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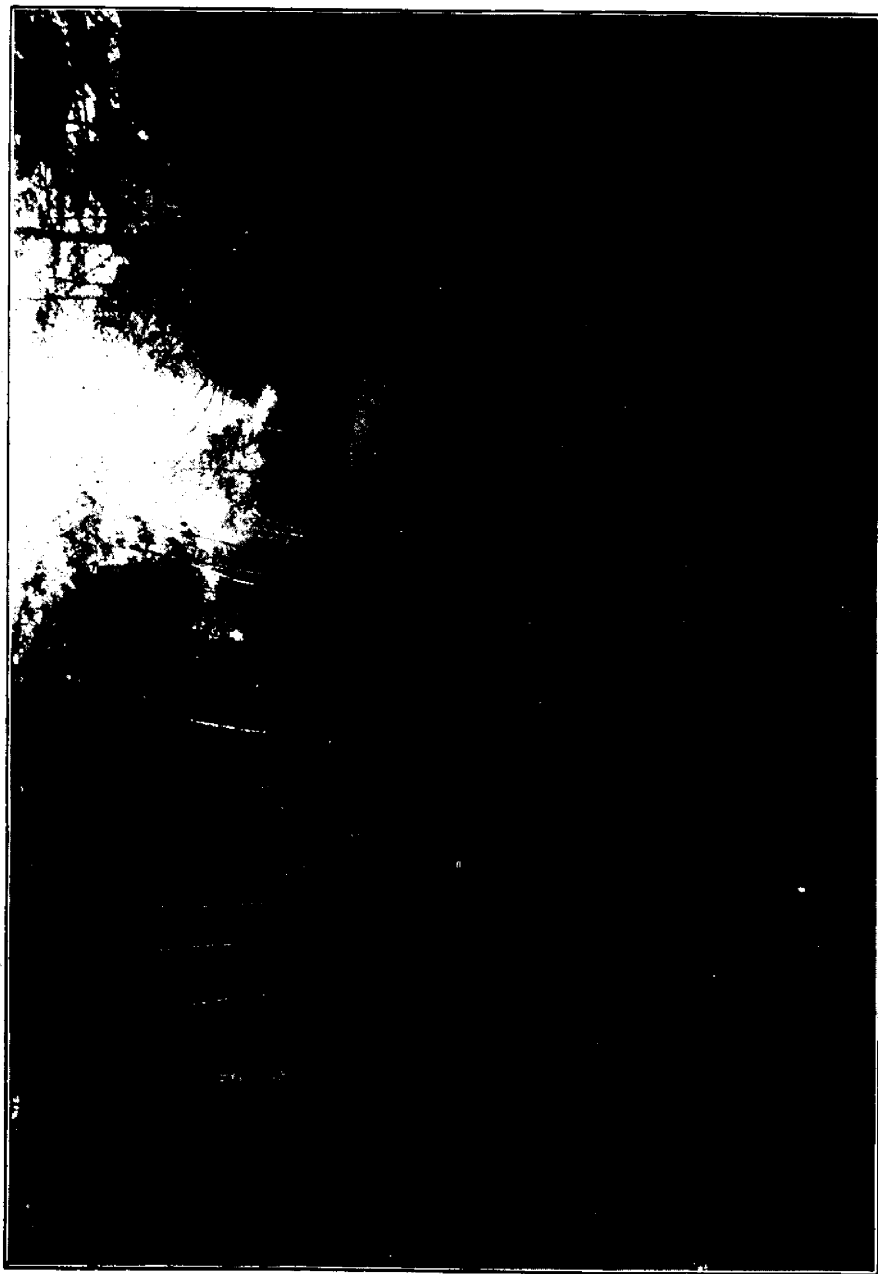
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A MODEL COUNTRY ROAD.

THE CANADIAN HORTICULTURIST.

VOL. XXI.

TORONTO,

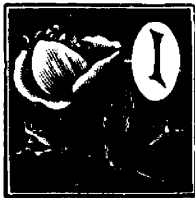
1898.

AUGUST.

No. 8



BETTER ROADS WANTED.



If any class of men in Ontario are interested in good roads, it is the fruit growers, who have the most tender of all products to carry over them. The spring wagon is an excellent aid, but, even with springs, over-ripe peaches

and pears and berries are often half ruined by rough roads before ever they reach the railway station, and it is no wonder that in such cases the returns are so much less than were anticipated. We are making every effort toward better packing and better selecting, but all this will be fruitless without good roads over which to carry our perishable goods.

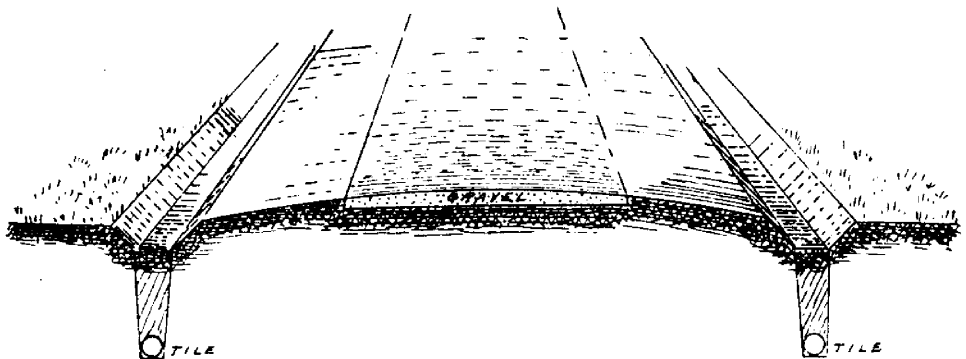


FIG. 1392.—PLAN OF COUNTRY ROAD.

THE CANADIAN HORTICULTURIST.

In the words of Mr. A. W. Campbell, Provincial Instructor Roadmaking, we ask :

Do we actually want good roads? Or are bad roads preferable? Is the cry that has been raised throughout the length and breadth of Canada and of this continent: "We want good roads," the demand of men in their sober senses? Or has labor and money been placed on our roads for a century past merely to fill in time, and keep our surplus capital in circulation. If we do not want good roads, if bad roads are preferable, why should we want roads at all?

mud, is plowed under within a year and wasted. A good road is an economical road.

In building an economical road, improvements must be made in such a way that they will last. Roads in Ontario have been built on the same principle as is a wagon which breaks down under the first load, and is used for firewood after a year of service. Most of the leading roads of Ontario have been made and remade a score of times and are still bad roads. They are of the kind that "break up." A road that "breaks up," like anything else that breaks up, is a poor investment. When road building is rightly understood in this country, township councillors will no more think of building roads that will

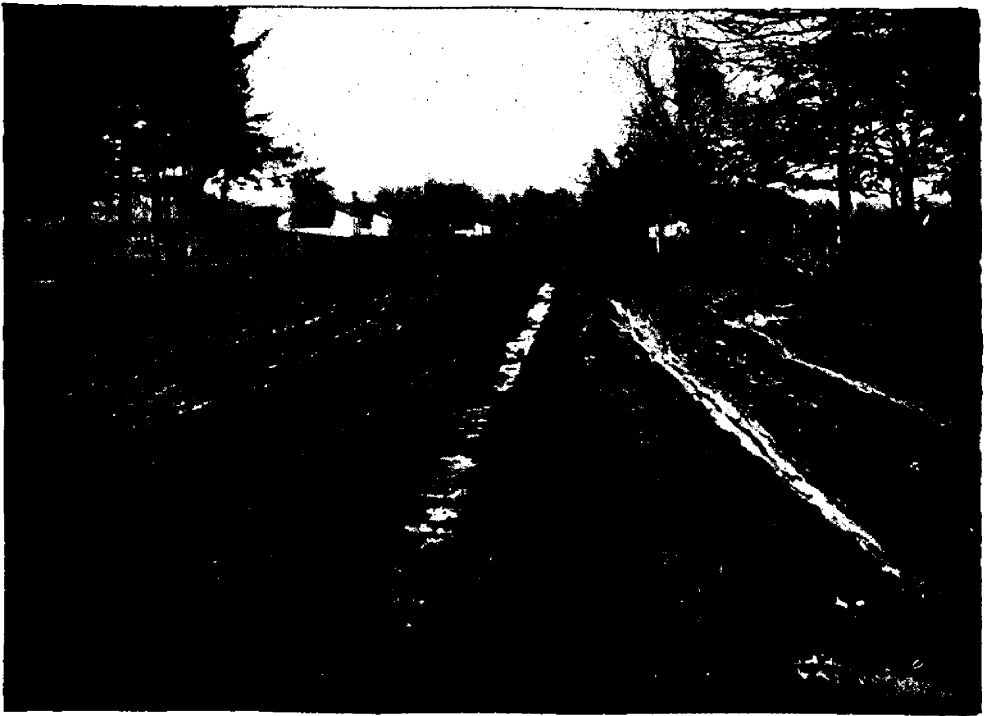


FIG. 1393 —A COUNTRY ROAD AS IT SHOULD NOT BE.

We must have roads. That necessity having been placed upon us, the experience which has taught us the wisdom of building other structures substantially, teaches us the economy of having roads that are good. We want roads which will withstand wear. We want the labor and money spent on them to be a paying investment. We want roads which will be good no matter what the state of the weather. We want roads which will not become rutted immediately the fall rains come on or when the frost leaves the ground in the spring, remaining in rough ridges for a considerable part of the summer. A road which does this is a bad road. The money and labor spent on it is largely forced down into the

break up in the spring than they will think of constructing houses that break up in the spring, barns that break up in the spring, or fences that break up in the spring

The road builders of this country have not given sufficient consideration to the effect of building bad roads. Year after year work of a flimsy, shiftless character is placed on the roads. The results are only temporary and are destroyed by a very little wear and traffic. In a very short time the work has to be done over again. But the evil does not end with this. This annual demand for repairs is so great that no township can respond to it. The roads instead of being repaired when

BETTER ROADS WANTED.

they need it are neglected, grow worse and worse, and all the evils of bad roads follow.

What bad roads are doing for this country is only one side of the evil. The other side is what they are not doing. The loss does not arise to much from the money and labor wasted every year as it does from the absence of the benefits which good roads would bring. Our loss must be measured not so much by the money and labor we are throwing away on bad roads, as by the opportunities which would come to us if the roads were good.

One of the greatest obstacles in the way of road improvement is the narrow view taken of the question by so many citizens of this country. They have been accustomed to think of roads merely as incidental to statute labor; and statute labor they consider as a means whereby each pathmaster can get a little work done in front of his own farm which will be of direct personal advantage.

They do not see nor appreciate the benefits which would accrue to the township, county and province. They overlook the public good. But public good is merely individual benefit conferred on every citizen. Money and labor spent on the roads of the township will enhance the value of every farm by increasing the demand for farm land; it will increase the profits of the farm by reducing the expenses of the farm. The dairying industry would be immensely benefitted by good roads, fruit growing would become more remunerative; sale would be obtained for products which now are not grown because the market cannot be reached easily and quickly.

Regarding country roads, he continues:

It would seem as though in everything the present methods in regard to roads in Ontario are contrary to good judgment. Gravel or broken stone is dumped loosely, without even spreading, on a badly graded, badly drained sub-soil. In the use of these roads the same recklessness is glaringly apparent. When wide tires have universally replaced the nar-

row tires which are now found on farm wagons, a great part of the road question will be solved. Narrow tires of two and one-half inches in width have only one-half of the bearing on the road which would be provided by tires of proper width. By referring to the supporting power of soils discussed in the paragraph on "Foundations," the effect of this is more apparent. By the use of a six inch tire, the roadway will support, without yielding, twice the load which it could support with a three inch tire.

Narrow tires cannot be too strongly condemned. They cut and grind the road, plow and upheave it. Wide tires, on the contrary, are a benefit rather than an injury to the road, inasmuch as they act as rollers to preserve a smooth, hard surface. In some localities wide tires are objected to under the argument that they increase the draft required to move the load. This may occur under certain occasional conditions of very wet and soft roads. But when wide tires are universally used this objection will disappear, as the increased draft is due to the ruts and mud caused by narrow tires.

DIMENSIONS OF ROADS.

For the average country road, a graded roadway twenty-four feet in width between the inside edges of the open drains, will be ample to accommodate travel. For the average road, if the central eight feet is metalled with gravel or broken stone, it will be sufficient. (See Fig. 1392 "Plan of Country Road.") The depth and width of the open drains will have to be governed by circumstances. Sufficient capacity must be provided to carry away all surface water. The depth must be dependent also on the fall obtainable. With tile under-drains, deep open ditches are not needed to drain the road foundation. The use of tile does away with the deep and dangerous open ditches which may otherwise be necessary. The crown of the road should be such as to give a fall of one inch to the foot from the centre to the edge of the ditch.

GORMLEY'S SEEDLING CHERRY.—On page 317, volume 20, we referred to this cherry as being of great promise. To-day, July 12th, we have received another sample lot and consider them even superior to those received a year ago. Being of Canadian origin, no doubt the tree is very hardy, and would succeed over a wide extent of country. The color is bright red like the Montmorency, the form about that of the English Morello, and the flesh like that of a Bigarreau, not very juicy; it parts

easily from pit, without dropping its juice, flesh yellowish, a wonderful keeper, and therefore a good variety for distant shipments. Mr. Gormley writes:

"This is a seedling cherry tree about 25 years old. I remember the tree coming up in a fence corner. It has never had any care, but has grown well under neglect. I want to know if it is a recognized variety, for if it is new it is very valuable, as the quality cannot be excelled and it bears every year."

GOOSEBERRY GROWING IN ONTARIO.



