Nilumbiums of the Nile, many Nymphaeas never before exhibited. When at their best there will be special exhibitions of roses, dahlias, gladiolus, sweet peas, chrysanthemums and other peculiar flowers. Exhibits from all the large growers of the country are assured.

Horticulture has made wonderful strides within a very few years, and many of the floral specimens which will be seen at the Pan-American Exposition were not in existence at the time of the World's Fair at Chicago. The displays of the now popular canna will surpass anything yet seen either in America or Europe. One may therefore confidently expect this Exposition to be, from the view point of the horticulturist, the most brilliant ever held.

The gates of the Exposition will be opened on May 1, 1901, and closed on November 1 of the same year, giving six full months for the enjoyment of the wonderful displays there to be assembled. The buildings of the Exposition comprise more than 20 large architectural works, and the smaller buildings are numbered by the hundred. The largest of the buildings are those devoted to Machinery and Transportation and Manufactures and Liberal Arts, each covering about four acres. The Agricultural Building will cover nearly two acres, and the Electric-

ity Building the same. The Main Government Building is 600 x 130 feet, with a dome 250 feet above the main floor. The lesser buildings of the group are each 150 feet square, connected with the main structure by curved arcades, the three structures enclosing a semi-circular court which opens to the west. The Ethnology Building and the Temple of Music are each to be about 150 feet square. The Stadium, or sporting arena, with the ornamental buildings which forms the entrance, will cover about 10 acres. It will have a seating capacity of 25,000 people, and will contain a quarter-mile track and abundant room for all the modern athletic contests. The live stock display will cover about 10 acres, and to the "Midway," or pleasure ground, about 20 acres have been allotted.

The Electric Tower, which is to stand in a broad aquatic basin, will be 348 feet high, the main portion of the tower being 80 feet

square. The position of the tower is between the Agricultural and Electrical Buildings, dividing the Court of the Fountains from the Plaza, and it will be the centerpiece of the Exposition. It is intended to have the electric displays the most elaborate ever undertaken. The nearness of Niagara Falls makes this possible, on account of the unlimited power developed from the great cataracts and transmitted to Buffalo by means of large copper cables. It is expected that between five and six million dollars will have been expended on the Exposition buildings and grounds before the installation of exhibits begins. The work of preparing for this great, All-American display is proceeding with commendable speed and system, and the plans are such that it will be completed in ample time for the opening of the gates on the date announced.

MARK BENNITT.

THE Bosc pear is rather gaining in favor, especially as a shipper. A writer in the California Fruit Growers' Journal says of it: The Bosc pear will never be a glut in the market, for the reason that the tree grows so crooked and slowly that nurserymen will not grow it. Those who buy trees, says Edwin Hoyt in Rural New Yorker, do not understand that there is as much difference in the habit of growth in trees as there is in animals, and are not willing to pay any more for one tree than another of the same species. If a nurseryman were to bud 1,000 stocks to Bartlett he would, no doubt, get 900 good trees, while if 1,000 stocks were budded to Bosc, he might not get more than 100 good salable trees, and many of these might have to be staked while growing to get the body up straight so as to make a tree a customer would

receive if sent to him. Many nurserymen grow a few Bosc by top-working them, that is, by budding the Bosc in the top of some strong-growing variety like Clapp, Buffum Anjou. To raise the trees this way, the nurseryman has to charge more for them to pay him for his extra trouble. If one wishes to obtain a Bosc pear orchard, the best way to get it is to set Clapp or some strong-growing variety. Let it grow two years, then top-graft it. This, of course, is some trouble and expense to do, yet the one who does it will get a good paying pear orchard, for this variety will never be overproduced. It is a fine pear, a heavy bearer, and usually grows smooth and fair with good feeding and cultivation, such as any orchard should have for profit." Our plan at Maplehurst is to grow Keiffer as stocks and top-graft them with Bosc.



## OUR BOOK TABLE.

**MODERN HOUSE PLANS FOR EVERYBODY.**—For village and country residences, costing from \$250 to \$8,000, including full descriptions and estimates in detail of materials, labor, cost, and many practical suggestions. By S. B. Reed architect. Illustrated, 12mo, pp 243. The Orange Judd Company. Price, postpaid, \$1.

From its first appearance, House Plans for Everybody has occupied the first rank among architectural books. The plans comprise almost every variety of arrangement and style; each one is accompanied by a detailed description of its convenience and construction; and its cost is shown by careful estimates, made to correspond with a uniform standard of prices at present rates. So carefully have the standard features of home buildings been considered in the original edition that there was but little need to change the text, or floor plans. In the matter of outward dress, however, nearly all the elevations have been redrawn, with special regard to modern ideas and tastes and in this respect it is especially invaluable.

**ANNUAL REPORT of the Fruit Growers' Association of Nova Scotia, 1900.** Annual meeting at Wolfville, Jan. 29th, 30th and 31st. S. C. Parker, Secretary, Berwick, N. S.

**THE SAN JOSE SCALE** and other scale insects prepared for the use of fruit growers and scale inspectors by Wm. Lochhead, B. A., M. S., O. A. C. Guelph. This is a most valuable bulletin, well illustrated with original drawings. It may be had free on application to the Ontario Department of Agriculture, Toronto.

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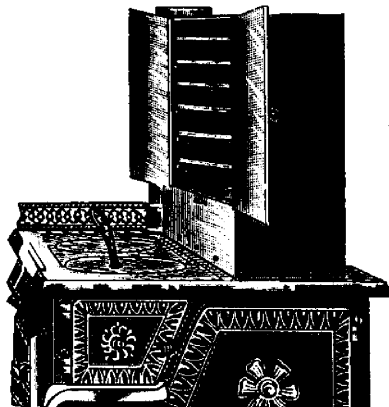
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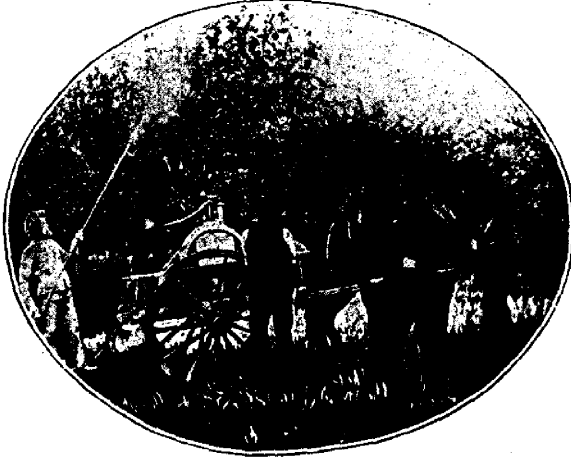
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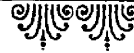
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