FIG. 1394.—SPRAY OF "LORD DUFFERIN," GOOSEBERRIES

SIR.—I am sending you by this mail a sample of gooseberries. I don't know the name of them. I should like you to tell me the name of them if you can, in your next month's journal; also say if you think they are well grown. 13 weighs one-half pound; these are some of the largest, but the average berry weighs over $\frac{1}{2}$ oz. each. The tree mildews. Can you give a cure for it? I should also like to see an article in your journal on red currants, as to the pruning of them. I have some good ones but they grow long branches, not suckers; they grow so long in a season that they break off with the least touch. Would it hurt them to cut them back some this month, so as to give them more strength at the joint? I like your journal very well. Oblige,

Yours truly,
R. C. VAUSE.

The gooseberries sent us by Mr. Vause resemble Whitesmith, but if of that variety they are of unusually fine size. We believe there is money in

gooseberries of this size wherever the soil and climate is suitable.

The sandy soil of the Niagara district does not suit them; we cannot advise growers in such locations to undertake them with an eye to profit. Even the Downing and the Pearl, which, under favorable circumstances are the most productive of all varieties with us in Canada, are often only second-rate in productiveness on light dry soils, for want of vigor of plant; and even in seasons of great fruitfulness, when the Pearl and Downing bushes are literally loaded to the ground with their weight of fruit, we have seen the whole crop ruined by sun scald. This has been the case two years in succession at Grimsby, in Mr. Mc-

GOOSEBERRY GROWING IN ONTARIO.

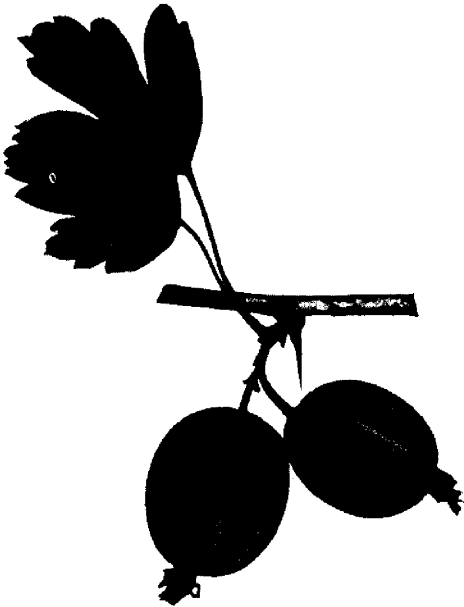


FIG. 1395.—“PEARL.” REDUCED $\frac{1}{2}$.

Kinnon's fruit garden. He has the finest acre of Pearl gooseberries we have ever seen, under the very best of cultivation and fertility, and for two years past his bushes have been a marvel of fruitfulness, but both seasons he has lost the fruit from sun scald about July 1st, just before he was prepared to harvest them. He is so discouraged that he has resolved to root them out entirely.

We do not see that there is any money in growing any of the smaller varieties of gooseberries for profit unless prices

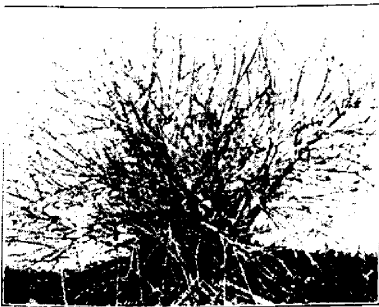


FIG. 1396.—“INDUSTRY” BEFORE PRUNING.

improve ; but, as we said at the outset, if any one has the location for growing the large varieties, there would no doubt be some money in them.

A moist clay soil with good drainage, and a northern aspect, is, we believe, the ideal place to grow gooseberries ; and if any reader has such a place, we advise trying Whitesmith, Lord Dufferin, Crown Bob, and Industry. Our foreman grows Lord Dufferin in such location, and has excellent success. Our illustration of this berry is taken from a branch grown by him in 1897, on the northside of the Niagara Escarpment, on moist heavy clay, with nature's drainage.

The gooseberry needs plenty of manure for best results, and no one should make the mistake of supposing that shade is an advantage. Because the



FIG. 1397.—“INDUSTRY” AFTER PRUNING.

gooseberry and the currant will succeed in shade better than most other fruits, many people consider it a benefit, but this is a mistake, for the best results can only be secured in the open air.

For pruning the gooseberry the best season is the winter, because it is then easier to see what wood ought to be removed. Fine gooseberries can only be had by thorough attention to this work, which consists in thinning out about half of the old wood each year.

THE CANADIAN HORTICULTURIST.

In illustration we show Fig. 1396 an industry gooseberry bush before pruning, and in Fig. 1397 the same after pruning. These two illustrations are from bulletin of Geneva Experiment Station.

Mr. S. Spillett, of Nantyr, writes: I send you a pail of each variety of gooseberries that have borne that much this year. I never had such small Downings and Pearls. The severe scorching they got last year with mildew seems to have affected the vitality of the bushes.

For big berries Crosby leaves nothing to be desired. Autocrat also has done well.

Mr. F. W. Porter, of Mount Forrest, writes:

Although this is the worst season for Gooseberries I have seen for many years, what with spring frosts and the Aphis they are in a bad condition, still I think I can give you some fair samples of Whitesmith, but as we are later here than with you they had better be left on the bushes awhile longer to let them swell up. I had to cut my Industries down to the ground. The more tender Raspberries were killed in this neighborhood.

THE GRAPE LEAF HOPPER.

THE grape leaf-hoppers pass the winter in the adult state, hibernating under dead leaves or other rubbish, the survivors becoming active in spring, when they insert their eggs in punctures in the leaves of the vine. The yellow nymphs are hatched from these eggs during the month of June, and they resemble their parents except in size, and having no wings. During their growth, they shed their skins (which are nearly white) several times, and although exceedingly delicate and gossamer-like, the empty skins remain for some time attached to the leaves in a very life-like attitude. The nymphs feed together on the under sides of the leaves, and are very quick in their movements, hopping briskly about by means of their hind legs, which are especially fitted for this purpose. They have a peculiar habit of running sideways, and when they see that they are observed upon one side of a leaf, they will often dodge quickly around to the other. Each is furnished with a sharp beak or proboscis, with which it punctures the skin of the leaf, and then sucks out the sap; this produces yellowish or brownish spots on the upper surface. At first these spots are small and do not attract much attention; but as the insects increase in size, the spots often involve the whole leaf, which ap-

pears as though scorched, and often drops from the vine. Occasionally, vines become so far defoliated that the fruit fails to ripen. As the nymphs grow, diminutive wings appear, which gradually develop into the mature wings of the adult. With the full growth of its wings, it acquires such power of flight that it readily flies from vine to vine, and thus spreads itself in all directions. It continues its mischievous work until late in the season, when it seeks shelter for the winter.

The Clinton, Delaware, and other thin-leaved varieties suffer more from the attacks of these leaf-hoppers than do the thick leaved sorts like the Concord. These insects are sometimes quite abundant in a vineyard one year, and comparatively scarce the next. Their preservation, doubtless, depends much on favorable hibernating conditions. One should not wait until late in the season when the leaf-hoppers are full-grown and can fly, before beginning active warfare against them. When young nymphs, they can only hop about, and are also more susceptible to insecticides. As they suck their food from the interior of the leaves, the poisons can have no effect upon them.

Kerosene emulsion, thoroughly applied to the undersides of the leaves about July 1st, will check this pest.—R. N. Y.

WOODSTOCK HORTICULTURAL SOCIETY.

SIR,—In response to your request for some sketches of prominent members of our Society, with views of their homes and gardens, I send you one of Mr. T. H. Parker, and his home, together with a sketch of his life, kindly written up by Mr. R. W. Sawtell.

Yours truly,

JAS. S. SCARFF.

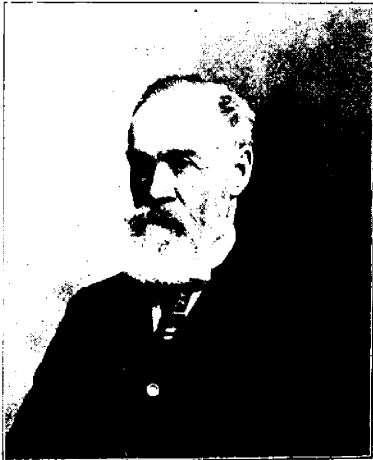


FIG. 1398.—MR. THOS. HARRISON PARKER.

The subject of this sketch was born in Cumberland, England, on the 10th day of February, 1828, and came to Canada, with his parents in 1831. His father settled on a farm and engaged in the lumber business, near Peterborough, where he remained 15 years. During that period this son worked with him, going occasionally to a school in the neighborhood. In 1846 the family moved to the County of Oxford and purchased a farm on the 16th con. of East Zorra.

Two years thereafter Thomas left home and returned to Peterborough, where he engaged in the lumber business, at a saw-mill on the river Otonabee. In the winter he attended the Grammar school of Rev. Mr. Taylor, an eminent scholar, and while here a desire for mercantile life possessed him. He fortunately found an opening in a large dry goods establishment in Brantford, where he apprenticed himself, and for further experience entered a larger house in Hamilton. With the drill and experience of five years' steady labor in two such houses, he felt equal to the task of managing a business for himself, and selected Woodstock as the centre of his labors. The choice was well made. There was but little competition, and with his energy the business prospered from the beginning. At the end of the first year he admitted into partnership Mr. J. D. Hood, an experienced book-keeper

from England—whose sister he subsequently married.

The firm of "Parker & Hood" was known in every household in the county, and beyond. It was also well known and trusted in the English markets, where one of the firm went annually to purchase supplies, and they were the first direct importers here. Such was their phenomenal success, that in eighteen years (1873) they sold their business, and each retired with a competency. But after such an active life, neither could long remain idle. Mr. Hood became the efficient Town Treasurer (and died some years ago), and Mr. Parker opened an office for insurance brokerage and private banking. He now owns a large number of buildings here, which together with other matters, keep him still in harness.

Mr. Parker has travelled a great deal, both on this continent and in the older countries; hence has been always well informed in business matters—as well as of things beautiful. His general knowledge and systematic methods have made him a valued citizen in public matters, and but few, if any, public enterprises have failed to benefit by his counsel and financial help.

In the P. D. and L. H. R. R. he took a deep interest and was a large stock and bondholder. In the Board of Trade, Mechanics' Institute, Agricultural and Horticultural societies, Loan companies Hospital and kindred institutions, he has held office and rendered personal service. As early as 1861 he represented his ward in the Town Council, and later, as first and second Deputy Reeve, and in 1878 and 1879, as Mayor of the town.

The special reason for writing this sketch, however, is to show his love and long-continued interest in Horticulture and Floriculture. Vausittart Avenue, in this town, is now acknowledged to be one of the most beautiful in the Province, for its length. It is 132 feet wide and nearly a mile in length, with a double row of maples on each side the roadway, under whose arching branches a concrete sidewalk extends, making beautifully shaded promenades to the small shaded parks, and a cross street of similar width. At the north end of the avenue three public cemeteries are situated, and their well kept lawns, plots and trees attract many visitors.

When Mr. Parker first selected two half-acre lots on this street, it was not considered a fashionable locality, and but few dwellings of the better class thereon. He erected the building, which is represented at the head of this sketch, and laid out the whole space in lawn, shrubberies, hedges, fruit and kitchen gardens, in an artistic style, and for more than twenty five years it was unequalled either in convenience or beauty; and there are very few of the modern and up-to-date residences in the town which surpass it now.

As an amateur flower and fruit grower, Mr.

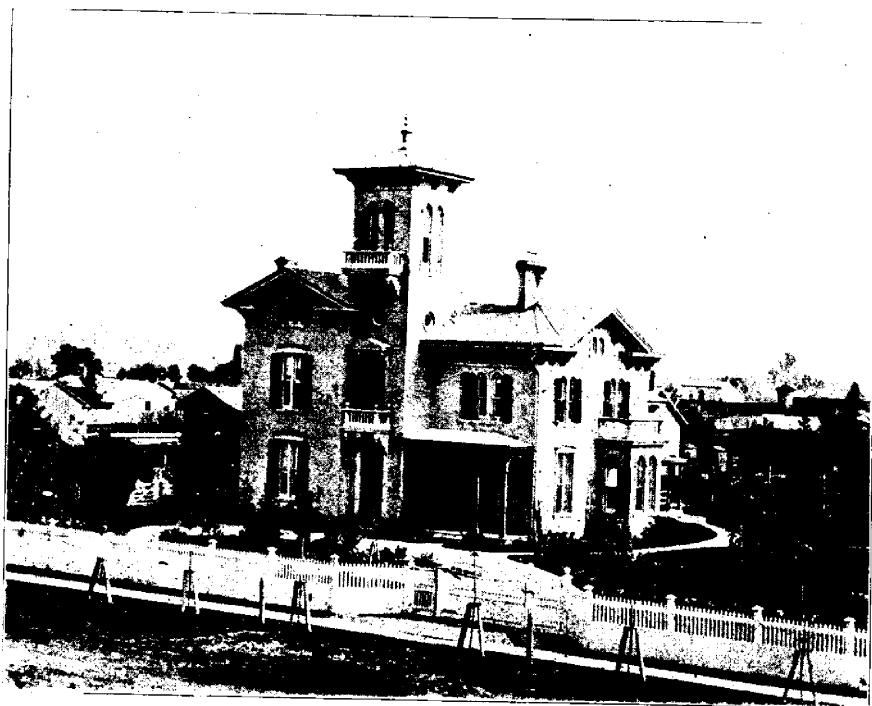


FIG. 1309 -- RESIDENCE OF MR. T. H. PARKER.

Parker has always excelled, and even in competition with professional gardeners, he has many times secured the first prizes at the Provincial and other exhibitions. At the World's Fair in 1876, he secured a bronze medal and diploma for fruit. He also succeeded in the same at the Intercolonial in London, England, and many other places testify, in medals and diplomas, to his skill. Our local exhibitions would seem incomplete without a display of grapes from the green-

house and out-door vines of T. H. Parker. In the vegetable garden his success has been also marked, especially in early potatoes, which for many years he succeeded in having first.

Though bordering on the three-score-and-ten limit, Mr. Parker is still deeply interested in Horticulture, holds a seat at the board of the local society and takes part at all its meetings.

CALIFORNIA CHERRIES — These are among the most tempting fruits now displayed in our markets. They are seen on every fruit stand, as well as in the fancy fruit stores, and many of the push-carts are loaded with them exclusively. They are very large, packed in flat cases in regular rows, not a stem in sight, though the cherries are picked with the stems on. The very attractive appearance is enough to sell them. The push-cart men sell these cherries for five cents

per one half pound, and each displays a large sign to that effect; but I have noticed that many of them have it all in large letters but the $\frac{1}{2}$, so that any one reading a little carelessly might get the idea that the cherries are five cents a pound. This is a familiar trick of these fellows. As they sell for about the regular wholesale price, it is probable that they get their profit by giving short weight.—R. N. Y.

THE EXPORT OF OUR TENDER FRUIT.

A GAIN this question is at the front, and very soon some further experimental shipments will be sent forward. It is plain that the time has come when we must export our fruit or give up the business, for we are producing more fruit than Canada can consume. Then when we succeed in reaching a foreign market with our peaches and pears, we must study the best export varieties and plant extensively those kinds. This may entirely revolutionize an orchard, but it will bring success.

sary that a suitable package should be used. It should be (1) strong enough to provide for safe carriage; (2) so constructed as to provide for thorough ventilation; (3) cheap; and (4) of a size convenient for handling. No one package is suitable for all kinds of fruit; but the package for the carriage of every sort of fruit should meet these requirements. Each package of fruit, if thoroughly closed at a warm temperature, becomes practically a generator of heat, like a slow-burning stove; hence the need of openings for ventilation that the

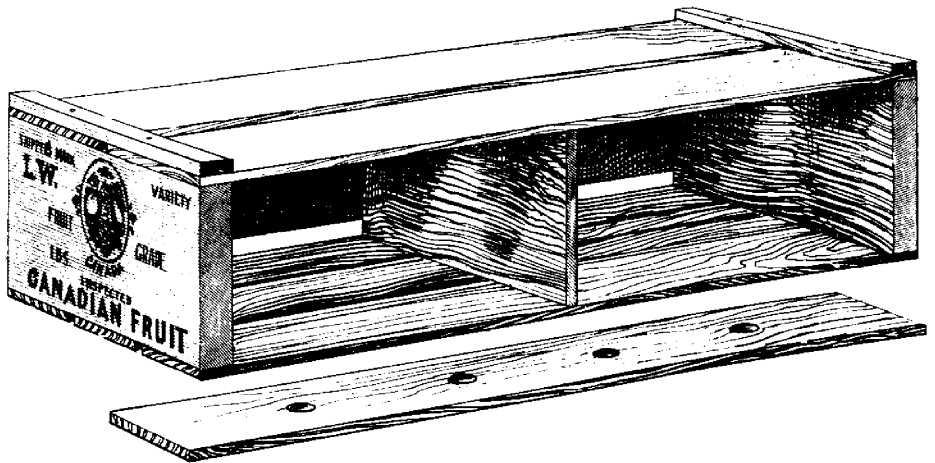


FIG. 1400.—

We have just received the report of the Commission of Agriculture, Prof. J. W. Robertson, in which he reviews the work of the past year in the dairy, live stock and fruit interests. In the section devoted to this latter he reviews the work of the year 1897 in experimental fruit shipments to Great Britain, and then draws the following general conclusions:—

PACKAGES.

The value of tender fruits in Great Britain depends chiefly upon their condition. To ensure the preservation of their condition at its best, it is neces-

cold air may have a chance to cool the fruit.

The following cuts illustrate the packages which are recommended for use in the shipment of pears, peaches and tomatoes to Great Britain:—

Fig. 1400 shows the case with one side off.

Fruit is to be packed from the side of the case. After it is filled, the side is to be put on in such a way as to hold the fruit firmly, but not to bruise it.

The following are the dimensions of the case, in side measurement:—

Length, 22 inches; width, $11\frac{1}{4}$

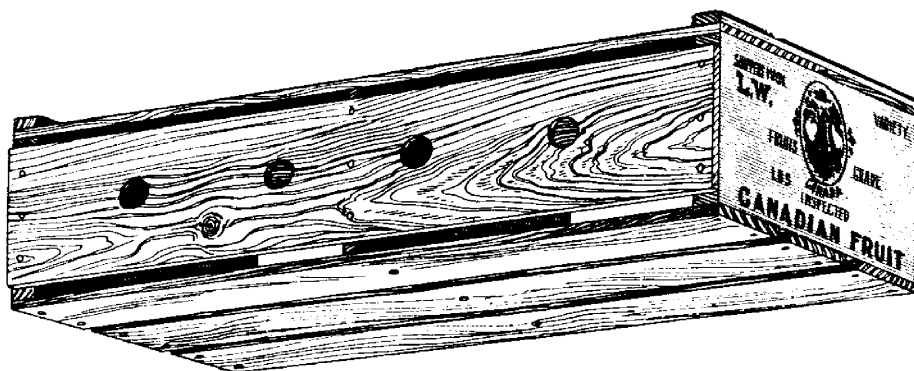


FIG. 1401 —

inches; depth, $4\frac{1}{2}$, 5 or 6 inches, according to the size and kind of fruit to be packed.

The top, sides and bottom of the case are made of lumber $\frac{1}{4}$ of an inch thick, planed on the outside. The top and bottom pieces are put on, leaving $\frac{1}{4}$ of an inch space between them as openings for ventilation. The side pieces are $\frac{1}{2}$ inch narrower than the inside depth of the box. That permits ventilation at all four edges of the case.

Each side piece has four holes for further ventilation.

The end pieces are $\frac{7}{8}$ of an inch thick, planed on both sides; and the centre piece is half an inch thick, also planed on both sides.

The cleats at both ends of the top are $\frac{1}{2}$ an inch thick by $\frac{7}{8}$ of an inch wide. They keep the cases apart when they are stowed one on top of another.

The pieces of the top of the case are fastened to these cleats before they are nailed to the end-boards and centre-board.

Fig. 1401 shows the case lying bottom upwards, and illustrates the openings for ventilation.

PACKING.

It is essential that the fruit should be picked at the proper condition as to

ripeness. When pears are full grown they appear to ripen so as to yield a better flavor when ripened *off* than when ripened *on* the tree. Care should be taken in the handling of all tender fruits to prevent bruising. The sorting and wrapping should be done in such a way as to involve the least possible handling of the fruit. If the fruit can be cooled before it is sorted and wrapped, so much the less will be the risk of injury.

The packing of the fruit should be done in such a way as to keep it firm in the package. An excess of packing, in so far as that prevents circulation of air, is objectionable. Some kinds of packing are liable to become mouldy from the dampness caused by evaporation from the fruit. Paper and excelsior packing are of that sort.

Only such fruits should be packed as are sound, of regular shape, and of fairly large size. Tomatoes are the exception in the matter of size. Medium and small-sized tomatoes sell for about one-half more per case than large-sized tomatoes.

COOLING.

All tender or soft varieties of fruit should be cooled as quickly after they are picked as is practicable. For long keeping, they should be cooled to a

THE EXPORT OF OUR TENDER FRUIT.

temperature below 36° and 40° Fahr., as warm fruit generates heat by the changes which proceed in it. It is thus much more difficult to cool than inert products, such as meat, etc. If the fruit can be even partly cooled before it is wrapped, the risk of spoiling will be lessened to that extent.

Packages containing warm fruit should never be loaded close in a railway car in warm weather. If a refrigerator car be used, well iced, the generation of heat in cases of warm fruit will more than counter-balance the cooling power of the ice. The fruit will continue to ripen, and decay will begin.

APPLES.

Early ripening and soft varieties of apples should be packed in ventilated barrels or boxes, and sent in cold storage. Otherwise, a large proportion of them are likely to arrive in a slack and wet condition and to be sold for a price which can entail only loss.

A report was made to me by Mr. Arthur R. Fowler, of Montreal, agent for Messrs. Garcia, Jacobs and & Co., on two shipments of early apples sent by him in August. The two shipments were from one lot of apples from the same section in Western Ontario. So far as Mr. Fowler knew, the apples in each of the two shipments were similar as to variety, condition when packed, and manner of packing. That is to say, the one lot of apples, received from a place in Western Ontario, was divided into two shipments, without particular selection. One of these shipments, containing 267 barrels, was shipped on the steamship "Kastalia" to Glasgow in cold storage on 26th August. The apples of this shipment were reported as being delivered all in

good condition, and were sold at an average price of 18s. per barrel, which netted \$2.45 in Western Ontario. The other shipment, consisting of 325 barrels, was sent forward as ordinary cargo to Liverpool. The apples of this shipment were reported as being delivered in an unsatisfactory condition: 124 barrels were reported "wet" or "slightly wet," and 81 barrels as "slack." Thus 63 per cent of the shipment, sent as ordinary cargo, were landed in a damaged condition. The whole shipment was sold at an average price of 8s. per barrel, which netted 75 cents per barrel in Western Ontario. Evidently the wet and slack condition of the apples when delivered from the steamship, was due not to the kind of fruit or the manner of packing, but to the fact that they had been heated during transit, and were greatly damaged in consequence.

It is therefore evident that for the carriage of early and soft apples, cold storage is necessary to ensure good condition and reasonably good returns to the shippers.

The later and firmer varieties of apples can be shipped safely if cooled below 50° Fahr., packed in ventilated barrels, and carried in the holds of steamships provided with air ducts for causing thorough ventilation. The cold air should be conveyed to the bottoms of the holds, perhaps in a manner similar to air shafts for carrying cold air to the stokers; and fans should be used for sucking the warm air out. If these were used mainly during the night only, the holds could be kept sufficiently cold to land apples entirely undamaged by their transit across the ocean.

The following table shows the quantity and value of apples imported by Great Britain, year ending 31st December, 1896.

THE CANADIAN HORTICULTURIST.

From.	Quantity.	Value.
	Bushels.	\$
Australasia.....	158,652	393,543
Canada.....	2,642,168	3,145,141
Other British Possessions.....	13,483	18,503
United States.....	2,614,389	3,271,582
Germany.....	14,470	19,472
Holland.....	52,005	67,968
Belgium.....	311,418	336,365
France.....	216,765	255,081
Portugal.....	146,012	181,697
Other Foreign Countries.....	7,594	12,123
Total.....	6,176,956	7,701,475

Table showing average prices realized per barrel for the following varieties of Canadian apples, sold in Great Britain, season 1897.

Varieties.	Average L. Price.		Average H. Price.	
	s.	d.	s.	d.
Alexanders.....	8	7	15	5
Baldwins.....	15	4	20	6
Ben Davis.....	16	0	18	6
Blenheim Pippins.....	16	0	20	0
Blush Pippins.....	10	0	14	9
Colverts.....	10	4	14	5
Cranberry.....	20	9	23	0
Duchess.....	19	0		
Fallwaters.....	20	0	24	0
Golden Russett.....	15	10	18	11
Greenings.....	15	0	17	0
Jennettings.....	4	4	8	8
Kings.....	22	4	26	11
Maiden Blush.....	8	10	12	6
Phoenix.....	14	6	18	3
Ribston.....	13	3	16	6
Snows.....	7	5	14	8
Spys.....	14	8	21	7
St. Lawrence.....	3	6	7	10
Wealthy.....	7	3	15	9

PEARS.

Less attention is paid in Great Britain to the variety of pears than to the soundness and nice appearance of the fruit. Pears of a typical and regular shape are wanted, and from a medium to a large size.

From the trial shipments it appears that a large trade can be created at

prices which will be remunerative to the growers here.

The following table shows the quantity and value of pears imported by Great Britain, year ending 31st December, 1896.

From	Bush.	Value.
	Quantity.	\$.
British Possessions.....	11,916	24,333
United States.....	37,712	112,502
Holland.....	47,717	68,941
Belgium.....	143,499	182,485
France.....	239,295	606,792
Other Foreign Countries.....	3,684	7,760
Total.....	483,823	1,005,813

PEACHES.

Tender varieties of peaches, such as Crawfords, can be shipped with safety only when the fruit is picked in a firm condition, and cooled to a temperature of under 40 degrees soon thereafter. If packed in cases such as shown at figures 1 and 2, and carried at a low temperature, it appears practicable to send peaches safely to Great Britain. Their arrival in first-rate condition will doubtless create a demand for them; but the shipment of them will always be more difficult to carry on successfully than that of apples and pears.

TOMATOES.

Tomatoes can be shipped safely. The price that may be obtained regularly will depend so much on the supplies available from other countries that no safe estimate can be made. A large supply of tomatoes for Great Britain is received from Teneriffe, Canary Island, the Channel Islands and France.

Those varieties which are of medium size, smooth and regular in shape, solid, with small seeds cavities, sell for the highest prices. In the trial shipments last year, tomatoes of small size were

THE EXPORT OF OUR TENDER FRUIT.

sold at 9s. 4d. per case, when tomatoes of large size at the same time sold for only 6s. 8d. per case.

The varieties recommended for shipment to Great Britain by Mr. John Craig, late Horticulturist at the Experimental Farm, Ottawa, are :—"Livingston's Beauty, Favourite, (Livingston), Early Ruby, (sometimes irregular) Ignotum, Long Keeper (Thorburn), Stone (Livingston), Liberty Bell and Cook's Favourite. Dwarf Champion is a smooth, desirable sort, but not very productive."

Fruit intended for Great Britain should be picked when fully grown and when beginning to change colour. If provision has not been made for the carriage of it in cold storage, the fruit should be picked and packed when of full size, but while still a green colour and well glazed.

Only sound, smooth tomatoes should be selected. They should be carefully picked, so as to be free from bruises; and they should be graded in size, with regard to their characteristic colour when matured. Scarlet and purplish-red varieties should not be packed together in the same case.

Each tomato should be wrapped in tissue paper, or in a light, cheap grade of printer's paper. They should be carefully packed stem end down, so that each one will be held firmly in place when the case is closed.

PLUMS.

It is doubtful whether a profitable trade can be development in the shipment of plums from Canada.

The following table shows the quantity and value of plums imported by Great Britain, year ending 31st December, 1896.

From	Quantity.	Value.
	Bush	\$.
British Possessions.....	958	11,937
United States	2,729	15,388
Germany	154,620	200,166
Holland	76,554	100,409
Belgium	78,571	117,438
France	246,773	731,114
Other Foreign Countries	40	221
Total.....		

GRAPES.

The following table shows the quantity and value of grapes imported by Great Britain, year ending 31st December, 1896.

From	Quantity.	Value.
	Bush	\$.
Channel Islands.....	49,390	499,237
Other British Possessions	9,812	32,777
Belgium	12,531	75,560
Portugal	126,122	154,162
Spain	677,196	1,362,137
Other Foreign Countries	3,766	31,223
Total.....	883,244	2,155,096

From the quotations from letters of those to whom Canadian grapes were shipped last season, it is evident that there is not yet a demand for them in Great Britain. It may be possible to cultivate a taste for them, and thus to create a demand which may lead to a profitable trade. I do not think it will pay to send the early ripening sorts of grapes. They should be thoroughly ripened before they are taken from the vines. Trial shipments of different varieties are to be made again in the season of 1898, and until further information has been gained I am not able to make any recommendations on the subject.

FINE JESSIE STRAWBERRIES.

SIR,—I write to tell your readers of my great success with the Jessie strawberry. I had one specimen weighing $1\frac{1}{4}$ ounces and a number of one ounce and over, and measuring five to six inches in circumference. I have only one other kind to compare them with, that is the Gandy, and the Jessie can beat them more than double both in size and quantity. I am more astonished at this as in the test at Guelph the Jessie is put down at 88, while the Gandy is 69 and 19 respectively for 1896-1897.

Now I and perhaps many others of your readers are anxious to get the best. Can you tell us what they are, and where they are to be obtained? I see a Mr. C. S. Pratt of Reading, Mass., says the Clyde, Glen Mary and Sample are the best; do you endorse that statement? Can the Woolverton, Ruby, Wm. Belt, Haverland, Tennessee, Prolific, or any of them be obtained and where?

Yours Respectfully,

L. FAIRBANKS.

Whitby.

With reference to Mr. Fairbanks' experience with the Gandy and Jessie strawberries as compared with ours here, I may say this is but another evidence of the proof of the statement that every fruitgrower must to a certain extent be an experimenter for himself. Varieties differ so much in different soils and sections that no one experiment will answer for all. At an experiment station like this we can by repeated tests with all the varieties that can be obtained narrow down the list to a few of the leading varieties. By following up the tests with these varieties on their own soils growers may easily find out just what would be best for their particular soil and section.

In looking over the records I find that the Gandy, while not quite so large on the average as the Jessie, yet has given quite a bit larger yield for three years in succession.

We have given no attention to the weighing of individual berries, but think we would have no difficulty in beating Mr. Fairbank's record with some of our specimens of Marshall, Woolverton, Mammoth and a number of others.

As to what are our best varieties, it is rather early yet to include this year's results in making up an average of three years, as some of our latest varieties have not yet reached their midseason, but taking an average of the results of the past two years Van Deman easily ranks as our best early variety. Saunders, Stone's Early, Warfield and Haverland, in the order named have been the most productive. Nearly all these, however, have their weak points. Van Deman is valuable as a beautiful, fair-sized, very early berry, but the plant lacks sufficient vigor to mature the late settings of berries. Saunders is a first-class all round berry, late, large and firm, plant prolific, healthy and vigorous. Stone's "Early" is not early, and the berry lacks size and firmness. Its most valuable quality is its productiveness. Warfield, on account of its firmness and dark rich color is one of the best canning varieties, and in a favorable season on moist rich soil it is all that could be desired, but it cannot stand drouth particularly on a light sandy soil. Haverland is one of the old reliables, and lacks only firmness to make it a first-class berry in every respect.

Of the newer varieties Clyde and Glen Mary are making an excellent record for themselves this year, and the former bids fair to head the list of over 220 vari-

A NEW PROFITABLE CANADIAN INDUSTRY.

eties we now have under test. They are both large and handsome and would make good shippers, but we will wait until the end of the season before going into details.

Wm Stevenson, Guelph, is the only man in Ontario, I know of, who has all the varieties mentioned for sale. Since

there has been such a demand of late for the best varieties would it not be well for growers having plants of these for sale to put their "ad" in the HORTICULTURIST.

Yours Truly,

H. L. HUTT.

O. A. C. Guelph.

A NEW PROFITABLE CANADIAN INDUSTRY.

By D. W. BEADLE.

THERE is a plant that grows in many parts of Ontario and Quebec which for some time has been an article of export, but now has become very scarce and is nigh to extermination, because the natural increase is not able to maintain a supply equal to the demand, especially as no effort was made to leave undersized plants to produce seed. In 1891 the Ontario Legislature prohibited the digging of it from January to September, with the object of preventing its destruction; but so long as greedy hunters would dig up the plants regardless of size, the open season is sufficient to accomplish sooner or later its extermination. The export from Ontario and Quebec ten years ago was estimated to be worth a hundred thousand dollars; it is now so small that it cannot be found in the exports of the last fiscal year, but occurs among names of other roots imported. The plant referred to is

THE GINSENG, *Panax quinquefolium*. L.

It has been successfully cultivated in the United States, and inasmuch as it is also at home in our forests and can be just as easily grown here, therefore this article is written, both to call attention to the subject and to give the latest information in the possession of the

writer concerning the method of cultivation and preparation for market, as well as its market value and the probable profitable demand. The writer is indebted for much of the information and for the illustrations which elucidate it, to a paper on the cultivation of the American Ginseng by Professor George C. Butz, published by the Department of Agriculture of Pennsylvania.

There is also a special incentive that appeals to the enterprising Canadian to induce him to give some consideration to this matter, in the fact that ginseng grown in our climate is of better quality, and therefore commands a higher price than that grown to the south of us. J. L. Cilley, a New York exporter, issued a circular last August in which he offered to pay for Canadian, Vermont, New York and Northern Pennsylvania Ginseng \$3 to \$3.20 per pound; for that of Southern Penna, Northern Ohio, Northern Indiana, Michigan and Western Illinois, \$2.90 to \$3.00: a difference in our favor of twenty cents per pound.

THE CULTIVATION OF GINSENG

begins with the gathering and planting of the seeds which are contained in the berry-like fruit, which is scarlet when perfectly ripe; two, sometimes three in a berry. These will be found ripe in the latter part of August. They do not

THE CANADIAN HORTICULTURIST.

germinate in the next spring, but remain dormant during all of the following summer as well as both of the winters, and come up in the second spring. During all this time they must be kept moist to ensure germination. They can be safely kept over the first winter and succeeding summer in a wooden box by covering the bottom with an inch thickness of moist leaf mould, strewing upon this a thin layer of seed to be covered with half an inch of leaf-mould, thus alternating with layers of seed and soil and finishing with an inch or two of leaf-mould. The box should be kept in a shady place, mice and ground squirrels excluded, and the soil always moist, not soaking wet.

If preferred the seeds may be sown at once in

THE SEED BED.

It may be made under the shade of tall trees where there is no under-growth, or if proper shade is provided, in the open garden. In either case the soil must be light, loose and rich. If necessary to enrich it, let it be done with well-rotted, never with fresh, manure; and that thoroughly worked in so as to be evenly distributed in the soil. The ground should be dug a foot deep, and everything that would interfere with the direct downward growth of the young plants, as sticks, stones, tree roots, etc., carefully thrown out. When the bed is made in the woods, it will usually be convenient to work in sufficient leaf-mould to make the soil light and porous, but if made in the garden it will be necessary to procure a quantity and work in a liberal supply. Narrow beds, say three feet wide, are preferable for convenience in weeding and stirring the soil between the rows of plants. For planting the seeds, drills are made three inches apart and one inch deep, into

which the seeds are dropped one inch apart, and covered. If there is danger that the soil may crack or a crust be formed, the bed is covered up with some leaf-mould and brush spread over the surface to remain until the young plants are expected to appear. Fig. 1402 is from a photograph of a seed bed in the woods. After the seeds have been



FIG. 1402.—GINSENG —Forest seed-beds with 100,000 seedlings.

in the moist soil for a year and a half, whether they passed the first twelve months packed in a box or the entire eighteen in the seed bed, the young seedlings are expected to appear with the advent of warm weather in the second spring. During the first season they attain only an inch or two in height bearing three simple leaves in a whorl at the top. If the soil has been favorable and the plants well cared for by weeding and cultivation, the seedlings will at the end of the second season's growth be large enough to be transplanted into the

PERMANENT BEDS.

They are prepared much the same as the seed beds, the soil thoroughly pulverized a foot deep, everything taken out that would interfere with free root development, yet having less of leaf-mould than the seed beds, more like a garden loam that is light, friable, porous

A NEW PROFITABLE CANADIAN INDUSTRY.

and rich. Transplanting can be done in early spring, but it is said that September or October is preferable. The plants are set out in rows six inches apart each way, putting the new bud of the root stalk two or three inches below the surface. Care must be taken to preserve all the little rootlets, and all breaking or trimming of the roots in any way sedulously avoided. During the growing season the soil between the plants should be frequently stirred, and kept free from weeds; and before the ground freezes the beds covered well with forest leaves, upon which brush is laid to prevent the leaves from being blown away. Cattle are to be fenced out from access to all beds of ginseng, for they not only do great damage by trampling on the beds, but also have a great fondness for devouring the foliage.

When circumstances are favorable, these beds as also the seed beds are made in the forest where the trees afford necessary shade and there is a free circulation of air. When they are made in the open ground

ARTIFICIAL SHADE

must be provided, such that while the plants have all the needed shade they have also an unhindered flow of an abundance of air. Mr. George Stanton, who is probably the most successful grower of Ginseng, secures all of these essentials by the following means: He sets rows of posts eight feet apart and six feet apart in the row, two feet deep in the ground and six feet high, and braces them with strips an inch thick and three inches wide, nailed upon the top of the posts, and running in both directions. Upon these are fastened screens made of lath, having a space of five-eighths of an inch between the strips of lath. Screens made in the same way are fastened to the sides, en-

closing the whole from the ground upwards for three feet, the remaining three feet being left open. Fig. 1403 is a

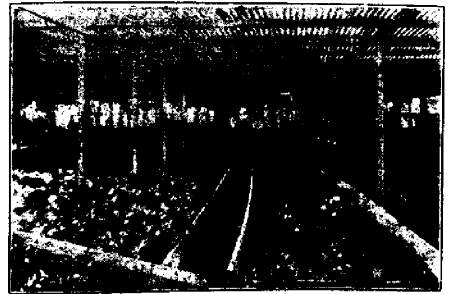


FIG. 1403.—GINSENG.—Lattice shading for Ginseng beds.

photographic representation of Mr. Stanton's lath screened bed. In these beds the plants are grown for five or six years, until they attain the size requisite for profitable marketing. Before that time they will have reached the fruiting age, when above a simple stem about a foot high, bearing a whorl of three to five palmate leaves composed usually of five obovate pointed leaflets, appears a simple umbel supported by a slender peduncle, and containing in July from ten to fifty yellowish green flowers, which will be succeeded by green berries that in August turn at first purple, then red, and at last, when perfectly ripe, scarlet. These will be carefully gathered and the seeds cared for, from which enlarged plantations and successive crops can be secured. In the fall this part of the plant which is shown in Fig. 1404, dies; that which survives, and which alone is of commercial value is

THE ROOT.

The underground part is not wholly root, that which lies just below the surface, called root-stock (rhizome), is not fleshy, and is marked with scars, which indicate the annual above ground growth

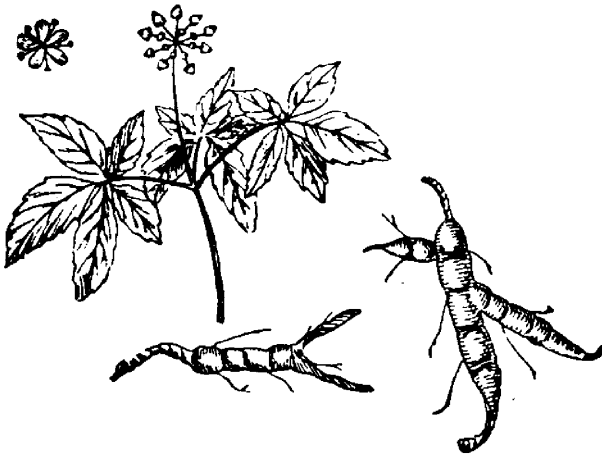


FIG. 1404.—GINSENG PLANT.

of previous years, thus telling the age of the plant. It is believed that the root does not increase materially in size after the eighth year, though it lives to a considerable age, for some have been found having sixty-five of these scars. When roots are eight years old, two years in the seed bed and six in the permanent bed, they will be considerably larger than the average of those growing wild, of the same or even greater age. Sometimes roots are found of the form shown in Fig. 1405; these are highly valued by the Chinese, and it is said are worth their weight in gold. Grosier says that ginseng signifies resemblance to a man. When the cultivated plants are seven or eight years old they will be of the size in which they undergo

PREPARATION FOR MARKET.

In taking the roots out of the ground it is important that they should not be cut or broken, for all cut or mutilated roots are classed in a lower grade. They are then to be washed perfectly clean, without any trimming of the rhizome or rootlets, and dried by spreading them out on hurdles in the sun, or in an evaporator; if in the latter the heat must be regulated so that the roots do

not become scorched or partially cooked. If dried quickly without injury they will look better and sell better.

When thoroughly dried the wild roots lose about one-third of their weight, but the cultivated, according to Prof. Butz, do not shrink so much. They have then only to be neatly and securely packed in boxes to be ready for market. That there is a

CONSTANTLY INCREASING DEMAND

will be seen from the statistics of the export from the United States, shewing the number of pounds exported and the average price per pound.

Ten years, 1868-1877—	3,881,559 lbs.	at \$1.09 per lb.
“ 1878-1887—	3,690,360 lbs.	at \$1.75 “
Nine years, 1888-1896—	2,193,063 lbs.	at \$3.04 “

Consul Johnson in his report dated Amoy, July 29th, 1897, states that it sells in Amoy at from \$12.50 to \$17.50 per pound, that at these figures Amoy handled in 1896, \$88,517.34 worth of it which came from America in addition to the value of \$44,222.80 from Korea.



FIG. 1405.—WILD ROOT; [Human form].

A STANDARD APPLE BARREL REQUIRED.

He adds also the following significant statement, "I do not exaggerate when I state that it is possible to *market annually* in China *twenty million* dollars worth of these roots." The italics are the writer's, not Consul Johnson's.

Given a suitable soil, good cultivation with proper attention to shading, ventilation, and preparation for market, the growing of ginseng in Ontario should be

A PROFITABLE INDUSTRY.

Mr. Geo. Stanton is quoted by Professor Butz as stating that the cash product in less than five years from less than two square rods (7 15 of the land had been in ginseng only four years) was \$387.96. For 28 pounds of his last season's crop he received \$5.50 per pound, which is a good illustration of the superior quality of cultivated over wild roots. Taking Mr. Stanton's figures as a basis, with time of cultivation in permanent bed six years, and quantity of ground two square rods, we have at the end of six years a return of \$64.66

a year for two square rods which when increased to a quarter of an acre, which is forty square rods, would make the revenue at the end of the six years \$7,759.20, which would be a dividend of \$1,293.20 for each year, from which is to be deducted all the expense of cultivation, rental value of land, interest on outlay, and reduction in value of tools and plant.

At present it is evident, from the figures given by Consul Johnson, that the exporter has more than a fair share of the profit; for when he gets \$17.50 per pound for best quality and pays only \$5.50, there is a margin of \$12 per pound. Surely the exporter's expenses are not twice those of the grower.

One word of advice to such readers as may feel disposed to embark in the cultivation of ginseng. Go slow. Begin with a small bed. Experience will teach. If failure be the result then the loss will not be severe. If success crown the undertaking, which is more probable to him who proceeds cautiously, this article will have not been written in vain.

A STANDARD APPLE BARREL REQUIRED.

Dealers and shippers who will handle a large part of the commercial apple crop of '98, which promises to be a full one, are once more taking up in earnest the question of a uniform barrel. As heretofore pointed out in our columns, the adoption of such regular package must eventually prove a benefit to growers. It will serve to build up confidence on the part of many consumers who have been too often cheated in the short measure barrel. An announcement is being sent out from the office of the National apple shippers' association, largely signed by dealers all over the U.S., stating their requirements in this direction. This is as follows:

A large crop of apples is expected this season. To realize a fair price we

will necessarily export a large amount, and as we shall have to compete with Canada, we must have good co-operation and a standard barrel. The National apple shippers' association and the National league of commission merchants have already adopted the following dimensions: Head 17 1/8 in., stave 28 1/2 in., between crozins, bulge not less than 64 in., outside circumference. The above are measurements of the Minneapolis flour barrel. Believing it for the interest of the buyer, shipper and grower to bring about this much needed reform, we, the undersigned buyers and shippers, agree that we will not purchase apples packed in barrels that hold less than the above.

THE FARMER'S FRUIT GARDEN.

AT the meeting of the Quebec Pomological Society last January, Mr. R. B. Whyte, of Ottawa, read a paper on the above subject, and his remarks will be of special interest to our readers living in the northern sections. After showing the great importance of having the table well supplied with fresh fruit, and the comparatively small outlay necessary to grow the finest varieties, he said that half acre was garden enough to furnish any family with fruit both for canning and for using fresh. He would lay it out 105 x 210 feet, and fence it with a wire fence; and just one path down the centre from end to end, wide enough to admit a horse and cart. Along this he would devote a few feet to flower growing, interesting the boys and girls in their care.

He advised planting about 6 hills of rhubarb — Linneus for early, Stott's Mammoth for late; of strawberries, 200 plants; of raspberries, he would plant a good large plot, in the autumn, cut back to five feet in height, mulch and manure, and bend the canes to the ground, holding in place with pieces of cordwood, or other weights; this is all the winter protection necessary, even at Ottawa. Currants and gooseberries were also included; for the latter a heavier soil is necessary. He says:—

Among over forty varieties of gooseberries that I have grown, the Whitesmith has been the most satisfactory, being perfectly hardy, and free from mildew, large size, good quality and a heavy cropper. Among the native sorts the Downing stands at the head for vigor, size and quality: among the standard varieties there are many new kinds offered by the dealers that are said to be superior to it, but none of them have been sufficiently well tested

yet to establish their claim. It is unfortunate for the reputation of the gooseberry that it has been the custom in this country to pick them green for cooking purposes, before they have acquired their proper flavor and sweetness; few are aware, even among those who have grown them, how delicious and wholesome a thoroughly ripe gooseberry is. Plant six each, Downing and Whitesmith, and you will be surprised how many of them you will use raw.

I doubt if it is wise for the average farmer to attempt growing grapes in this part of the country, or in any but the most favored parts of this province. If you have the proper location, a warm, gravelly soil, a southern slope exposed to the sun all day, and are willing to give them the necessary attention, by all means try a few, but be sure to plant only early ripening kinds, or some seasons you will lose a large part of your crop by early frosts. I have found the following very satisfactory kinds at Ottawa: In black, Worden and Wilder or Rogers 4. Moore's Early is considerably earlier than Worden, but it is too shy a bearer to be profitable. Among the large number of good red grapes, first place must be given to Rogers 3, Delaware and Brighton, the latter the finest in quality of all American grapes. There are not many really desirable green sorts. Moore's Diamond and Green Mountain are the best I have seen. All of these will ripen their fruit in any ordinary season.

The finer varieties of plums, such as can be grown in Western Ontario, are not hardy enough to stand our severe winters, and it is only a waste of time and money to attempt growing them in this district, except in very favored localities. Up to a few years ago we

THE FARMER'S FRUIT GARDEN.

could grow with great success the improved forms of our native Canadian red plum, but of recent years the prevalence of the fungous disease, known as the blight, has made it practically impossible to get a crop of clean fruit, and large numbers of trees are being cut down every year. To a certain extent this disease can be controlled by spraying with copper sulphate and Bordeaux mixture, but the spraying must be very carefully done to be of any value. Fortunately, there has been introduced in recent years a form of native red plum from the North Western States that has so far been free from this disease. The best known varieties of this fruit are De Soto and Weaver, but the Wyant and Hawkeye are superior to either of them in size and quality. All of these are perfectly hardy, and bear every year enormous crops of yellowish-red plums of good flavor, not equal to the best varieties grown in the west for table use, but still very good and extra fine for canning. The trees do not grow very large, they bear such heavy crops that they have little energy left for wood growth; the only pruning necessary is to remove any branches that run on one another.

Plums should always be planted in the spring as early as possible. Make the hole larger than the roots extend, and about eighteen inches deep, throwing the subsoil to one side; trim off all broken ends of the roots with a sharp knife, work the surface soil well in among the roots, and when all covered tramp the soil firmly. Do not have the tree any deeper in the ground than it was in the nursery. Twenty feet apart will give them ample room.

The great variety of ways in which it can be used, its wholesome nutritious properties, and long keeping qualities make the apple the king of fruits. A

man who can grow the Fameuse, McIntosh Red or Wealthy, does not need to envy the inhabitant of warmer climes his finest fruits. No other fruit of temperate climates is at the same time so appetizing, so wholesome and so nutritious as our apple, and in no other part of America can these varieties be grown in such perfection as in the Province of Quebec. There are not many kinds of winter apples that will stand our severe seasons, but for summer and autumn fruit our climate is unsurpassed. Among early apples Tetofsky and Yellow Transparent take the lead. Tetofsky is a first-rate cooking apple, and when ripe, good for table use as well. It has an unfortunate habit of dropping a large part of its crop before it is ripe; it grows in such large clusters that as they grow some of them are shoved off the branch, but this is no great loss as most of them are large enough to cook when they drop. The Yellow Transparent is a rather larger apple and better for table use. Instead of dropping prematurely it holds on to the tree till it rots, if not picked when ripe.

Closely following these come the Duchess and Peach. The former, the type of hardiness and vigor, will thrive wherever an apple can grow; it is a little course for a table fruit but unrivalled for cooking and an enormous bearer of large beautiful apples, the skin being streaked and splashed with red. The Peach is a much better table fruit, finer grained and better flavor, not so vigorous nor so prolific as the Duchess, green in color with a red flush on the sunny side. For late autumns and early winter the Fameuse, McIntosh Red and Wealthy are ahead of all other rivals. The Fameuse, most extensively grown, is too well known to need description. McIntosh Red is quite equal to it in quality; it is darker in color and de-

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cidedly larger. Where the winter is too severe for these two to thrive, the Wealthy is a good substitute. It is as hardy as the Duchess and one of the most beautiful of apples; the quality is of the best either for cooking or dessert. It is at its best in November but keeps well till January. We have no winter apples suitable for this district that can compare with the King or Spy. Of well tested sorts, Baxter, Pewaukee, and Scotts Winter are the most reliable. The first two are large, dark-colored, showy apples, of only fair quality; the latter, while an extra good keeper, is too small ever to become a favorite. There are a great many new kinds offered as good winter varieties for severe climates, but as yet they are only on trial; those mentioned above are the safe ones to plant in the meantime.

Apple trees may be planted successfully in the autumn, but on the whole the spring is the best time. Many planters buy their trees in the autumn, trim the broken roots, dig a trench and bury them, covering with earth up to near the ends of the branches. The advantage of this method is that, after heeling in, the cut ends of the roots become callous, and are ready to put out new roots as soon as planted in the spring. Plant as directed for plums, only allow more room; 25 to 30 feet apart is none too far. One each of the above kinds will give you all the apples you could use if they all bore every year, but as they rarely do that it is better to plant two of each kind. If you would like to grow some crabs, the Gibb, Martha, and Whitney are all good sorts. the Whitney is large enough, and good enough to be used as a dessert apple, and is immensely superior to the Transcendent, so commonly planted.

Unless you are willing to grow a large number of cherry trees you had better leave them alone, for you have to feed the birds before you get any for yourself; they take fully three-fourths of all I grow. I have found Ostheim and Besserabian quite hardy, and of very good size and quality.

When you make up your mind that you ought to have a fruit garden, write to all the nurserymen that you know of, and ask for their catalogues, and prices; compare them carefully, and everything else being equal, send your order to the nearest one. You will find that you can always do best by dealing direct with the nursery. If in doubt as to what to plant, ask some of your neighbors what has succeeded with them, and profit by their experience. As a guide to you of what the cost should be, I have made an estimate of everything recommended in this paper:

6 rhubarb roots	\$1 00
200 strawberries, assorted . .	2 00
200 raspberries, assorted . .	3 00
18 currants, assorted	2 00
12 gooseberries, assorted . .	1 50
2 each 7 kinds of grapes . .	3 00
2 each 2 kinds plums	2 00
2 each 10 kinds apples	6 00
	\$20 50

These are all outside prices, and most of the above articles can be bought for much less from reliable Canadian nurseries, but supposing you pay these prices, at 7 per cent. it would represent a yearly outlay of \$1.40. Do you not think it would be well spent money to have such a collection of fruit as I have described? I do.

RE BIRDS.

SIR,—In your issue of July you quote from the *Toronto Globe* a short article about birds. The newspapers and school teachers have had their say long enough on the bird question, and a word from people who suffer from depredations of the birds, particularly the protected ones, would, perhaps, not be out of season. Why should it be lawful to have eggs of crows, ravens, eagles, etc., and unlawful to have in possession the other kinds? One hawk is of more value to a fruit grower or nurseryman than any number of robins, and the hawk never picks a cherry, or in any other way injures any man's crops. Very rarely he may pick up a chicken, but it is only at long intervals he enjoys such a treat. One gentleman, a very large grower of fruit, told the writer a few days since that he had

suffered this year the loss of the entire crop of a whole row of English cherry trees from robins, assisted by orioles. And the writer has every year for the last five or six, lost from one-half to three-quarters of his own cherries from the same pests. It is an indisputable fact that a couple of men with a spray pump can destroy more insects in a day than all the birds in a whole township do in a whole season. Instead of the law protecting robins, orioles, cherry birds, etc., they should be destroyed in the same manner that other recognized pests are, and our trust put in spray pumps for the destruction of the insects.

Yours, etc.,

W. C. ORR.

Stoney Creek

EVAPORATED APPLE TRADE.

A LETTER was received at the Department of Agriculture yesterday from a large importing firm at Hamburg, Germany, who are anxious to get into communication with reliable packers, and who ask for the names and addresses of such firms. They were induced to look to Canada for trade through the advice of Mr. Harrison Watson, Canadian Curator at the Imperial Institute, London. In their letter they say:—"Of late years evaporated apples, pears, etc., have become largely consumed in this country, and of these the former take first place. We are thoroughly convinced that your country might get a large share of this

trade if properly taken in hand. . . . Another point we cannot impress upon you too strongly is that apples be dried only on wooden trays and not zinc ones. All apples, according to our laws, must be analyzed here on arrival by sworn chemists, and should a trace of zinc be found, which could only be the case were they dried on zinc trays, the buyers are free to cancel their contracts, for the fruit is not allowed to be consumed here. Evaporated apples imported here are packed in boxes of 50 pounds and barrels of about 200 pounds, and 90 per cent. of these are of the 'prime' grade shipments. Shipments are also made of 'choice' and 'fancy.'—*Toronto Globe*.

FRUIT TRANSPORTATION TO EUROPE.

The following letter has been sent by the Department of Agriculture, Ottawa, to the several steamship companies sailing from Montreal and Halifax:

"Last season a lot of early varieties of apples were shipped from Western Ontario to Great Britain. About one half of the quantity was forwarded in cold storage, and the remainder were sent as ordinary cargo.

Those sent as ordinary cargo were reported to have arrived all in good condition, and to have sold at an average price of 18s. per barrel.

Those sent in cold storage were reported to have been sold at an average price of 8s. per barrel, and sixty-three per cent were reported to have been landed in a "wet" or "slack" condition.

For the safe carriage of early varieties of apples it seems necessary that they should be carried at a temperature at or below 40° Fahr.

On examining the returns of twenty-nine cargoes of apples last year, I find that the same varieties of apples were sold at the same time at prices showing as much as 8s. 6d. per barrel of a difference between the apples which were landed in good condition and the

apples which were reported as been landed in a "wet" or "slack" condition.

For the safe carriage of late fall and winter apples, it seems desirable that they should be so carried that they may be thoroughly ventilated, so that the heat produced by the fruit itself will be carried off.

When apples or other fruits are kept at a temperature above 40° degrees Fahr., they continue to ripen or go towards decay. That process generates heat. The increased temperature thus caused makes the fruit ripen still faster.

For the carriage of apples by your Line, could you arrange to have the hold or holds for apples thoroughly ventilated by an air duct, leading to the bottom of the hold, and by use of an electric fan or fans to suck the warm air from the top?

During any particular warm weather on the voyage, the ventilating ducts might be used only during the evenings or nights, when the air was cool.

Our department is calling the attention of growers and shippers of apples to the desirability of packing the fruit in barrels or boxes so constructed as to permit of ventilation through each barrel or box, and packed tight enough to hold each fruit firmly in place.

JAS. W. ROBERTSON,
Commissioner of Agriculture and Dairying.

THE TRIUMPH PEACH.

The earliest free stone variety. Frank J. Fox, of Lowell, Mich., tells in the *Fenville Herald* his experience with this valuable yellow-flesh variety. His neighbor planted trees several years ago and has had them in bearing in his orchard where the Triumph has distinguished itself as the most remarkable of all early peaches. The trouble with early peaches generally has been that they are cling stones, and that they rotted after being gathered, rendering it impossible to ship them to market. The Triumph has all the characteristics of the best late peaches, being of large size, good color, yellow flesh and stone

almost entirely free, and has none of the inclination to rot which the other early peaches have. The Triumph in this instance bore the second year from planting. Mr. Fox's trees bore the first year they were planted, but only to a small extent. He was surprised at the large size and fine appearance. The Triumph ripens with Mr. Fox at the same age as Alexander. Its flavor is fine and the pit very small. The peaches hang on the trees with great tenacity. We are glad to get this authentic report from a practical Michigan fruit grower.—Green's Fruit Grower.



Flower Garden and Lawn. ❀

CULTIVATION OF NATIVE PLANTS.

THE cultivation of our native plants is a matter that has received little attention, and it is doubtful if there is to be found growing anywhere in Canada, a respectable or representative collection. In our city parks and squares, large numbers of bedding and other plants are grown, often at considerable expense, and needing to be renewed every year; while our Canadian wild flowers, which could be procured with a little time and trouble and not much expense, and could easily be maintained permanently, are never seen except occasionally in wooded parks left in the natural state, and then only to a very limited extent.

If some of our Horticultural Societies, in the cities and towns where they are fortunate enough to have public parks, were to devote a part of their energies for a few seasons to making a collection of native plants, they would be both pleased and surprised at the result of their efforts. Such a collection properly cared for, with the plants well arranged and plainly and correctly labelled, would constitute objects of constant interest and of undoubted educational value. It is not contended that native flowers should be grown to the exclusion of other ornamental plants. Even in Florida, the wild flowers are few in number compared with the many

that are cultivated there, and so it would be here. But a small space in the park or in the private garden, might well be given to them, which they would fill with beauty and interest, and where they would contribute to the popular knowledge of some of our indigenous beauties, which, in the older portions of the country at least, are in danger of disappearing.

The individual collector will find in the culture of our native plants, very pleasant and interesting recreation, aid in botanical study, general enlargement of knowledge, and that truest and best culture which is to be found in the sympathetic study of the wonderful works of God.

A minister who had to give up his charge on account of ill-health, commenced late in the season last year, to take up and bring home and plant, flowers he met with in his walks, that seemed to him worth cultivation. He found health and pleasure in the task, studied his Botany anew, and, with an interest he had never felt before, and made a very interesting and creditable collection of plants, and not a very small one either, for he had over thirty good varieties in fine growing condition.

The flower lover, no matter how poor, if he can make excursions to the woods, may have flowers that will satisfy the

heart's longings and give him as much true pleasure as the rich man's exotics give to him. A collection can be made and much pleasure derived from it without any knowledge of Botany; but a study of Morphology in such a book as the High School Botany (Spotton), carried far enough to make use of the key to the Families and Orders, is not a very serious undertaking and will be found very useful, particularly in the identification of the different varieties.

The dried specimens of the botanist always have an attraction for the true flower lover, but they cannot be compared either in scientific or ornamental value with the living plants grown under favorable conditions.

Our Canadian wild flowers that are worth the care and attention usually given to foreign varieties, are more numerous than is generally supposed. Many of them are very beautiful and nearly all are ornamental in cultivation. Naturally they will be found hardy and the most favorable conditions for their culture can be easily ascertained and understood. Nearly all of the best and most decorative are perennials, so that a collection once obtained would be permanent with a little care.

A good rule for transplanting would be to remove the spring-blooming plants in the fall and the summer and autumn flowering ones in the spring, but most of them can be transplanted easily and successfully at any time, even when in flower. The flowers which the children carry home from the woods and plant when in bloom, nearly always take root and grow, and are lost only through subsequent neglect.

Generally, a rich friable soil will be found the most suitable, and if a winter covering be desired, there is nothing better than their own dead foliage, or the leaves of trees.

The method of arrangement will vary according to the taste of the cultivator, the place where the plants are to grow, and whether they are grown in a mixed collection or occupy space by themselves. As a general rule it is better to have the tallest growing plants in the centre of the bed, or back of the border, and the low growing ones at the edge, with the others arranged between according to size; but there should be an occasional slight break in this arrangement to prevent stiffness, and care ought to be taken that, throughout the season, no considerable part of the plot would be left without bloom. Many of our common native flowers are among the best of the spring bloomers, as witness the Hepaticas, Trilliums, Canada Columbine, Wood Anemone and Spreading Phlox. Others, as the Willow Herb, Cone Flower, Flowering Spurge, Rose-flowered Yarrow, Pennsylvanian Anemone and Canada Violet, are in flower nearly all summer: while the Asters and Golden Rods, with their many varieties, come in at the end of the season.

The Dandelion would create a sensation in the floral world, if previously unknown, and introduced as a novelty from Terra del Fuego, or some other country far enough away. The Wild Mustard (or Charlock), and the Corn Cockle, so unsightly in the eyes of the thrifty farmer, have claims to admiration; and the Viper's Bugloss, a pest difficult to eradicate and rapidly spreading, makes a fine appearance when seen in masses with its purplish-blue flowers. The Toadflax also has claims to beauty; the Wild Chicory (or Succory) has pretty blue, rayed flowers; the Teasel, which has given us our English word *tease*, has prickly flower heads, which are used for winter ornaments; and the despised Canada Thistle has a fine flower and

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an agreeable and delicate fragrance. The Knotgrass, so common in our door-yards, has a pretty little white flower; the Thyme leaved Speedwell, often found growing in lawns, has very beautiful little pale blue flowers, in terminal racemes,

“Nor India's rarest gem outvies
The little Blue-eyed Grass.”

Among native plants, we have such climbers as *Clematis Virginiana*, the Virgin's Bower, sometimes seen on verandas, and which retains its silky mass of feathery tails for a long time in the fall; *Adlumia cirrhosa*, Mountain Fringe, with small but pretty leaves and pink flowers; *Vitis cordifolia*, our native Grape, with fresh and luxuriant foliage and bright berries; *Ampelopsis quinquefolia*, the Virginia Creeper, more generally grown and better known than most native plants; and *Echinocystis lobata*, the Wild Cucumber, an annual, easily grown from seeds.

Among bog and aquatic plants, we have *Nymphaea odorata*, the Sweet-scented Water Lily; *Nymphaea tuberosa*, the Tuberous Water Lily; *Nuphar advena*, the Common Yellow Pond Lily; *Typha latifolia*, the well-known Cat Tail or Reed Mace; *Caltha palustris*, Marsh Marigold; *Calla palustris*, Marsh Calla, which seems to offer a fine opportunity to the hybridist for cross-fertilization with either the Little Gem or common Calla; *Alisma plantago*, Water Plantain; *Acorus calamus*, Sweet Flag; *Iris versicolor*, Blue Flag; with different varieties of *Sarracenia*, Pitcher Plant; *Lemna*, Duckweed; *Sagittaria*, Arrow-head; various aquatic orchids and ferns, and numerous other plants, which will thrive in deep or shallow water or in merely damp places, and whose culture can be best understood from their natural mode of growth.

Nature has distributed our Ferns with

a generous hand, and when required for the flowerless nook or shaded bank, they can be found in abundance in every locality. One only *Adiantum pedatum*, the Maiden Hair Fern, need be particularly mentioned, because it is not known and appreciated as it deserves. It grows about a foot high, and its black shining stems, forked fronds and recurved branches, present a simple grace of outline and elegance of form that are unsurpassed in beauty. It flourishes in rich soil with good drainage and plenty of moisture, and does well in shade or not too strong sun.

Some of our native plants that do best in ordinary cultivation may be noticed in brief detail:

Achillea millefolium Yarrow or Mil-foil, has white and purple flowered forms, very common and not of much value; but the rose colored form (*roseum*) is a jewelled beauty, its heads of flowers going well with the fern-like foliage. It is in bloom for two months, but is, like most of the Achilleas, inclined to spread.

Anemone nemorosa, Wood Anemone, grows not more than 6 inches high and blooms in May. Flowers white, tinged with purple, leaves dissected, trifoliate. There is a red flowered variety which is very attractive.

Anemone Pennsylvanica or *dichotoma*, Pennsylvanian Anemone, grows in low meadows, about 18 inches high and often flowers from June till September. It has showy, pure white flowers, held above the foliage, and does well in shade.

Aquilegia Canadensis, Canada columbine or wild honeysuckle, one of the best of the columbines, 1 to 2 ft. high, has brilliant scarlet and yellow flowers in May and June, and is sure to please the most fastidious.

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Asters are autumn-flowering. We have about 20 varieties; *lewis*, *multiflorus*, and *novae anglie* being among the best. They may be grown separately or in masses, and are very showy late in the season when other flowers are scarce.

Asclepias tuberosa, Butterfly Weed or Pleurisy Root, blooms from July to September, is about 2 ft. in height, has broad foliage and showy heads of deep orange or orange-yellow flowers, and will adorn the most select border. *Asclepias incarnata*, Swamp Milkweed, July and August, 2 or 3 ft high, grows in wet places, and has showy rose-purple flowers, the lighter colored hooded bodies above contrasting beautifully with the darker colored petals below. *Asclepias cornuti* is the well-known milkweed.

Chrysanthemum leucanthemum, Ox-eye daisy, Field daisy or White Weed, although so common a weed, is a fine flower, and well worth cultivation.

Cimicifuga racemosa, Black Snake-root, July and August, 3 ft., is a tall and strong growing plant, with foliage like the Bleeding Heart, but lighter in color. The flowers are pure white, arranged on spikes sometimes two feet long.

Claytonia Virginica, Spring Beauty, May, 4 in., has two narrow opposite leaves, and a loose raceme of rose-colored flowers with dark veins. The stem springs from a small tube often deeply hid under tree roots, which makes it difficult to transplant.

Epigaea repens, Trailing Arbutus or Mayflower, is a pretty little trailing evergreen with very fragrant white or pink flowers in spring. It is difficult to transplant, but it is claimed that it can be grown if taken up with a good ball of roots, and planted in a shady place, in good soil not containing lime and

well mixed with leaf mould. *Gaultheria procumbens*, Wintergreen and *Mitchella repens*, Partridge Berry are also trailing plants that may be ornamental under suitable conditions.

Epilobium augustifolium, Willow Herb, French Willow, or Rose Bay, July and August, 3 to 5 ft., has willow-like leaves, and branches at the top, bearing long spikes of lilac-purple flowers. It is very handsome and easily grown.

Erythronium Americanum, Adder's Tongue or Dog's Tooth violet, May, has a bulb usually about 6 inches deep in the ground, two blotched leaves and drooping yellow flowers.

Euphorbia corollata, Flowering Spurge, July and August, 2 to 3 ft, is a branching plant, with smooth leaves and pure white petal like bracts around the true flower.

Geranium maculatum, Wild Cranesbill, May and June, 1 ft., is a branching plant with large palmate leaves and purple flowers an inch across. *Geranium Robertianum*, Herb Robert or Bird's Eye, June to October, is a pretty little biennial, with finely-divided, strong-smelling, hairy leaves, red stems and reddish purple flowers. Easily transplanted and a good edging plant.

Hepatica triloba, Liver Leaf, May, 6 in., has flowers varying from pure white to all shades of pink and purple, which open before the new leaves appear. It comes in with the crocuses and improves with cultivation, and where it has been grown for several years, new plants spring up from self-sown seeds.

Lilium Canadense, Wild Meadow Lily, July, 2 to 4 ft., grows in wet meadows, and has orange flowers spotted with brown inside and recurved petals. There is a red flowered variety which is very neat and attractive.

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Lobelia cardinalis, Cardinal Flower, August and September, 2 to 4 ft., has smooth stems and superb nobbing racemes of intensely brilliant red flowers. It will flourish in the garden or in shallow water. *Lobelia siphilitica*, Great Blue Lobelia, July, 2 to 4 ft., is a coarse plant with large leaves and large, dense spikes of light blue flowers.

Lupinus perennis, Blue Lupine, May and June, 1 to 2 ft., has palmate leaves on long stems and long spikes of showy flowers, which are pea shaped and of various shades of color—blue, purple, pink and white. It does best in sandy soil.

Monarda didyma, Oswego Tea, July to September, 2 ft., is fine for massing, and its brilliancy of color and profusion of flowers throughout the summer, make it invaluable for the border. It has aromatic foliage and showy heads of bright scarlet flowers.

Myosotis palustris var. *laxa*, Forget-me-not, May to August, 1 ft., grows in moist woods or swamps, has pale blue flowers with yellow centre, and is almost identical with the cultivated plant.

Orchids include many plants of great beauty, and would require large space and special knowledge to treat of properly. Among them are *Orchis spectabilis*, Showy Orchis and different species of *Habernaria*, *Goodyeara* and *Cypripedium*. *Cypripedium spectabilis*, Queen or Showy Lady's Slipper, is one of the most beautiful of all Orchids. Some of them are fine for winter flowering, and most of them do well outside, planted in swamp muck and kept rather moist.

Pentstemon pubescens, Hairy Pentstemon or Beard Tongue, June, 1 to 2 ft., grows in clumps on sandy hills and dains, and has long racemes of bluish-

purple and white, snapdragon-shaped flowers. Pretty and easily grown.

Phlox divaricata or *Canadense*, Spreading or Wood Phlox, May, 1 to 2 ft. grows in rich woods, transplants very easily and makes one of the brightest flowers in the border, the clumps increasing in size and beauty under cultivation. The flowers are lilac or bluish, in a spreading, loosely-flowered cyme, and the stems, which are prostrate in winter and early spring, become erect before flowering.

Rudbeckia hirta, Rough Cone Flower or Black-eyed Susan, July to September, 2 to 3 ft., although a little coarse to some tastes, makes an excellent border plant. It has long stalked flower heads, with conical, purplish-brown disks and bright yellow rays. It may be transplanted even when in flower, and is increased by division or by new plants, which spring up freely from self-sown seeds.

Rudbeckia laciniata, Cut-leaved Cone Flower, July and August, 3 to 6 ft., has divided foliage and broad heads of showy lemon-yellow flowers with drooping rays and greenish-yellow disks. It is the parent of the deservedly popular "Golden Glow Rudbeckia."

Smilacina racemosa, False Spikenard or Clustered Solomon's Seal, May and June, 1½ to 4 ft., grows in rich woods and has gracefully recurved stems two rows of large, oval, green leaves and a large compound raceme of small fragrant white flowers, succeeded by red berries specked with purple. It is quite showy and suitable for cut flowers or forcing. *Smilacina bifolia* (*Maianthemum Canadense*), Wild Lily of the Valley, has two leaves and a simple raceme of white flowers and *Polygonatum biflorum*, Smaller Solomon's Seal, has a recurved stem, two rows of smooth

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glossy leaves and axillary flowers usually in pairs.

Solidago, Golden Rod has a large number of varieties, the yellow flowers of which appear in summer and autumn. They range in height from six inches to 6 feet, and present considerable variations in foliage and flowers. They are very brilliant, "like flaming swords of fire," and are useful for cutting. The fine hairs of some of them irritate the skin, which probably accounts for their being mistakenly considered poisonous.

Tiarella cordifolia, Foam Flower, False Mitre-Wort, May, 6-12 in., is very pretty, with maple-like radical leaves and scapes with racemes of white, star-shaped flowers. It is fine in masses and is said to be good for forcing.

Trillium, Wood Lily, Wake Robin, May, 1 ft., has a tuberous root, three leaves and a single flower with the parts in three's. There are several varieties with white to purple flowers. They are very attractive in the border and easily grown. The shoots come up rather

late in spring with the flower bud already formed. It soon opens and after flowering they die away, so that they may be easily lost in digging the border.

Vicia cracca, Tufted Vetch, July, 1½ ft., is a pretty clinging plant with pinnate leaves of 20 to 24 leaflets, and the leaf stable prolonged into a tendril. The flowers are blue turning to purple, in a dense, one-sided raceme.

Viola, Violet, has many varieties, among which *Violet blanda*, Sweet White Violet, *Viola palmata*, Common Blue Violet and *Viola pubescens*, Downy Yellow Violet are well known spring bloomers, easily grown and attractive.

Viola Canadensis, Canada Violet is particularly valuable. It is a stemmed violet, about a foot high and flowers most of the summer. The petals are purple outside and white within and it has heart-shaped, pointed leaves.

CHAS. Y. MOORE

Brampton Ont.

DAFFODILS FOR POTS.—There are a hundred varieties of daffodils good enough and distinct enough to grow and flower in pots, and their cultivation is of the very simplest. Pot them up, four, five, six or more bulbs in a pot, according to size, during August or September, and stand them in any convenient spot. They need not necessarily be kept covered nor darkened, as they will fill the pots with roots

in any case. Place the lot which is to flower first in a temperature of fifty-five to sixty degrees early in December, and they will open during January, while by moving other batches in succession, the display may be kept up for three or four months, and it never need be monotonous if a wise selection is made and every batch consists of a different variety.—Garden and Farm.



HERACLEUM GIGANTEUM.



FIG. 1406.—HERACLEUM GIGANTEUM.

COMPLYING with the request of several members of the Horticultural Society here, and Chief Gardener Cameron of the N. F. Park, I enclose to you a "Photo." of a very attractive *Herbaceous Plant* now flourishing in front of "All Saints' Church" Sunday School House.

The seed of the plant was brought by Mrs. Bull about seven years ago from Shropshire, England, where she had noticed it growing vigorously on grounds attached to the residence of a relative. The plant which we have now has been slow in its first stages of growth, but since last spring its growth has been surprising; the measurement is correctly given in Mr. Cameron's account.

GEO. A. BULL.

*Niagara Falls South, Ont.,
July 5th, 1898.*

I also enclose Mr. Cameron's note, as follows:—

Heracleum Giganteum, the old Greek name of the plant; so called in honour of Heracles or Hercules. Cow Parsley; or Cow Parsnip. Umbelliferæ, or Parsley Family. A genus comprising about seventy species of strong coarse-growing hardy biennial or perennial herbs, from the mountains of Central and Southern Europe and especially Asia, with a single North America variety; flowers white, the petals of the outer ones of each umbel larger. Leaves dissected with large segments, although long known to cultivation. Heracleums are not possessed of any great special recommendations. They are best adapted for growing in shrubberies, rough parts of pleasure grounds or on the margins of water, being too coarse for the flower garden. They succeed in any kind of soil. Increased by seeds or by divisions. The specimen before us is a noble looking plant, tropical in appearance, with its large white umbels many rayed pinnatifid, deeply toothed. Stem eight feet high; length of leaf from the stem, five feet four and a half inches; width of leaf, three feet nine inches; width of plant, eight feet ten inches; circumference of stem at base, ten inches; circumference plant around the tips of the leaves at the base of the plant, twenty-seven feet.

This species named above first came from the Caucasus to England in 1820, where it has of late years been very extensively cultivated on account of its large size and commanding appearance.

RODERICK CAMERON.

CULTURE OF OUT-DOOR ROSES.

THE adaptability of the rose to all parts of this country, its beauty of form and color, and its delightful fragrance, make it the favorite flower with all classes. I hope to see the day when rose exhibitions in June will be as popular as the chrysanthemum shows in November. In England rose exhibitions are very popular during the summer, and are well patronized by the public; I see no reason why we could not make creditable exhibitions here. The cut flower roses are unequalled and they may be procured in all the middle and northern parts of the country from June to November and for a longer period at the south.

To grow roses successfully, a rich soil must be provided, a heavy, rather stiff yellow loam being the best, and which should be well drained. If the soil is not of this nature, it should be removed to the depth of one and one-half feet and filled in with three-fourths good loam from an old pasture and one-fourth well rotted cow manure, well mixed.

The rose bed should be exposed to the full sun from morning till night; don't attempt or expect to grow good roses under the shade of trees or near enough for their roots to come in contact with the bed. I never like to plant rose bushes nearer than twenty or thirty feet to shade trees, for if they are planted much closer the roots of the trees will surely take from the soil that which is beneficial to the rose.

If it is not convenient to have a rose bed, the plants may be grown singly on the lawn, or a row may be planted along a driveway or walk. When so planted, dig out a piece of sod about fifteen inches in diameter, and make a hole about the same depth; prepare it as

described above for a bed. In this way the plants should stand about four feet apart. If immediate effect is desired, or blooms from spring until frost the first year, good strong two or three year old plants should be procured and set as early as the soil can be put in condition in the spring, although I have seen plants do well planted as late as June 15th, but planted this late they must be pot grown. Be sure to firm the plants well in the soil and water thoroughly after planting.

As to varieties, we have many that are very beautiful, monthly bloomers and hardy in this section. If I were confined to but six varieties, I should name the following in their order: Kaiserin Augusta Victoria, creamy white; Madame Caroline Testout, beautiful satin pink; Meteor, crimson; Clothilde Soupert, white, shaded pink; Belle Siebrecht, dark pink; American Beauty, rose. However, there are many other varieties that should be in every collection of any extent, such as Souvenir de Wootton, La France, President Carnot, and several other Hybrid Teas. President Carnot is a new rose of decided merit, and I have every reason to believe it will rank with our very best roses for out-door culture; the color is a delicate shade of pink that would delight the heart of anyone; its long pointed buds, and handsome, strong foliage make it one of our most valuable roses.

Climbing roses should not be neglected, for there are places round every suburban home where such climbers can be used to advantage. The Crimson Rambler is perhaps the finest and most showy climbing rose to date, and should be planted wherever a climbing plant is needed. A strong two or three

PANSIES.

year old Crimson Rambler in full bloom is a sight long to be remembered.

One of the most troublesome pests of the rose is the "rose-slug"; the best remedy I have found is to dust the plants with powdered white hellebore, in the morning when the dew is on; or if no dew, first spray the leaves and then apply the powder. Another troublesome insect is the green fly, which usually attacks the young growing shoots,

and is easily prevented by the use of tobacco dust, which should be dusted over the plants once or twice a week; however, it would be best to make both these applications before the insects appear. In very dry weather the plants should be thoroughly watered two or three times a week, and hoed at least once a week. Never allow the soil to bake or become hard; the surface should be kept loose at all times.—Vick's Mag.

PANSIES.

THERE is lots of pleasure in store for those who have never owned and studied a pansy bed; and even more for those who know just how much joy is in such a possession.

If you have a hotbed, sow pansy seed there in August. Transplant until they are five or six inches apart. Protect with mats on outside and paper on inside during cold weather; or, instead of paper, give a light covering of leaves, which, to be an ideal covering, should not be packed closely. Give air and light on warm, sunny days. Very early in spring the protection may be removed, and if carefully watered and sheltered from the noontide sun, the pansies will soon be blooming. As soon as the frost is out of the ground

they may be transplanted to the garden. Make the bed rich with old, fine, stable manure (preferably from the cow stable). Give them a sunny situation I say, with all deference to writers who say pansies need a shady position. Mulch the pansy bed with chip dirt, chopped hay, lawn clippings, fine manure from the bottom of the heap,—or better than anything else, if you can get it, is wood's earth or leafmold. A good mulch and plenty of water, and we have no sunshine that will hurt the pansies. They bloom earlier in spring and remain in bloom later in fall in a sunny situation, but possibly a sheltered bed would give more and larger blooms in mid-summer.—Vicks' Magazine.

IMPROVED KEROSENE EMULSION.—One of the best emulsions for use in the greenhouse or window on plants affected with aphid, scale and mealy-bug is prepared by adding one part of fir tree oil to five parts of kerosene and diluting the mixture with water, according to the insect to be fought. For scale and mealy-bug, use 20 parts of water to one of the mixture, syringing it all over the plants infested. For green and black

aphid, use 40 parts water. To produce a thorough union of the oils and water, put them in a pail and mix well with a syringe for a moment. Some florists who have used it think it cures and prevents mildew. It is preferable to the old kerosene emulsion in which a portion of slightly sour milk was used because it can be prepared with so much less trouble.



The Canadian Horticulturist

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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.

✻ Notes and Comments. ✻

PLANT LICE.—These insects have been very troublesome this season, especially in the cherry trees. Not only have they stunted the tree growth, but they have also lessened the fruit growth, causing the cherries to mature irregularly, and to be of smaller size than usual. This pest is becoming so serious that some means must be taken to destroy it. We used kerosene emulsion this season, but, while it killed the aphids, the second and third application seemed to burn the foliage very severely. We are glad to notice that whale oil soap, one pound to seven gallons of water, has been proved to be equally effective, and not injurious to the foliage. Not all the whale oil soap sold is of good quality, and in the purchase the greatest care must be observed to secure the best grades.

CURCULIO IN CHERRIES.—Never before have we seen the curculio to be so troublesome in the cherry as this season. Between this insect and the aphid, which has been so abundant as to cause the fruit to ripen most irregularly, the cherry crop has proved almost worthless. The larva of the curculio is not a very attractive morsel, but it is hard to find any cherries free from them. Not like the plums, the stung cherry does not fall to the ground but continues until maturity, and overgrows the crescent mark so that it can scarcely be detected as a wormy cherry without breaking it open.

—
THE NORTH STAR Currant has done better this season than previously. The branch is very healthy and vigorous, and an abundant bearer of fair-sized fruit of good flavor; much more agreeable to

NOTES AND COMMENTS.

the taste than the Cherry, to which however, it is inferior in size.

NETTING is suggested by American gardening as a useful covering for gooseberry bushes in July, to give partial shade.

THE IRONMONGER and the RED WARINGTON are the only two among about twenty-five English varieties, that have been found mildew proof at Maplehurst this season.

ENGLISH GOOSEBERRIES seems to succeed every year with Mr. A. Morton, of Wingham, who has just sent us a quart each of seven English varieties, that do him great credit. Among them were Duke of Sutherland, ONE of Them, Two to One, Crown Bob, Catharina and Whitesmith.

THE PEARL GOOSEBERRY succeeds admirably with Mr. Thomas Beall, of Lindsay, who sends a fine sample, most of them measuring about one inch in diameter. A branch enclosed also shews how wonderfully productive this variety is.

THE INDUSTRY succeeds well in the garden of Mr. E. J. Wolverton, Grimsby;

ripening about July 16th. The bush seems vigorous and carries a heavy load.

BIG STRAWBERRIES.—The Strawberry Culturist gives the following instructions for growing strawberries such that from 22 to 20 will fill a quart basket :

Use 20 tons stable manure, 50 bushels wood ashes, one ton bone fertilizer per acre thoroughly worked in the ground. Give twice the usual amount of cultivation and plant Glen Mary, Enormous, Marshall and Mary: Don't let them get too thick and if the season is at all favorable you will get the kind of berries you are looking for.

ASPARAGUS does not pay when poorly managed, but a writer in Farm and Fireside thinks there is money in it for the man who handles it well. We quote a paragraph :

The general asparagus market is never overstocked, and there is always a demand for crisp, well-washed and neatly bunched shoots. Small, woody stems will not sell for any price, and dirty poorly bunched stalks are not wanted, even though the quality may be excellent. We usually cut in the morning, wash in a tub partly filled with pure water, and tie with new white twine in bunches of two pounds or more. The stems should be arranged neatly, and the bunch be tied so that it will look enticing to the prospective customer. If any of the details are neglected or forgotten the sale will be affected thereby.



➤ Question Drawer. ✦

Heater for Greenhouse.

1020.—Can you give me the address of the Hitchings & Co., who manufacture the Domestic Water Heater, recommended by the man who wrote the description of the amateur's greenhouse on p. 20 No. 1., Vol. xix. of the Canadian Horticulturist? If you cannot, can you tell me where to get a heater that would heat a thousand (1,000) feet air space—the temperature falling sometimes as low as 40°. If you will answer this through your valuable Journal, I shall be very much obliged.

Yours sincerely,
PERCY P. FARMER.

Arnprior.

Hitching's Domestic Water Heater is made by Hitching's & Co., 233 Mercer St., New York. It will probably answer as well as any for the purpose named.

There is also, I believe, a small sized Daisy heater, made at Toronto, but without more data I cannot tell the size that will be required as it depends upon the area of exposed glass rather than the cubic air space. The radiation required will be about the one half the glass area.

L. R. TAFT,

Agricultural College, Michigan.

Small Fruits at Gravenhurst.

1021. SIR,—Strawberries have borne a splendid crop, one-third of an acre yielding 930 quarts, averaging 6½ cents each, with a very rapid sale. Indeed, I was not able to supply the demand. Currants are good; red and white ones bring 7½ cents, and black 12½. The only trouble is that there are not enough home-grown fruits, for these are so much fresher than those brought from a distance.

Could you recommend a good late variety of strawberry, and also a good early kind. We have Jessie, Crescent, Logan and Wilson, and would like new kinds bearing large berries.

JESSIE PARKER, *Gravenhurst.*

Reply by Prof. H. L. Hutt, Agricultural College, Guelph, Ont.

Such reports are encouraging, and quite different from those received from many of the older fruit sections, where the supply is far in excess of the demand, and the cost of transportation eats up

all the profits when it is sent to a distant market. Where it can be obtained there is no market like the home market for the small and soft fruits. At anything like the prices mentioned there is money in growing small fruits, and the northern growers who first go into it in a business-like way to supply this home demand, will have a little Klondike of their own.

The varieties of strawberries you mention have never made any great records for themselves here, or at least we have had many other varieties which have far excelled them. As one of our leading early varieties I would mention Van Deman. Sadie, a new variety, beat it this year, but for an average of three years Van Deman heads the list for earliness. Warfield comes in a few days later, and usually holds out much longer. It ranks eighth for total yield among 220 varieties fruited this year, and averages second among 85 varieties grown for three years. Saunders, Tennessee, Prolific, Haverland and Clyde, are all heavy-yielding, excellent, midseason varieties. The latter stands second on the list this year for total yield, and has certainly proved itself worthy of all the high compliments paid to it. Stone's Early heads the list this year, and also for an average of three years as the most productive berry, but as it so seriously lacks size and firmness we cannot recommend it. Edgar Queen has also made a great record for itself. For total yield it ranks third among the 220 varieties grown this year, and averages third among the 85 varieties grown for three years, and it heads the list this year and for an average of three years for the largest late yield. Its worst fault is a lack of firmness, which might also be said of Dominion, another heavy-yielding, late variety, which in most respects is superior to Edgar Queen.

QUESTION DRAWER.

Ever-blooming Hardy Rose?

1022. SIR,—Is there such a thing as a really ever-blooming hardy rose? A rose that will stand the Canadian winter, when protected, and give flowers all through the summer and autumn months? I had the Hybrid Tea Rose, La France, but it only made an effort to flower a second time, too late to escape frost.

A friend of mine has what she believes to be a Bourbon Rose, but it flowers only once in early summer. The small Parquetette (Polyantha) is an ever-bloomer of a kind, giving a few flowers after the usual early bloom. Are the "Hybrid Perpetuals" more satisfactory? They bloom only once, but do the more tender and difficult "Ever-bloomers" repay the amateur for the extra trouble that they give. Hybrid perpetuals require protection here (Mount Forest). Would the semi-hardy kinds succeed at all, even with protection, in the cooler parts of Can da, say, between Lat. 43° and 44°? If any successful rose-grower can give the desired information I shall be much obliged.

W. E. Brooks, Mount Forest, Ont.

A Budget of Questions.

SIR,—An answer to the following questions much through your valuable magazine, will oblige an old subscriber and

AMATEUR GARDENER.

1. The best 20 hardy roses, everything considered?
 2. The best doz. hardy roses, autumn bloomers?
 3. The best doz. hardy roses, color darker than rose?
 4. The best doz. highly perfumed?
 5. The best Hybrid Teas, worthy of garden culture (with slight protection.)
 6. The best hardy climbing roses.
 7. The best half-hardy, with perfume?
 8. The best hybrids of Rosa Rugosa?
- In answer to Question 1, state which roses are better on their own roots than budded.
9. The best soil and aspect for manner of propagation of out-door hardy Carnations?
 10. The best three clamatis for veranda?

FRUIT CROP REPORT.

ESSEX Co.—A. McNeill.—Fruit prospects in Essex are practically unchanged. Apples—Baldwins and Greenings, good. No Spys, pears good, peaches good, plums, full crop, grapes, very good.

MIDDLESEX AND PERTH Co.—T. H. Race.—Fruit crop not so promising as a month ago. Early and fall apples, good. Some winter varieties good; Spies, very poor; Early pears, good; late pears, poor; plums, good to extra good.

SIMCOE Co.—G. C. Caston.—Early apples, very good; fall apples, good; winter apples, poor; pears, very good; plums, very good, but suffering from drouth.

DURHAM Co.—E. C. Beman.—The prospects are decidedly poorer than when last report was sent. The long-continued drouth has caused much of the fruit to drop, especially apples and plums. Pears and grapes are not so much damaged; apples will be a very poor crop; pears, fair to good; plums, very poor; grapes, good.

LINCOLN Co.—A. M. Smith.—Peaches, very poor; apples, poor; pears, good; plums, good; grapes, very good.

OXFORD Co.—J. S. Scarff.—Winter apples, only fair; fall apples, good; pears, good; peaches, good; plums, good, but dropping; cherries, poor; grapes, good.

HURON—J. A. Morton.—The prospect for fruit is good; in some sections very good.

PRINCE EDWARD Co.—W. H. Dempsey.—The prospect for fruit of all kinds is growing less every day, owing to the drouth. Ap-

ples very poor, pears poor, plums good, raspberries dried up.

WENTWORTH Co.—M. Pettit.—Apples poor, pears fair, plums good, grapes good. Considerable scab on pears and apples.

FRONTENAC Co.—Geo. Nicol.—Fall apples good, winter apples poor, small fruits very good.

VICTORIA Co.—Thomas Beall.—The fruit prospect has changed very much since last report. Apples fair, pears very good (fungus checked), plums very good, grapes fair.

HURON Co.—A. E. Sherrington.—Apples poor (except Duchess, which is good), pears poor, plums fair, cherries fair.

OTTAWA—R. B. Whyte.—There has been no change in the fruit prospects since last month's report, except in gooseberries. The great heat of two weeks ago scalded the berries so badly that great numbers of them dropped. Fungus diseases do not appear to be prevalent this year. There is no sign of gooseberry mildew, nor plum blight, no apple scab nor grape rot; so my favorable report of last month bids fair to hold good for the season.

LEAMINGTON—W. W. Hilborn.—The prospect for the peach crop has changed somewhat. Young trees dropped most of their fruit; trees that have been planted five or more years have from nothing to a full crop, and will average from fair to good; under that age, poor. Other fruits have not materially changed.

OPEN LETTERS.

GRENVILLE Co.—H. Jones.—Apples poor, pears good, grapes good, plums fair. Apples are the only fruit grown to any extent in this county, and the conditions are far from encouraging. In unsprayed orchards, there will not be more than an average of one bushel to the tree, in orchards of 15 years of age and over, fruit will be undersized and spotted. In sprayed orchards, the crops will probably be one brl. per tree, or more, and from 60% to 75% clean. On light gravelly soils, the fruit is dropping badly, but on

loams they are holding well. In my July report, "Green apple worm" should read "Green aphid."

DUNDAS Co.—W. A. Whitney.—Apples fair in quantity, very good in quality. The prospect is that the crop will be three times as valuable as last year. Plums very good, pears very good, grapes good; very few grown for market, although most kinds do well if laid down in winter. We predict good prices for Snow apples, which is our main crop.

* Open Letters. *

The Late Richard Trotter.

SIR,—It is with sincere regret that I note the announcement of the death of Mr. Richard Trotter, of Owen Sound, Ont. For a period of six years Mr. Trotter was one of my most valued correspondents, and a very reliable source of information regarding plum growing. The Experimental Farm was the recipient of several packages of scions of plums, representing varieties which were the product of his own labor and intelligent perseverance. One of these received in 1892 has proved to be one of the hardiest of the Domestica class. Another at Ottawa described in the Report of the HORTICULTURIST for 1894 has fruited as a top graft on *Prunus Americana* at the Central Farm. It appeared to me to be a variety possessing many excellent qualities and entirely worthy of extended trial. Mr. Trotter said that this latter was from the seed of Evelyn, a local seedling, crossed with Felleberg. The tree is a strong grower with thick healthy leaves. A description of the fruit is as follows, taken from the Report of 1894, namely:—"John A." Fruit: large, oblong, sometimes egg-shaped, slightly flattened laterally. Color, a dark bronzy red with a brighter flush near calyx; bloom heavy purplish blue; suture deeply marked; cavity one sided with prominent swollen lip on side opposite suture. Stem 1½ inches long, stout. Flesh greenish yellow, firm and juicy; a pleasant sub-acid. Pit large semi-circling. The prune characteristics are strongly marked. Keeps well. Season Sept. 10 to 20th or later.

I speak specifically of this variety for the purpose of directing attention to the life work of public service rendered by Mr. Trotter, and with the hope that the good he has done may by being brought to the notice of his Canadian fruit growing brethren, live after him in the fullest meaning of the phrase.

JOHN CRAIG.

Ithaca, N. Y., June 20, 1898.

Peach Curl.

SIR,—A gentleman here had several trees afflicted last year; his wife said her father had used a mulching or dressing of wood ashes with success in the disease, so he tried this treatment. Result—No curl on his trees, but those in next yard were very badly infected. Only an isolated case which may be due to something else, but I mention it to excite criticism.

J. M. DICKSON, Hamilton.

Notes on Fruit Crop.

SIR,—Small fruit here is a short crop, and rather poor in quality. Strawberries failed to root last year, but what fruit was got was good. Raspberries are drying up. Gooseberries, currants and cherries are small, the latter little more than skin and stone. Osheim was in first here and the finest of any I have seen.

Gooseberries got such a scorching last year with mildew that they bloomed very sparingly this spring but set well. Some varieties were killed in the ground last winter. Champlain suffered worst in this respect, and I never saw a dead twig on this variety before.

Quite half the fruit has fallen during the last three weeks. When closely examined, the small grub is to be found in every berry.

Bushes have made a fine growth this season. What few plum trees we have in this section are well loaded. Winter apples are a light crop. The Duchess is loaded everywhere.

S. SPILLETT, Nantyr.